

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A LOOK INTO SECONDARY TEACHERS' PERCEIVED KNOWLEDGE AND
ATTITUDES OF APPLIED BEHAVIOR ANALYSIS AND THEIR EFFECT ON
CLASSROOM USE

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

BY

SHELBY L. DORSEY

Norman, OK

2021

A LOOK INTO SECONDARY TEACHERS' PERCEIVED KNOWLEDGE AND
ATTITUDES OF APPLIED BEHAVIOR ANALYSIS AND THEIR EFFECT ON
CLASSROOM USE

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

BY THE COMMITTEE CONSISTING OF

Dr. Kendra Williams-Diehm, Chair

Dr. Howard Crowson

Dr. Emily Kuntz

Dr. Aiyana Henry

Dr. Annie Baghdayan

© Copyright by Shelby L. Dorsey 2021
All Rights Reserved.

Abstract

Teachers are under pressure to improve both academic and behavioral outcomes for students' in-school and post-school performances. Secondary school teachers are tasked with not only meeting challenging instructional and curriculum needs but also addressing their students' diverse social and behavioral needs. The purpose of this study was to examine secondary teachers' knowledge and attitude toward applied behavior analysis (ABA) and their use of ABA. Furthermore, this study examined if knowledge and attitude predicted use of ABA.

Dedication

To Tatum and Violet, I hope my strive for education and effort in this document have taught you that you must persevere to accomplish your dreams. What I have learned can be summed up in this advice: take feedback thoughtfully and gracefully, think outside of your lived experiences, and focus on your effort because it is the key to making all things happen.

Acknowledgments

I cannot express the sheer magnitude of my gratitude toward the people I have been so fortunate to be supported by, but I shall try.

Thank you to my advisor, Dr. Kendra Williams-Diehm. Your guidance through every stage of the process was invaluable. To my committee members: Dr. Annie Baghdayan, your mentorship, fierce support, and pure brilliance changed my life in more ways than one. I am so grateful for your guidance. Dr. Aiyana Henry, from Italy to Norman, you have been my calm water. Your reliability and diplomatic advice have served me well. Dr. Howard Crowson, your willingness to help, thoughtful advice, and unmatched expertise have made all the difference. Dr. Emily Kuntz, I appreciate your willingness to join my committee, provide critical feedback, and add a healthy dose of optimism; it was crucial to my advancement.

To my mentors: Dr. Ruth Boyd, Dr. Allen Boyd, Dr. Tracy Henry, Jessica Bowers, Dr. Susan Nichols, and Doretha Garman, thank you for believing in me. Your support has allowed me to follow my dreams and given me the opportunity to learn from the best. You each inspire me in so many ways.

To my editor, Dr. Kylie Lyons, thank you for sharing your wisdom freely, for believing in me, and for pushing me towards this finish line. Dr. Belkis Choiseul-Praslin, I appreciate your willingness to help with some of the most difficult tasks down to the last minute. You are a lovely person and a brilliant professor!

To my parents and sisters: Dad, thank you for believing in my ideas. Your support is the reason I dream as big as I do. You once said that you thought I could do anything but be a pilot; I took that literally. Mom, thank you for giving me strength. My tenacity, fearlessness, independence, and self-assurance come from you, and they allow me to chase every dream with an unbridled will. Marley, thank you for your loyalty and understanding. Your partnership is a foundational piece of my life. Darby, thank you for your unwavering support of my ideas and beliefs, and I hope to lead by example.

To my family: Jalen, my eternal optimist and the biggest supporter, thank you for loving me so deeply. Your encouragement to persevere has been a cornerstone of my success. To Tatum, my catalyst, your presence has inspired me to do the unimaginable, provided me with strength in times of doubt or fear, and given me a reason to prove that I can succeed. To Violet, my mirror, stay wild!

Finally, to my honorable mentions: Maurice “MJ” Porter, Dayna Parker, Joy Johnson, Jeanette Brown, Jonna Cox, Deanna DeBose, Jayne Turner, Kendra Stewart, Desiree Jefferson, Alyson Price, and Dawn Walker, you each have made a significant impact on my life, my education, and my ability to write this dissertation. Thank you for your humor, perspectives, friendship, ideas, and willingness for almost constant brainstorming. I thank each of you for being you and for being a part of my journey. You are so appreciated.

Table of Contents

Acknowledgments.....	5
Table of Contents.....	7
List of Tables.....	10
Chapter 1: Introduction.....	12
Research Background.....	13
Positive Behavioral Intervention and Support.....	15
Problem Statement.....	17
Research Purpose.....	18
Chapter 2: Review of Literature.....	22
Multi-Tiered Systems of Support.....	24
Behavior Analysis.....	28
Applied Behavior Analysis.....	29
Evidence-based Practices.....	33
Effective Practices for Teachers.....	36
Chapter 3: Methodology.....	42
Research Design.....	43
Participants.....	44
Response Rate.....	46
Questionnaire Items.....	48
Data Analysis.....	55
Chapter 4: Results.....	57
Research Question 1.....	59

Research Question 2.....	66
Research Question 3.....	72
Research Question 4.....	78
Chapter 5: Discussion.....	83
Findings.....	83
Research Question 1.....	83
Research Question 2.....	86
Research Question 3.....	86
Research Question 4.....	87
Conclusion.....	88
Implications and Limitations.....	92
References.....	94

Appendices

Appendix A: IRB Approval117

Appendix B: Recruitment Materials118

Appendix C: Survey Instrument121

Appendix D: Referenced Surveys.....142

List of Tables

Table 1.....	55
Table 2.....	57
Table 3.....	60
Table 4.....	60
Table 5.....	60
Table 6.....	61
Table 7.....	62
Table 8.....	63
Table 9.....	63
Table 10.....	64
Table 11.....	65
Table 12.....	65
Table 13.....	66
Table 14.....	66
Table 15.....	67
Table 16.....	68
Table 17.....	68
Table 18.....	69
Table 19.....	69
Table 20.....	70
Table 21.....	71
Table 22.....	71

Table 23.....	72
Table 24.....	73
Table 25.....	73
Table 26.....	73
Table 27.....	74
Table 28.....	75
Table 29.....	75
Table 30.....	76
Table 31.....	76
Table 32.....	77
Table 33.....	78
Table 34.....	79
Table 35.....	79
Table 36.....	81
Table 37.....	81
Table 38	82

Chapter 1: Introduction

Currently, teachers are under pressure to improve both academic and behavioral outcomes for students' in-school and post-school performances (Flannery et al., 2013; Lane et al., 2021). Secondary school teachers are tasked with not only meeting challenging instructional and curriculum needs but also addressing their students' diverse social and behavioral needs (Flannery et al., 2013). In a traditional secondary public school setting, time and financial constraints limit the possibility of delivering individualized support to all students who fail to acquire the necessary skills and knowledge, leading to poor working conditions for teachers (Chemlynski, 1996; Feitler & Tokar, 1982). Classroom working conditions have been found to be a highly predictive factor of teacher satisfaction. In cases where teachers report poor classroom working conditions, classroom management and student behavior are often listed as stressors that contribute to their decision to leave the profession (Hanks et al., 2019; Harris et al., 2019; Skaalvik & Skaalvik, 2016).

Schools can address challenging student behavior through effective classroom management if universal teacher expectations are supported through training, coaching, and role-playing provided during pre-service teacher training and continuing professional development at both the school and school district levels. Unfortunately, because of teachers' multifaceted academic responsibilities and students' diverse social and behavioral needs, organization-wide systems can be perceived as a checklist of unclear expectations rather than efficacious programming that leads to strong outcomes, especially considering that system-wide support procedures do not lend themselves to the consequence-based approaches adopted in teachers' pre-service learning (Bailey, 1991; Martella et al., 2003). This results in a higher likelihood of burnout of teachers and, ultimately, teacher attrition (Nguyen et al., 2019). Currently, two-thirds

of teachers in the US who leave the profession cite reasons other than retirement as a catalyst for their departures (Garcia & Weiss, 2019; Sutchter et al., 2017). Consequently, over a span of more than forty-five years, behavior management has emerged as a major trend among teachers and researchers in the United States (Dunlap et al., 2010; Martella et al., 2012; McPartland & Dill, 1977; Sulzer-Azaroff, 1986). One of the most pressing reasons for adopting behavior management is to reduce teacher attrition, as teacher shortages lead to dire, far-reaching consequences for society as a whole (Nguyen et al., 2019).

As of 2021, the impact of the COVID-19 pandemic is predicted to have alarming repercussions for the teaching profession, leading to an increase in overall teacher attrition. According to the most recent National Center for Educational Statistics (NCES, 2020) data, one in three teachers stated that the COVID-19 pandemic has made them more likely to leave the profession early, and this figure increased to one in two in teachers over the age of 50 (Taie & Goldring, 2020). However, most importantly, research indicates that “high turnover rates reduce achievement for students whose classrooms are directly affected, as well as for other students in the school” (Sutchter et al., 2017, p. 1).

Research Background

Teachers need well-researched behavior-management strategies to alleviate some of the aforementioned challenges. A teacher is the single most important element that a school can utilize to improve student achievement (Marzano, 2003; Meyers et al., 1997). The existing research shows that “*effective teachers appear to be effective with students of all achievement levels regardless of the levels of heterogeneity in their class*” (Meyers et al., 1997, p. 63) [emphasis in original], and if a teacher is ineffective, students with differing abilities will make inadequate progress comparatively (Meyers et al., 1997; Sulzer-Azaroff, 1986).

For the past decades, psychologists and educators have been working toward finding the best behavioral management and pedagogical strategies for students with and without disabilities in a variety of settings. Best practices in both general and special education have evolved to include a multitude of technologies for teaching and shaping students' classroom behavior. However, as Martella et al. (2011) explain, it is a mistake to address behavior management as a set procedure that can be used on command to decrease students' disruptive behaviors in the classroom. Instead, behavior management practitioners should adopt a behavioral lens in order to understand the role of students' environments in shaping their behaviors in classrooms. While the school and classroom environments are not the only two environments in a student's life, they are the only two that teachers can control (Martella et al., 2011).

Evidence-based practices (EBPs) are professional practices that have been subjected to rigorous research. EBPs are interventions that can be effective for a large majority of the population that is being served (Cook et al., 2014). EBPs are used in general education and special education as behavioral interventions to promote good student behavior. Although effective, the existing research indicates that teachers are ill-equipped to determine the appropriate EBPs to address problem behaviors, particularly in the area of classroom management, despite receiving the relevant pre-service and in-service training (Adamson et al., 2019; Bailey, 1991; Begeny & Martens, 2006; Flower et al., 2017; Freeman et al., 2014; Wei et al., 2010). Thus, it is essential for school administrators to implement frameworks that promote students' prosocial behavior, cooperative behavior, and academic success as a means of decreasing problem behavior (Horner & Sugai, 2015; Martella et al., 2012; Mitchell et al., 2017; Nelson et al., 1996; Nelson et al., 2002; Nelson et al., 2009; Sugai & Horner, 2009). However, this is a challenge because schools often lack the ability to support such learning environments

due to reduced resources, growing diverse populations, students who exhibit severe problem behavior, and an inability to adopt and maintain policies and practices that meet the needs of all students (Eber et al., 1997; Holt et al., 2004; Knitzer et al., 1990; Martella et al., 2012; Nelson et al., 2002; Nelson et al., 2009; Stevens & Price, 1992; Sugai & Horner, 2009; Walker et al., 1995).

Positive Behavioral Intervention and Supports

For the purpose of this study, all positive behavior support programs (i.e., Positive Behavioral Interventions and Supports [PBIS] and School-Wide Positive Behavioral Interventions and Supports [SWPBS]) were identified. PBS is derived from the 1997 reauthorized Individuals with Disabilities Education Act (IDEA). PBS operates using a preventive approach and values of positive behavior support that originate from the core principles of applied behavior analysis (ABA). This strategy supports the success of all students and is a prevention-oriented way for schools to “(a) organize evidence-based practices, (b) improve their implementation of those practices, and (c) maximize academic and social behavior outcomes for students” (“Positive Behavioral Intervention & Supports,” 2016, p. 3).

Unlike prepackaged curricula, PBS is neither a scripted intervention nor a manualized strategy. Instead, it is a school-wide framework that utilizes EBPs to construct multifaceted systems that manage multiple factors simultaneously (Harrison & Thomas, 2014). PBS focuses on four elements: (1) outcomes, (2) data, (3) practices, and (4) systems (Horner & Sugai, 2015). These elements can be achieved by supporting student and staff behavior, decision-making, and social competence and academic achievement; however, these behavior supports cannot be applied to every student without heeding the culture of the school and that of the individual students in the school (Fallon et al., 2012); thus, PBS is a responsive approach that is applicable

for all student populations. Additionally, PBS is becoming an increasingly popular strategy for improving the disproportionality of special education referrals and disciplinary referrals. In the PBS approach, the use of constructive and preventive strategies that emphasize data-driven decision-making procedures, use of learning history, and attention to the significance of contextual factors allows each school to operate within its own culture and provide relevant interventions based on specific needs. These strategies are preventive in nature and are complementary to the core ABA approaches and constructs (Tincani, 2007a).

In a review of the literature on positive behavior support strategies currently practiced by Fallon et al. (2012), two major areas were determined to be contributing factors to the successful delivery of ABA in PBS: the classroom context and teacher preparation. A disadvantage of PBS is that it is not effective within culturally disadvantaged school settings when it is implemented without proper use of functional behavior assessment (FBA), which assesses the causes of the problem behavior rather than only addressing the behavioral problems superficially (Harrison & Thomas, 2014). This supports the use of ABA, which is considered to be adaptable and appropriate for diverse student populations (Fallon et al., 2012; Fallon et al., 2018; Gregory et al., 2017; Vincent et al., 2011; Vincent & Tobin, 2012). Thus, teachers must be sensitive to their classroom composition and, consequently, capable of preemptively applying appropriate EBPs. This awareness should be sharpened in teacher preparation programs, wherein they learn best practices.

Existing research indicates that despite most institutions' best efforts, a disproportionate number of culturally diverse students in the US are referred to special services or identified as students with one or more disabilities, who require special services/special education (Fallon et al., 2012; Vincent & Tobin, 2011). Similarly, it is suggested that behavioral referrals also follow

this trend: “Disparate school-based discipline practices at the national, state, and building level for African American and Hispanic/Latino students...[lead to] negative effects on individual students...and overall school climates” (Harrison & Thomas, 2014). A disproportionate number of non-White students with disabilities receive referrals for disciplinary misconduct in comparison to their White counterparts with and without disabilities (Capatosto et al., 2017; Cross et al., 1989; Skiba et al., 2002; Skiba et al., 2008).

Problem Statement

Presently, it appears that teachers’ understanding of and experiences with ABA are limited to the familiarity of use among the autism population, particularly as therapy or service delivery of ABA (Allen & Bowles, 2014; Alotaibi, 2015; Austin & Marshall, 2008; McCormick, 2011; Randazzo, 2011; Smyth et al., 2019). ABA challenges the traditional approach to behavior management because of its proactive application instead of reactive application (Martella et al., 2003). However, there is some consideration that teachers have not realized that what they are currently using in their classrooms is behaviorism, the foundation of ABA (Broughton, 1974), and that ABA is the foundational principle of the multi-tiered systems of support (MTSS) framework; they believe the practice is to be implemented by a trained behavior analyst rather than themselves (Putnam & Kincaid, 2015). This lack of understanding can affect the social validity of interventions implemented through MTSS. If used as a set of guiding principles, ABA may lead to consistent practice among educational professionals who teach diverse student populations and decrease disproportionality in special education referrals and discipline referrals. Additionally, the use of ABA as a set of guiding principles may also alleviate some of the challenges associated with teacher attrition. However, teachers may not have the training or resources to access the benefits of ABA. A more robust understanding of MTSS, grounded in the

theory of behaviorism and ABA, has been shown to increase teachers' understanding of why a shift from their previous consequence-based approach is necessary (Dowey et al., 2007; Grieger, 1972; McCormick, 2011; Merrett & Wheldall, 1982; Throll & Ryan, 1976; Vane, 1972 ; Wheldall & Congreve, 1980). Knowledge of ABA can assist in further emphasizing how a systems-level adoption of a proactive, antecedent-based, and data-informed approach of MTSS benefits both students and teachers in significant ways (Kremer & Moore, 1978; Lane et al., 2018; Wheldall & Congreve, 1980).

This study seeks to examine teacher familiarity with ABA to fully understand teachers' awareness and understanding of ABA and how, if at all, they implement the technology in a secondary school setting.

Research Purpose

MTSS is theoretically grounded in ABA (Lane et al., 2018). The empirically supported behavior principles used to change and sustain socially significant behaviors in ABA are similarly used in the MTSS framework as prevention and, when necessary, intervention (Pullen & Kennedy, 2019). It is relevant to investigate the knowledge, attitudes, and use of ABA, specifically among secondary teachers who teach at school using the MTSS framework because the social validity of such interventions is important for its effectiveness (Freeman et al., 2017).

Although the knowledge, attitude, and use of ABA in the classroom have been studied previously (McCormick, 2011; Randazzo, 2011), the subjects of focus were elementary teachers and/or teachers who primarily taught students with the disability category label of autism spectrum disorder (ASD). As of 2020, all 50 states in the United States have reported the use of MTSS in general education school settings (Berkeley et al.,

2020); however, no study has addressed secondary teachers' knowledge, attitude, and use of ABA in the classroom. To understand how educators are currently using this technology in public schools, it is critical to collect data through surveying methods.

Research Questions

The following research questions will guide this study: Research Question 1: What level of perceived knowledge do secondary teachers have on applied behavior analysis? How is this perceived knowledge impacted by demographic factors? Research Question 2: What level of perceived attitude do secondary teachers have on applied behavior analysis? How is this perceived attitude impacted by demographic factors? Research Question 3: What level of perceived use do secondary teachers have on applied behavior analysis? How is this perceived use impacted by demographic factors? Research Question 4: Does perceived knowledge, attitude, and use predict the other?

Definitions of Major Variables and Terms

The following operational definitions are provided for the clarification of terminology used throughout this study.

Academic Response to Intervention (RTI)

Academic RTI is a preventive system approach to improve school-wide and individual achievement through high-quality universal instruction and additional tiered supports provided in response to student needs. This includes collaboration across general and special education. Decisions in academic RTI are based on data obtained from validated screening and progress-monitoring tools. While these data may be used as part of the special education eligibility-determination process, academic RTI includes *all* academic instruction systems, including core classroom instruction (McIntosh & Goodman, 2016).

Positive Behavior Support (PBS)

For the purpose of this study, the term *positive behavior support* (PBS) is used to encompass all social and emotional behavior frameworks (i.e., PBIS and SWPBS). PBS is a framework for implementing EBPs, providing a three-tiered continuum of support to students, using systems to support staff in the implementation of the practices, and using data for decision-making. Thus, PBS includes a three-tiered approach for managing social and emotional behavior. PBS emphasizes an instructional approach to behavior support, prevention through environmental change, adaptation to local context, and using the principles of ABA to achieve outcomes that are valued by staff, students, and families (McIntosh & Goodman, 2016).

Integrated MTSS

The integrated MTSS model provides all students with the best opportunities to succeed both academically *and* behaviorally in school. MTSS focuses on providing high-quality instruction and interventions tailored to student needs across domains and monitoring progress frequently to make decisions about changes in instruction or goals. It is not simply the implementation of both academic RTI and PBS systems; there is a systematic and careful integration of the academic and behavioral systems to enhance the efficiency and effectiveness of all school systems (McIntosh & Goodman, 2016).

Evidence-based Strategy

The phrase *evidence-based strategy* is used to describe EBPs and evidence-based methods (EBMs). Based on NCLB (2001), *evidence-based strategies* (EBSs) are defined as any practice or strategy based on peer-reviewed research, involving the application of systematic and objective procedures to obtain knowledge that is reliable and valid with regard to educational activities and programming.

Applied Behavior Analysis

Applied Behavior Analysis (ABA) is defined explicitly as “a scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries” (Cooper et al., 2020, p. 2). MTSS, PBIS, SWPBS, RTI, and other multitiered systems of support fall under the umbrella of “ABA.” For the duration of this paper, the acronym ABA will be used to encompass all strategies, interventions, and multitiered systems of support.

Chapter 2: Literature Review

In the past two decades, the United States has seen increased expectations placed on teachers' workloads (Harris, 2007; Harris et al., 2019; Kelchtermans, 2017; Skaalvik & Skaalvik, 2016; Torres, 2014). In an attempt to provide support to teachers, many policymakers and school leaders have implemented a system framework to assist teachers in juggling the aforementioned responsibilities (Harris et al., 2016; Lane et al., 2018). Unfortunately, this has resulted in an increased scheduling of meetings and systems that do not seem to align with the approaches learned by teachers during pre-service training (Burkhauser, 2017). Increased expectations from teachers have led to teachers reporting a decreased level of respect for them and a lesser respect for their craft (Harris, 2017; Skaalvik & Skaalvik, 2016). In a study, only 10% of the teachers surveyed believed that the current expectations placed on teachers were reasonable (Harris et al., 2019). This finding supports the growing reports of toxicity in the public school environment, encompassing the stressed relationship between teachers and students (Ravitch, 2016).

Currently, teachers are under pressure to improve both classroom and student outcomes for in-school and post-school performances (Flannery et al., 2013). Secondary school teachers are tasked with not only addressing challenging instructional and curriculum needs but also responding to the social and behavioral needs of their students (Flannery et al., 2013). In a traditional secondary public school setting, time and financial constraints limit the possibility of delivering individualized support to all students who fail to acquire the necessary knowledge and skills. Unfortunately, as of 2021, the impact of the COVID-19 pandemic is predicted to have alarming repercussions for the profession, including an increase in overall teacher attrition. According to the most recent National Center for Educational Statistics (NCES, 2020) data, one in three teachers stated that the COVID-19 pandemic has made them more likely to leave the

profession early, and this figure increases to one in two for teachers over the age of 50 (Taie & Goldring, 2020). However, most importantly, the extant research indicates that “high turnover rates reduce achievement for students whose classrooms are directly affected, as well as for other students in the school” (Sutcher et al., 2017, p. 1).

Nguyen et al. (2019) conducted a substantial meta-analysis of the literature on teacher attrition and retention. They added 120 additional recent studies to this literature that determined that the rate of teacher attrition has grown substantially over the last two decades. In this expanded examination of the extant literature from 1980 to 2018, they found compelling evidence that school organization characteristics, particularly student behavior problems, administrative support, and professional development and training, strongly influence whether teachers stay or leave the profession:

Taken together, these results suggest that there are many school organizational characteristics that could be used to lower teacher attrition. In particular, lowering student disciplinary problems, improving the work environment, increasing administrative support, and providing better professional development and induction/mentoring for beginning teachers are all viable actions that can be taken to reduce teacher attrition. (Nguyen et al., 2019, p. 33)

When teachers are well-versed in best practices and understand how to implement EBPs with fidelity, they are able to respond to students’ diverse needs, including academic-to-behavioral concerns with cultural sensitivity, in a way that is rewarding for both the student and themselves.

Conversely, teachers who are not prepared to respond to the multifaceted needs of diverse classrooms experience negative outcomes. McKinney et al. (2005) found that “50 percent of urban teachers leave the profession within the first five years of their career, citing behavior

problems and management as factors influencing their decision to leave” (p. 16). Nguyen et al. (2019) determined that there is little evidence to suggest that the urban setting plays any role in influencing teacher attrition. Instead, teachers leave the profession for similar reasons across various school sizes and levels of urbanity, and there is little evidence that “percent free or reduced priced lunch (FRPL), percent individualized education plan (IEP), and schools with the majority of students classified as low socioeconomic status” (Nguyen et al., 2019, p. 4) play any major role in influencing teacher attrition. However, there is substantial research indicating that teacher attrition is lower for schools with high student achievement; teachers are less likely to leave the profession if they work in schools or districts with high- or above-average academic achievement (Eller et al., 2000; Hanushek et al., 2004; Nguyen et al., 2019). Existing research indicates that not only do teachers want to work where students are successfully learning, but they also want to learn successfully. Teachers who receive effective in-service professional development are also less likely to leave than those who do not do so (Nguyen et al., 2019).

Myriad practices are employed by schools to address both the behavioral and academic needs of students. A broadly responsive framework that addresses early identification and intervention of student behavioral and academic needs emerged in the form of MTSS, described as “a special education model that was based on prevention, early and accurate identification, and aggressive intervention using research-based strategies and procedures” (Pullen & Kennedy, 2019, p. 28).

MTSS

MTSS is an overarching problem-solving framework consisting of efficient delivery of a curriculum and EBPs that allow schools to meet the individual academic and behavioral needs of all students (Pullen & Kennedy, 2019). MTSS is described by the Office of Special Education

and Rehabilitative Services (OSERS, 2015) using a definition of Pullen and Kennedy follows:

A schoolwide approach that addresses the needs of all students, including struggling learners and students with disabilities, and integrates assessment and intervention within a multi-level instructional and behavioral system to maximize student achievement and reduce problem behaviors. (Pullen & Kennedy, 2019, p. 17)

All decision-making within MTSS relies on the following procedure: data collection through a series of screening assessments and progress monitoring; review of findings on a universal, group, and individual level to guide instruction; and intervention selection (Sugai, 2013). A common equation for MTSS for school-wide change is the layering of specific programs such as RTI and PBS to address both academic and behavioral needs of each student (Stewart et al., 2007).

Schools that implement only academic models and those that implement only behavior models may not observe the kinds of results found by schools that combine both academic and behavioral school-wide models (Martella et al., 2012; Stewart et al., 2007). MTSS facilitates the creation of a school-wide system of adjustable supports, allowing educators to pivot immediately to provide appropriate levels of support based on student data to prevent academic regression or disparity and severe problem behavior (Harlacher et al., 2014; Pullen & Kennedy, 2019). The purpose of this integrative framework is to promote data-based decision-making, objective identification of student behavioral needs, systematic instructional support and interventions, and progress monitoring to track and promote growth in a multifaceted system (McIntosh & Goodman, 2016; Stewart et al., 2007).

MTSS models typically have three tiers of support and intervention that progressively become more intensive (Harlacher et al., 2014; Pullen & Kennedy, 2019). Tier 1 focuses on

universal support provided to all students (e.g., class lessons and classroom rules/expectations). Tier 2 targets a subset of students identified as needing support beyond that provided in Tier 1. Tier 3 provides highly individualized and intensive intervention for a small number of students whose academic or behavioral performance has not been adequately addressed in previous tiers. Each tier is created to support a need that is identified by data collected on academic and behavioral performance and includes instruction and support of varying levels of intensity (Freeman et al., 2017).

Identification of student placement begins by gathering a baseline of individual current skills and/or deficits for progress monitoring and subsequently providing specific, ongoing support strategies as progress, or lack thereof, is made. Once the student reaches a predetermined performance level, the types and numbers of supports are decreased, and the student continues to be monitored to ensure their continued growth. If the data collected show regression in student performance, a reintroduction of intervention provides appropriate levels of support for ensuring students' academic and behavioral success.

Tier 1

Tier 1, or primary intervention, reaches the broadest student population; while all students have access to Tier 1, approximately 80% of the students become successful with these supports. All students experience Tier 1 behavior support.

“Tier 1” level focuses on establishing a schoolwide positive social culture that includes (a) defining and teaching a small set of behavioral expectations (e.g., be respectful, be responsible, and be safe), (b) establishing a ubiquitous system for reinforcing performance of these expectations, (c) implementing a consistent system for interrupting, correcting, and redirecting behavioral errors, and (d) building an efficient system to

collect, summarize, and use data for decision-making. (Horner & Sugai, 2015, p. 81)

Tier 2

Tier 2, or secondary prevention, reaches approximately 10%–15% of students whose needs are determined to be more significant than those addressed in Tier 1. These students “benefit from additional structure, more overt and frequent antecedent prompts, a higher rate of positive recognition, and elevated training in both behavioral expectations and self-regulation skills” (Horner & Sugai, 2015, p. 81).

Tier 3

Tier 3, or tertiary prevention, is designed for the approximately 5% of the total number of students who are identified as needing more intensive support than what is provided in Tier 2. Tier 3 includes individualized assessment, individualized support plan design, comprehensive support plan implementation, and the management of support by a team uniquely organized to meet the preferences and needs of the individual student(s). When implementing Tier 3 behavior supports, this team considers the student’s behavioral, academic, mental health, physical, social, and contextual variables (Horner & Sugai, 2015).

Positive Behavior Supports

While PBS is judicious in its implementation, it allows for flexible implementation. It utilizes the three tiers of MTSS that emphasize outcomes, practices, systems, and data as top priorities in the school setting (Pullen & Kennedy, 2019). PBS can be used as a global package and is often implemented in entire school districts, typically known as the SWPBS, allowing for consistent practices across all grade levels. Horner and Sugai (2015) state, “School-wide [PBS] is a framework for delivering both the whole-school social culture and additional tiers of behavior support intensity needed to improve educational and social outcomes for all students”

(p. 80). For the purpose of this study, all positive behavior support programs (i.e., PBIS and SWPBS) were identified as PBS.

PBS operates using a preventive approach toward students' social and behavioral management, utilizing values originating from the core principles of ABA. This method supports the success of all students and is a prevention-oriented way for schools to “(a) organize evidence-based practices, (b) improve their implementation of those practices, and (c) maximize academic and social behavior outcomes for students” (Sugai et al., 2000, p. 131). Horner and Sugai (2015) state that behavior analysis primarily impacts PBS in three key areas:

(a) The emphasis on operational definitions of behavior and intervention elements, (b) the logic model used to select environmental manipulations designed to alter student and staff behavior, and (c) an unrelenting commitment to measurement of both implementation fidelity and the impact of [PBS] on student outcomes. (p. 80)

Schools no longer need to approach students of concern with compartmentalized responses to the students' behavioral and academic performance issues; instead, “this comprehensive approach is important given the recent shift by schools from a reactive approach to behavior management to a proactive one” (Martella et al., 2012, p. 324). The employment of EBPs by teachers in their pedagogy is of critical importance to address students' behavior management.

Behavior Analysis

Drawing from B. F. Skinner's theory of behaviorism (Cooper et al., 2007), behavior analysis is based on the idea that learning is a function of change in behavior that behaviorists call operant conditioning (OR). OR is defined as “the basic process by which operant learning occurs; consequences (stimulus change immediately following responses) result in an increased

(reinforcement) or decreased (punishment) frequency of the same type of behavior under similar motivational and environmental conditions in the future” (Cooper et al., 2007, p. 700). Simply, each change in a person’s behavior is the result of that individual’s response to something that occurs in the environment.

Currently, behavior analysis is addressed through four primary means: (1) behaviorism, (2) experimental analysis of behavior, (3) ABA, and (4) practice guided by behavior analysis (Cooper et al., 2020). The experimental analysis of behavior focuses on finding and analyzing the fundamental principles of the observed behaviors, whereas ABA focuses on solving issues that are socially significant by using the defining principles and techniques of behavior analysis in measurable ways (Baer et al., 1968; Cooper et al., 2007; Cooper et al., 2020; Fisher et al., 2011). For the purpose of this study, the primary focus is on the fourth domain of behavior analysis, *practice guided by ABA*, as this domain focuses on the professional application of ABA to improve the lives of participants as a result of a change in their behavior through interventions informed by the applied research of the third domain, ABA (Cooper et al., 2020).

Applied Behavior Analysis (ABA)

ABA is defined explicitly as “a scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries” (Cooper et al., 2020, p. 2). ABA first seeks to understand the relationship between the occurrence of behavior and the environmental factors that influence that behavior and subsequently seeks to develop individualized interventions for improving socially significant behaviors. This work is conducted by behavior analysts who “conduct experiments aimed at discovering and clarifying functional relations between socially significant behavior and its controlling variables, with which they can

contribute to the further development of humane and effective technologies of behavior change” (Cooper et al., 2020, p. 21).

ABA is a relatively new technology, and it is “the process of applying sometimes tentative principles of behavior to the improvement of specific behaviors” (Baer et al., 1968, p. 91). Baer et al. (1968) published a seminal work titled “Some Current Dimensions of Applied Behavior Analysis,” in which they described the seven foundational dimensions of ABA in detail. These dimensions are: (1) *applied*, which refers to the requirement that studies and interventions must be relevant to societal needs and target socially significant behaviors; (2) *behavioral*, which implies that all studies must directly measure observable behavior and not make assumptions; (3) *analytical*, which implies that the experimenter has control over the response; (4) *technological*, which implies that experimental conditions are thoroughly identified, operationally defined, and replicable; (5) *conceptual*, which implies that procedures are well described and in tune with the framework of behaviorism; (6) *effective*, which implies that interventions must yield substantial changes in behavior; and (7) *generality*, which provides generalized outcomes that show that behavioral change is durable over time and in a wide array of environments. Regardless of the variation in intervention programs or service delivery, all ABA treatments display these seven foundational dimensions (Cooper et al., 2020).

Reinforcement is a vital element of ABA. A reinforcer is “a stimulus change that increases the future frequency of behavior that immediately proceeds it” (Cooper et al., 2007, p. 34), meaning that anything that strengthens the desired response is a reinforcer. According to Cooper et al. (2020), positive reinforcement is “the most important and most widely applied principle of behavior” (p. 252). There are many relevant applications of Skinner’s reinforcement theory, as it applies to education and instruction. In his 1968 book *The Technology of Teaching*,

Skinner (1968) addressed programmed instruction as follows:

[It is] primarily a scheme for making an effective use of reinforcers, not only shaping new kinds of behavior but in maintaining the behavior in strength. A program does not specify a particular kind of reinforcer (the student may work under aversive control or for money, food, prestige, or love), but it is designed to make weak reinforcers or small measures of strong ones effective. (p. 155)

Skinner's ideas and theories of programmed instruction and operant conditioning have evolved and been incorporated into practice guided by ABA in Western school systems in many different ways, such as direct instruction, precision teaching, personalized systems of instruction, and imitation training (Cooper et al., 2020).

Practice Guided by ABA

Practice guided by ABA seeks to use evidence-based interventions, as these have been found to be effective through rigorous applied research to improve socially significant behavior and shape the occurrence of behavior and the environmental factors that influence that behavior (Cooper et al., 2020). Practice guided by ABA emerged as the fourth domain of behavior analysis when the practitioners of behavior analysis began designing and implementing behavioral change programs using interventions and strategies derived from experimentally validated applied research (Cooper et al., 2007). A defining characteristic of ABA is the discipline's commitment to improve the lives of practitioners of ABA in an applied manner, as these practitioners use behavior change programs as a method of service delivery in any field. These practitioners (e.g., a teacher, therapist, etc.) are tasked with identifying and changing socially significant behaviors that lead to improvements in daily life for both the student and those with whom they interact on a regular basis—including parents, teachers, classmates, or

colleagues in a work environment — and behaviors that may encompass “social, language, academic, daily living, self-care, vocational, and/or recreation and leisure behaviors” (Cooper et al., 2007, p. 16). Socially significant behaviors occur regularly as one moves throughout daily life. It is vital that the behavior analyst effectively serves the needs of a student whose needs cannot be met with a one-size-fits-all intervention. Jon Bailey (Cooper et al., 2020), an expert in the ethics of ABA, discusses the relevance of the technology of ABA. He also discusses its benefits that are incomparable to other psychological approaches; this belief is mirrored by Cooper et al., (2020), who stated:

ABA’s pragmatic, natural science approach to discovering environmental variables that reliably influence socially significant behavior and to developing a technology to take practical advantage of those discoveries offers humankind its best hope for solving many of its problems...applied behavior analysis research and practice have improved human performance and the quality of participants’ lives across a wide range of areas. (p. 21)

MTSS is a preventive framework that utilizes ABA tools, viewing student misbehavior as an opportunity to reteach and reinforce expected behaviors through the use of research-based behavioral interventions that are appropriate for all students, resulting in a more positive school climate (Sugai et al., 2000; Sugai & Horner, 2009; Sugai & Simonsen, 2020).

However, some ABA scholars discredit MTSS as a vehicle of ABA. Tincani (2007b) asked those critics to be mindful of B. F. Skinner’s (1938) early work, in which he distinguished the difference between what a behavior looks like—the topography—and what is maintaining the behavior—the function—of operant behavior in his concept of the operant. Although MTSS uses different terminology and strategies for describing interventions and protocols, the application of behavioral principles to minimize challenging behavior is consistent. Many critics may find that

when evaluated using impact on students and its potential to improve behavior analytic delivery, MTSS, PBS, and RTI are excellent complements to ABA scholars working in behavior analysis (Tincani, 2007b). A continued investigation into these technologies is needed, especially as more defined populations of students are identified. This study directs stakeholders, including general and special educators, policymakers and legislators, clinicians, and parents, who work to develop culturally competent programs to ensure strong outcomes for children with and without disabilities.

Behavior Management with ABA

The first step in a behavior management program is to teach a student what a specific behavior entails by using a skill-acquisition program using methods derived from ABA. Students are instructed to learn new skills using EBPs, such as functional behavior assessments (FBA), differential reinforcement procedures, environmental management, and preventive (or antecedent) behavioral interventions (Bloh & Axelrod, 2008; Fielding et al., 2013; Hursh, 2007).

McIntosh and Goodman (2016) stated, “Over the past 50 years, solid evidence has accumulated indicating that academic skills and behavior are linked, meaning that students with low academic skills are more likely to exhibit unwanted behavior in schools and vice versa” (p. 21). As a set of guiding principles, components of ABA may lead to consistent practices among educational professionals for managing diverse student populations.

Evidence-based Practices. EBPs are professional practices that have been subjected to extensive rigorous research. IDEA (2004) called for “applying scientifically based findings to facilitate systemic changes, related to the provision of services to children with disabilities, in policy, procedure, practice, and the training and use of personnel” (20 U.S.C. §1463, P.L. 108-446 §663). In answering this call, the education discipline adopted the term *evidence-based*

practices, which originated from the medical community (Sackett et al., 1996). This term is also commonly used by other fields to describe interventions and strategies “shown by high quality research to have meaningful effects on [consumer] outcomes” (Cook & Odom, 2013). EBPs are interventions that can be effective for a large majority of the population being served (Cook et al., 2016). They are used in general education, special education, and ABA as interventions for behavior change. While both the education and medical fields actively promote the use of EBPs, their definitions, uses, rigor, and professional buy-in vary notably between the fields. It must be noted that not all EBPs used in education are created equally, and not all EBPs have the same effect on each student or group of students. Specifically, for children of color and/or children from diverse backgrounds, using EBPs is more effective and leads to higher success rates than using non-EBPs. However, because it is important to identify the strategy that is most effective for each student, collecting data from each utilized EPB and reviewing that data is the best way to ensure students receive effective interventions. The most effective EBP must then be incorporated into the instructional services required by the individual student.

EBPs in Education. EBPs in education are defined as interventions or programs that are supported by high-quality research studies that demonstrate experimental control and result in improved student outcomes (Brantlinger et al., 2005; Cook & Cook, 2011; Cook & Odom, 2013; Odom et al., 2010; Reichow et al., 2008). This is different than the applied research domain of ABA, in which professionals are trained to evaluate each student’s improvement with every *individual* intervention using data-based decision-making; education professionals often lack the training to effectively use EBPs.

While teacher education programs and professional development are reported to leave teachers unprepared to consistently and effectively use EBSs, EBPs are nonetheless mandated by

the ESEA Reauthorization: The Every Student Succeeds Act (ESSA, 2015) and IDEA (2004). Each of these federal mandates requires teachers to use, to the greatest possible extent, academic and behavioral practices and procedures grounded in strong empirical research in order to meet the mandate that all public school students participate in high-stakes assessment in an attempt to demonstrate the students' levels of understanding of grade-level curriculum objectives in the areas of reading and math.

For educators to fulfill the mandates set by the federal government, they need to implement EBPs (Brantlinger et al., 2005; Burns & Ysseldyke, 2009; Odom et al., 2010; Reichow et al., 2008). These federal regulations are also tied to federal funding allocations for public schools across the nation, obliging schools to rely on meaningful research to make data-based decisions when determining instructional programming and methodologies. EBPs used in settings with special education students and students of color are an opportunity for these students to close the achievement gap. Low achievement is a variable that often plagues students of color. A large body of research documents a consistent pattern of Asian and White students performing better on achievement tests compared to their Black, Latinx, and Indigenous counterparts (Gregory & Weinstein, 2004; NCES, 2003). When such an achievement gap exists, schools are likely to see underperforming students become frustrated; this has been linked to a higher rate of school disruption and aggression (Choi, 2007; Miles & Stipek, 2006). Multifaceted approaches may offer the promise of closing the achievement gap for special education students if EBPs continue to be implemented for their explicit success with low-achieving students.

EBPs in ABA. As identified in the education literature (Callahan et al., 2008; Callahan et al., 2010; Horner et al., 2002; Myers et al., 2007; Rosenwasser & Axelrod, 2001; Simpson, 2001; U.S. Department of Health and Human Services, 1999), and for the purpose of this study, ABA

is considered an EBP. In the discipline of ABA, common EBPs are defined as

a treatment or intervention that has been shown to be effective by a substantial body of high-quality, peer-reviewed scientific research. When implementing any treatment, regardless of the type or amount of research evidence to support it, practitioners can and should verify its effectiveness with the students or clients they serve by direct and frequent measurement. (Cooper et al., 2020, p. 75)

When employing an intervention or practice, an ABA practitioner can appraise the intervention by collecting data and analyzing the exact protocol to verify its effectiveness and making appropriate changes based on the evidence provided by the data.

In general, ABA interventions meet the criteria set forth by the federal government for EBPs, as all ABA interventions are function-based interventions by design (Fielding et al., 2013; Hursh, 2007; Rosenwasser & Axelrod, 2001). ABA is defined explicitly as “a scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries” (Cooper et al., 2020, p. 2). Due to its evidence-based nature and the data-driven decision-making employed to create objective changes, the use of in-depth and theory-based EBPs in ABA should serve as a model for special educators to serve students of color with and without disabilities. Thus, “this comprehensive approach is important given the recent shift by schools from a reactive approach to behavior management to a proactive one” (Martella et al., 2012, p. 324). It is critical that teachers employ EBPs in their methodology to address behavior management.

Effective Practices for Teachers

Implications for Non-EBPs in the Classroom. Consistent findings of disproportionality

in school discipline referrals and exclusionary punishment suggest that racial and ethnic disparities in discipline begin at the classroom level (Gregory et al., 2010; McIntosh et al., 2014; Skiba et al., 2002; Skiba et al., 2008; Wallace et al., 2008). The differential selection suggests that students from diverse backgrounds are far more likely to be singled out for problem behavior, despite similar behavior being exhibited by White students (McFadden et al., 1992; Piquero, 2008; Shaw & Braden, 1990; Wehlage & Rutter, 1986). Vavrus and Cole (2002), in an ethnographic observational study, stated that many public school office referrals that led to school suspension were due to “violation of implicit interactional codes,” (p. 89) including consistently reported violations of a student calling into question the teacher’s authority or the established classroom practice. Not coincidentally, there was a disproportionate number of students of color from those singled out (Capatosto et al., 2017). Compared to White students, it is more likely for Black students to be issued a discipline referral for both defiance (Gregory & Weinstein, 2008) and non-compliance (Skiba et al., 2008). Taken together, these strongly suggest that the processes of differential selection at the classroom level can contribute to disparities in discipline.

“Differential selection” (Gregory et al., 2010) is a hypothesis that is part of a bigger framework to understand racial disparities in subjective judgment that can contribute to the understanding of racial discipline and achievement gaps in public schools across the United States. The application of exclusionary punishment in school discipline procedures paired with subjective criteria and flexibility in punishment criteria may be detrimental to Black, Latinx, and Indigenous youth (Gregory et al., 2010; Morrison & Skiba, 2001; Morrison et al., 2001), resulting in differential selection.

Schoolwide Supports. PBS has been successful in decreasing disproportionality in

special education and increasing the positive behavior of students with disabilities and students of color with and without disabilities (Vincent & Tobin, 2012). PBS operates by using the preventive approach and values of positive behavior support that originate from the core principles of ABA. This approach supports the success of all students and is a prevention-oriented way for schools to “(a) organize evidence-based practices, (b) improve their implementation of those practices, and (c) maximize academic and social behavior outcomes for students” (Sugai et al., 2000, p. 131). PBS meets the criteria for EBPs as a function-based intervention; however, ABA provides a distinction: an SWPBS model that utilizes FBAs and interventions is an EBP, an SWPBS model that does not utilize FBAs and interventions is not an EBP (Putnam & Knoster, 2016). If the SWPBS model does not provide FBAs and interventions, it does not qualify as a practice guided by ABA or an EBP. Implications for further research include practice guided by ABA in school settings to address the disproportionality and low achievement of students of color by means of its evidence-based nature and its reliance on data-driven decision-making.

A significant component of ABA is its reliance on data-driven decision-making outcomes. Teachers can use student, teacher, and program data to evaluate outcomes, guide interventions, and make future decisions. These behavior-management examples use components of ABA and can be implemented in any classroom, regardless of the age of the student, current academic level, racial or cultural make-up of the classroom, or the subject taught (Cooper et al., 2020). Each example listed above is also free of cost and does not require teachers or school districts to obtain any additional curriculum materials.

Secondary Setting

Nguyen et al. (2019) found that high school and middle school teachers were consistently

more likely to leave the profession than elementary teachers. Secondary teachers not only leave the profession more often than elementary teachers, but a higher percentage of secondary teachers reported student misbehavior, student tardiness, and class cutting as factors interfering with their ability to teach (Martella et al., 2012; McFarland et al., 2019; Ross et al., 2012). A 2011 study by Moore found some significant predictors of teacher discontent, leading to attrition. These predictors include “certification type, school size, rural locale, teacher perceptions of student problems, and classroom control” (Moore, 2011, p. 3). Additionally, this study also pointed out some significant predictors of teacher contentment that reduce the likelihood of attrition. These predictors include “teacher race and ethnicity, highly qualified status, and minority student enrollment” (Moore, 2011, p. 3). School climate is cited as a contributing factor to teacher attrition, a pervasive issue plaguing secondary schools across the country (Garcia & Weiss, 2019; McFarland et al., 2019). Utilizing a behaviorist approach in secondary schools for promoting students’ academic and behavioral success is promising but under-researched (Freeman et al., 2016; Gregory & Ripski, 2008; Gregory et al., 2014; Gregory et al., 2015; Putnam et al., 2002).

Teacher Perception. To develop a practical strategy for use in a setting, administrators should implement school-wide practices that can be easily utilized by educators and remain consistent across settings. “If an intervention is socially valid, it can hardly be effective...social validity is not sufficient for effectiveness, but it is necessary to effectiveness” (Baer et al., 1987, p. 323). The opinions of an intervention’s consumers are critical to its success (Kern & Manz, 2004). Teachers are more likely to use interventions effectively in their classrooms if they view the goals, procedures, and outcomes as socially important. It is imperative for teachers to view ABA as a socially valid practice. Teachers must believe that the specific interventions used in

ABA are easy to implement, feasible in the context of classroom routines and expectations, and cost-effective for their settings; if they do so, they are more likely to adopt, implement, and sustain ABA in their classrooms (Baer & Schwartz, 1991; Hursh, 2007; Kern & Manz, 2004; McCormick, 2011).

Teachers are limited in their exposure to ABA and how it can be utilized in the classroom setting. However, even a small amount of professional exposure to ABA has shown to result in a better understanding of ABA, which has resulted in an increase in positive attitudes toward the subject (Allen & Bowles, 2014; Dowey et al., 2007; McCormick, 2011; Randazzo, 2011). Thus, it is critical to understand the reciprocity of practice guided by ABA as a therapeutic or clinical service for developing behaviors and skills that is generalizable to multiple settings and that acts as an educational framework for skill acquisition and problem behavior reduction (Martella et al., 2014). Examples of reciprocity include a therapist providing a home-based therapy service that uses positive reinforcement in the natural environment to increase emerging language skills. Similarly, teachers can provide positive reinforcement in the classroom environment to increase emerging language skills. Another example is a classroom teacher using task analysis and employing reinforcement frequently while teaching an important classroom routine to increase the likelihood that students in the class will follow that routine in the future. Similarly, an ABA therapist uses task analysis and employs reinforcement frequently while teaching important self-care routines to increase the likelihood of students completing their daily routine. This demonstrates the practicality of ABA for use in the classroom by general and special education teachers, as well as by behavior analysts in medical models.

Despite the relevance of ABA as an EBP in both skill acquisition and problem behavior reduction for students of all ages, as well as its availability for use in varied educational settings,

many teachers do not consistently implement ABA strategies (Allen & Bowles, 2014; Axelrod et al., 1990; McCormick, 2011; Randazzo, 2011; Skinner & Hales, 1992; Tillery et al., 2010). Data are limited on the various knowledge, attitudes, and uses of ABA for secondary general educators, as previous studies primarily targeted teachers whose students were diagnosed with ASD, special education teachers, or primary/elementary classroom teachers (Allen & Bowles, 2014; Alotaibi, 2015; McCormick, 2011; Randazzo, 2011; Smyth et al., 2017).

Chapter 3: Methodology

The purpose of this study was to investigate secondary general and special education teachers' levels of the following: Research Question 1: What level of perceived knowledge do secondary teachers have on applied behavior analysis? How is this perceived knowledge impacted by demographic factors? Research Question 2: What level of perceived attitude do secondary teachers have on applied behavior analysis? How is this perceived attitude impacted by demographic factors? Research Question 3: What level of perceived use do secondary teachers have on applied behavior analysis? How is this perceived use impacted by demographic factors? Research Question 4: Does perceived knowledge, attitude, and use predict the other?

The field of behaviorism first seeks to understand the relationship between the occurrence of behavior and the environmental factors that influence that behavior; second, it seeks to develop individualized technology for improving socially significant behaviors (Cooper et al., 2020). In practice guided by ABA principles, it is not always possible for practitioners to view situations with existing data or to have access to variables of interest. ABA is considered applied research that is operationally defined as “a scientific approach for discovering environmental variables that reliably influence socially significant behavior and for developing a technology of behavior change that takes practical advantage of those discoveries” (Cooper et al., 2020, p. 2). However, in this study, applied research is not employed to discover environmental variables that influence socially significant behavior. Instead, references to ABA are under the domain of classroom practices guided by ABA, which is operationally defined as the design, implementation, and evaluation of behavior-change programs to improve the lives of participants as a result of changes in their behaviors (Cooper et al., 2020).

This chapter presents information regarding the methods used in the study, the selection of subjects, data-collection techniques, instrument development, and content validity.

Research Design

This study employed two forms of nonexperimental research design: survey and correlational research design. First, a quantitative survey (questionnaire) was employed to collect data from a sample using web-based technology. A correlational and cross-sectional survey design was used for data collection (Creswell, 2014). This method was utilized in this study because of its ability to sample a large geographic area at a low cost and within a shorter time frame, and because it allows for ease of data organization (Bartlett et al., 2001; Cook & Cook, 2016; Fowler, 2009; Gall et al., 2007; Saleh & Bista, 2017).

The subject matter presented in the literature review has been relatively under-researched; thus, a descriptive survey design was employed in this study to fill this research gap. Descriptive research provides important information from the target population that can be used to assess reliably the state of affairs in public schools, develop a theory, or suggest areas for future research. It must be noted that a descriptive survey design without additional research is unable to determine how variables relate to each other, and further research may be needed to compare some variables discovered after the data are analyzed (Cook & Cook, 2016; Creswell & Creswell, 2017; Mertens, 2014; Rumrill et al., 2011).

The methods used in this study also fall under the category of correlational research design. Correlational research is non-experimental in nature and allows the researcher to measure and determine the extent to which factors under investigation covary (Creswell & Creswell, 2017). Martella et al. (2013) identify three main attributes to correlational research: hypothesis, grouping, and data. First, since there is no prior research conducted on secondary teachers' self-

reported or perceived knowledge, use, or attitude of ABA in classroom use. Since this study was exploratory, the researcher made no a priori hypotheses concerning how variables in this study would be interrelated.

In this study, the term “perceived” was used because participants self-reported their “perceived” use, knowledge, and attitude toward ABA. Second, grouping, or group membership, in a correlational study requires an operational definition of membership (Creswell & Creswell, 2017; Martella et al., 2013). Participants for this study are defined in detail in the section below but can be generalized as in-service secondary teachers. Finally, though a wide range of tools and tests can be utilized in correlational research, the researcher created a survey questionnaire for this specialized topic (see Appendix C). The survey responses were the main source of data collection, and analysis for this study are described further in the sections below.

Participants

Regarding the survey participants, the target population consisted of teachers (general or special education) who were listed as current teachers in a secondary setting (grades 6–12) for at least one class period per day in a public, private, or charter school. According to the NCES, in the fall of 2017, there were 3.2 million teachers in the United States (NCES, 2019). To answer the research questions, a sufficient sample size was needed for analysis. Though there is no singular minimum sample size recommended for survey or correlational studies, the study sample had to encompass all three tests used in analysis to produce reliable results.

Participant Enrollment Procedures

Permission to conduct this study was obtained from the Internal Review Board (IRB) of the University of Oklahoma, Norman, Oklahoma. Multiple strategies were utilized to recruit participants for the study, guided by the suggestions of Saleh and Bista (2017), who

examined factors impacting online survey response rates in education research.

A snowball and referral methodology comprising three parts was utilized (Levine, 2014). Initially, an invitation was emailed to individuals within the researcher's personal networks, requesting that they forward the message to other people who might be interested (Saleh & Bista, 2017). Second, the researcher utilized social media, particularly Facebook and Instagram posts, with an invitation and a link to the survey. Following this, the researcher emailed a personalized invitation greeting, and the URL to access the study survey was sent to all secondary-certified teachers listed on the Oklahoma Teacher Registry accessed by the State of Oklahoma and all secondary staff who were members of the Texas Education Association (TEA). Moreover, all participants were encouraged to share the URL with all their networks potentially including secondary teachers. The researcher expected that the encouragement to share the survey would create a snowball sampling effect where the original research participants would recruit other participants to complete the survey, leading to an increased number of participants (Levine, 2014). Data were collected for six weeks and included three reminder requests to complete the survey and/or forward the URL to an educational professional, with one request sent every two weeks for the duration of the collection, as recommended by Saleh and Bista (2017), to gain optimum participation.

This strategy led to the participation of a large number of teachers with a wide range of demographic information and allowed for the assumption that participants were knowledgeable of best practices in education and a range of knowledge in practice guided by ABA. It also allowed for a broad view of professional development needs in the area of ABA in secondary schools and related specific needs of the participating teachers.

The procedures for protecting the rights and human welfare of human subjects involved

in the study were submitted for approval to the Institutional Review Board of the University of Oklahoma.

Response Rate

The Qualtrics online survey management system was used to administer the survey. A total of 152,421 emails were sent with 1,118 surveys opened by a participant, to which 991 respondents provided at least one response (63%), an acceptable response for online survey completion (Nulty, 2008). A total of 31 surveys were completed after following the link shared over the researchers' personal Facebook page, and 252 surveys were completed through an anonymous link shared through social media outlets. A total of 991 respondents completed the survey. The responses provided a snapshot of the secondary teacher population in primarily southwestern and midwestern states in the United States public school setting, although not all survey respondents fit that demographic description.

Of the 991 respondents, 932 agreed to participate in this study, and the remaining 55 respondents were discarded from the data set. The data of respondents who chose "I do not want to participate" but completed the survey were not analyzed. From the 931 usable responses, 58 participants did not answer the first 3 demographics questions (total years of teaching experience, current teaching setting, and secondary school settings they had experience teaching in) and were removed from the data set, leaving 872 responses. Out of the 872 responses, 71 responded that they were not currently teaching in a secondary school setting and were removed from data set. In addition, 63 respondents who did not answer this question were removed, leaving 795 survey responses. Block 5 of the survey began with the attitude questions using Likert scales, and 169 participants stopped at that section and did not complete the survey. These participants were removed from the data set, resulting in 626 valid responses. Of these, 539

completed the questionnaire and were used in the analysis; 87 incomplete surveys were removed from the data set. The final number of respondents used in the analysis was 539.

Missing Data

Measured Respondents. In survey-based research work, it is usually not possible to receive complete data, as some questionnaires may not be returned or fully completed (Cooper et al., 2006). Missing data are values left empty by the respondents while filling out questionnaires (Hair Jr. et al., 2006), which creates a problem for data analysis, potentially resulting in failure to evaluate critical facts (Cordeiro et al., 2010; Creswell & Creswell, 2017; Hair Jr. et al., 2006; Kang, 2013).

Missing data handling is a technical task during data analysis, with the options of either assigning a suitable value for the missing data or deleting the record with missing data. There is a four-step process for handling missing data: (1) determine whether the type of missing data is ignorable, (2) determine the extent of missing data, (3) identify whether the missing data are categorized as missing completely at random (MCAR) or missing at random (MAR), and (4) select the imputation method based on the randomness of the missing data (Hair Jr. et al., 2006).

As this study was quantitative and used a close-ended questionnaire for all variables, there were no ignorable missing data within the 539 respondents used for analyses. Therefore, the percentage of missing data values for each item was determined. If the missing data accounted for less than 10% of a particular item, this was considered acceptable. Subsequently, the randomness of the missing data was determined.

The maximum amount of missing data was 1.5%, which was considered acceptable. Three types of randomness patterns were considered: MCAR, missing not at random (MNAR), and MAR (Kang, 2013). Finally, the imputation for treating missing values was considered.

As the amount of missing values was minimal, any imputation method to identify missing data patterns was appropriate (Creswell & Creswell, 2017; Hair Jr. et al., 2006).

Expectation maximization (EM) techniques, which are considered effective, were used to manage missing data. This helps produce a new data set through the maximum likelihood method, with missing values replaced with predicted values via the maximum likelihood algorithm (Dempster et al., 1977). While other techniques may cause estimation biases, EM controls the mean substitution and regression substitution. According to Little (1988), if the MCAR test has an insignificant p value ($p > 0.05$), the data are likely MCAR (Garson, 2015). Table 1 shows the statistical results of the MCAR test based on Little (1998), indicating that the data were MCAR and the test was insignificant.

Table 1

MCAR Test Results

Chi-Square	DF	Sig.
2492.129	2448	0.262

Instrument

No instrument currently exists that specifically assesses a respondent's professional background, training, knowledge of educational programming related to ABA, use of ABA strategies in the school setting, attitudes toward ABA in the school setting, and professional needs as they relate to ABA. Therefore, a survey instrument (questionnaire) was created to conduct this assessment. The researcher developed the survey instrument based on the existing literature and with a section of the questions replicating prior studies that was altered to fit the target participants of this study (Harlacher, 2016). The basis of this survey was modeled after the seminal Autism Survey, developed by Stone (1987), and its subsequent

iteration by Campbell et al. (1996). In addition, the questions selected for attitude, knowledge, and use were developed based on similar instruments used in previous studies with differing settings or participant demographics (Martin & Baldwin, 1993; Martin et al., 2007; McCormick, 2011; Musgrove, 1974; Randazzo, 2011; The Incredible Years, 2012). The format was adapted from surveys of two dissertations in which the authors developed questionnaires from similar existing surveys (McCormick, 2001; Randazzo, 2011). These dissertations were also drawn upon for survey questions and structure.

Participants rated how much they agreed with statements describing classroom-management techniques based on the principles of behavior analysis using a 5-point Likert scale. Questions measuring the usefulness and frequency of use of specific classroom-management techniques were developed based on the Teacher Classroom Management Strategies Questionnaire produced by The Incredible Years (2012). First, participants rated how often they used the seven ABA-based classroom-management techniques on a 5-point scale from “very often” to “never.” Next, participants rated how useful they found each technique for managing their classroom on a 5-point scale from “extremely useful” to “not at all useful” as well as the technique’s reliability (see Appendix X).

Questionnaire Items

For the purpose of this study, the questionnaire was composed of the following major themes: (1) demographics, (2) attitudes toward ABA, (3) use of ABA strategies in the school setting, and (4) knowledge of educational programming related to ABA. With the exception of the questions eliciting demographic information, the survey utilized a Likert scale with five response options, with the response relevant to the question being asked. To assess the self-reported knowledge of each teacher, participants were asked to check a box indicating how

knowledgeable they are on the listed strategy, coded 1 (*not at all knowledgeable*) to 5 (*very knowledgeable*). To assess the self-reported usage of the strategy, the teacher indicated how often they used each strategy, coded 1 (*never use*) to 5 (*very often use*). There were no short descriptive answers or fill-in-the-blank questions; this was based on the recommendation to craft a survey that was short and concise for higher response rates (Saleh & Bista, 2017). It was estimated that the teachers would need approximately 11 to 20 minutes to complete the survey. A complete survey is provided in the Appendix.

Professional Background and Training. The first section of the survey consisted of four blocks that requested participants' demographic information. This section included a subsection of questions related to whether or not the participants had received a course in behavior management based on Blum's (1994) study. Blum (1994) indicated that many teachers do not take a behavior-management course during their pre-service learning. Further, Randazzo (2011) found a significant correlation indicating that teachers who had not taken a specific behavior-management course were more likely not to use instructional techniques associated with ABA.

Gender and Ethnicity. Gender and ethnicity were not included in the demographic section of the survey. Saperstein and Westbrook (2015) urged future researchers to think critically about requesting gender information in surveys.

A hyper-gendered world of "males" and "females," "brothers" and "sisters, and "husbands" and "wives" shapes what we can see in survey data. If not altered, surveys will continue to reproduce statistical representations that erase important dimensions of variation and likely limit understanding of the processes that perpetuate social inequality. (Saperstein & Westbrook, 2015).

Several institutional review boards suggested that asking for someone's gender identity in a survey may not justify collecting the data in the first place (Utah IRB, 2021). By eliminating the need to answer such questions as gender/sex/sexual orientation, participants may be more comfortable continuing the questionnaire (Utah IRB, 2021). Therefore, gender and ethnicity information were considered irrelevant to the data analysis, and omission from the survey was considered to follow best practices for the most inclusive version of the questionnaire.

Experience Demographics Items. The first item in this section required participants to choose a range of total years they had been teaching. The second item asked the participants whether they were currently teaching in a secondary school setting (grades 6-12) as a "yes" or "no" response. The third item required participants to check a box indicating what type of population they primarily taught, with responses including "general education," "special education," and "other" with a blank space to specify any other secondary settings in which they had secondary teacher experience. The fourth item asked participants to indicate their current teaching certificates. The fifth item asked the geographic setting of the participants' current school, with answers including "rural," "midsize," "suburban," "urban," and "other" with a blank to provide more information. The sixth item asked participants to check all the topics in which they received training or professional development in their current district. The seventh item asked participants if their current school implemented a tiered system of support, with "yes," "unsure," and "no" as possible answers. The eighth item asked the participants if they ever taught in a school that implemented a tiered system of support, with "yes," "unsure," and "no" as possible answers.

Education Demographics Items. The second block consisted of items regarding education demographics. For the first item in this section, participants were required to check all boxes that applied regarding academic degree(s) that they held, including bachelor's, master's, doctorate, and/or other. A blank space was provided to specify any additional degrees. The second item asked participants to indicate whether they took a course in their graduate or undergraduate education that primarily focused on behavior management, with "yes," "no," and "other" as options and a blank to fill in more information. The third item asked participants to check all of the topics they have taken coursework in as part of their bachelor's degree from this following list: (a) ABA, (b) autism spectrum disorder, (c) response to intervention, (d) behavior management intervention, (e) multi-tiered systems of support, (f) direct instruction, (g) discussed some of these in other courses but not specific coursework, and (h) none of the above. The fourth item asked participants if they were currently enrolled in a graduate program or if they currently had a degree pending. The fifth item asked participants to check all of the topics they had taken coursework in as a part of a master's or doctoral degree from the following list: (a) applied behavior analysis, (b) autism spectrum disorder, (c) response to intervention, (d) behavior management intervention, (e) multi-tiered systems of support, (f) direct instruction, (g) discussed some of these in other courses but not specific coursework, and (h) none of the above. The sixth item asked participants to check all of the topics they had taken coursework in that was not part of a pending or obtained degree from the following list: (a) applied behavior analysis, (b) autism spectrum disorder, (c) response to intervention, (d) behavior management intervention, (e) multi-tiered systems of support, (f) direct instruction, (g) discussed some of these in other courses but not specific coursework, and (h) none of the above.

Experience with ABA Items. The third block of the questionnaire asked specific questions regarding the participants' relationship with ABA, including a self-report rating of the following questions: (a) How knowledgeable do you rate yourself in the area of applied behavior analysis?" (b) "During your teaching experience have you worked with a student who received applied behavior analysis (ABA) as an intervention for autism spectrum disorder inside or outside the classroom? and (c) Do you know anyone personally who participates in applied behavior analysis (ABA) as an intervention for autism spectrum disorder either as a recipient or a therapist? Past research has found that a personal relationship with a person receiving ABA services as an intervention for ASD significantly impacts their attitude of ABA as a strategy or intervention (McCormick, 2011; Randazzo, 2011)

Attitude, Use, and Knowledge of ABA. The second section of the survey consisted of three blocks that examined participants' attitudes, use, and knowledge. Participants rated how much they agreed with statements describing classroom-management techniques based on the principles of behavior analysis using a 5-point Likert scale. Questions measuring the usefulness and frequency of use of specific classroom-management techniques were developed based on the Teacher Classroom Management Strategies Questionnaire produced by The Incredible Years (2012). First, participants rated how often they used the seven ABA-based classroom-management techniques on a 5-point scale from "very often" to "never." Next, participants rated how useful they found each technique for managing their classroom on a 5-point scale from "extremely useful" to "not at all useful," as well as the techniques' reliability.

Attitudes Toward ABA in the School Setting. The fifth section of the survey assessed teachers' attitudes toward ABA strategies used in the school setting. Attitude theorists have stated that attitudes are multidimensional, can form in many ways, and are subject to change

based on individual lived-experiences, contextual settings, education, and time (Albarracin et al., 2005; Alzen, 2005). To measure attitudes toward the use of ABA in the school setting, the survey included eight items adapted from McCormick's (2011) dissertation. Additionally, items were obtained from Baker (2005) and Kaff et al. (2007) regarding teachers' feelings and beliefs about the techniques, strategies, and interventions of ABA. The participants were asked to evaluate the listed statements on a 5-point Likert scale.

Use Regarding ABA Strategies in the School Setting. The fourth section asked teachers to rate their use of the listed ABA strategies in the school setting. To measure the participants' self-reported frequency of use of ABA, the survey included eight items adapted from McCormick (2011), regarding how often the teachers use empirically demonstrated techniques, strategies, procedures, and interventions of ABA identified by Callahan et al. (2008) and Callahan et al. (2010). The teachers evaluated the statements on a 5-point Likert scale. Responses were coded as 1 ("very frequently use") to 5 ("not used at all").

Knowledge of Educational Strategies Related to ABA. The third section of the survey comprised items to assess participants' self-reported knowledge of each ABA strategy. Response options were coded from 1 ("not at all") to 5 ("a great deal").

Data Analysis

Survey data obtained from the online platform Qualtrics (Qualtrics, Inc., 2010) were coded and uploaded to SPSS Statistics (28) software. Descriptive statistics were utilized to examine the frequencies, patterns, and mean scores of categorical survey items. To examine factors related to the research questions, a linear regression model was used to predict a categorical or outcome variable from a set of predictor variables (Peng et al., 2002) and assist the researcher in examining participants' (1) knowledge of educational programming related to

ABA, (2) use of ABA strategies in the school setting, and (3) attitudes toward ABA in the school setting. Each question was coded with a quantitative value and entered into SPSS. Prior to any analysis, all data were checked for accuracy by computing the descriptive statistics for each item and examining the minimum and maximum variables. The responses for negatively phrased items were also reverse coded before analysis.

This study aimed to ascertain whether there was a relationship between secondary teachers' knowledge of ABA and attitudes toward ABA and the use of ABA in the classroom. Three quantitative tests were considered to answer the research questions: analysis of variance (ANOVA), Pearson's correlation, and general linear regression. First, a series of one-way ANOVAs was utilized to analyze demographic differences, knowledge differences, attitude differences, and use differences in each category. ANOVAs are an appropriate test when the purpose is to determine if there are significant differences between the means of independent variables (Rutherford, 2011). Post-hoc Tukey's tests were conducted for any ANOVAs that showed significant results ($p < 0.05$). Tukey's post-hoc is a commonly used test for assessing all pairwise comparisons in a one-way ANOVA when the assumption of homogeneity of variances is not violated (Kirk, 2013; Westfall et al., 2011). Two-way ANOVA was used when there were two categorical variables that are treated as predictors of a continuous outcome variable (Creswell & Creswell, 2017; Rutherford, 2011). Next, a Pearson's correlation (r) was considered to determine the relationship between two variables and the degree to which the variables were related (Allen, 2017); however, this step was not used in the final analysis. Finally, a simple linear regression was used in this study to determine the linear relationship between the variables and predict values of the dependent variables based on different values of the independent variable (Creswell & Creswell, 2017). For this study, the researcher is exploring whether there

are relationships between demographic variables and the factors of perceived knowledge, attitude, and use by secondary classroom teachers.

Chapter 4: Results

This study investigated secondary general and special education teachers' levels of the following: Research Question 1: What level of perceived knowledge do secondary teachers have on applied behavior analysis? How is this perceived knowledge impacted by demographic factors? Research Question 2: What level of perceived attitude do secondary teachers have on applied behavior analysis? How is this perceived attitude impacted by demographic factors? Research Question 3: What level of perceived use do secondary teachers have on applied behavior analysis? How is this perceived use impacted by demographic factors? Research Question 4: Does perceived knowledge, attitude, and use predict the other? The investigation looked at the teachers' self-reported responses to the survey instrument to produce their perceived knowledge, attitudes, and use of ABA strategies and interventions in the classroom. A total of 539 educators completed the survey instrument; their results are described below.

Preliminary Analyses

Demographics

Location

Practicing public school teachers in the mid-south-central portion of the continental United States were invited to participate in the study. The link for the survey was shared via social media, targeting United States secondary teachers. To keep the survey anonymous, participants' locations were not tracked; however, 60% (707) of all returned surveys were from the email list compiled with public school teachers in the mid-south-central portion of the continental United States.

Years of Teaching

Out of 539 respondents, 79 (14.7%) had 1-4 years of teaching experience, 137 (25.4%) had 5- 10 years of teaching experience, and 323 (59.9%) had over 10 years of experience in the field of teaching.

Type of Setting

A total of 371 respondents (59.6%) were experienced in general education settings, 187 (30.1%) were experienced in special education settings, and 64 (10.3%) had experience in other secondary settings.

Geographic Setting of Current School

A total of 56 respondents (10.4%) taught in a midsize setting, 135 (25.0%) taught in a rural setting, 189 (35.1%) were in a suburban setting, 145 (26.9%) were in an urban setting, and 14 (2.6%) taught in other geographic settings.

Prior Training or Professional Development as a Teacher

A total of 102 respondents (7.9%) selected ABA, 217 (16.8%) selected autism spectrum disorder, 313 (24.3%) selected response to intervention, 308 (23.9%) selected behavior management intervention, 152 (11.8%) selected multitiered system of support, and 197 (15.3%) selected direct instruction. In response to the implementation of a tiered system of support in the current school, 360 respondents (66.8%) answered “yes,” 72 (13.4%) answered “no,” while 107 (19.9%) were unsure.

Highest Degree Completed

The majority of the respondents ($n = 289$, 53.6%) held a master’s degree, 225 (41.7%) held a bachelor's degree, and 22 (4.1%) held a doctoral degree. The majority of respondents ($n = 359$, 66.6%), answered “no,” 21 (3.9%) answered “other,” and 159 (30.3%) answered “yes” regarding participating in coursework related to behavior management. In addition, 91

respondents (17.1%) answered “yes” regarding being currently enrolled in a graduate program or having a degree pending, 436 (80.9%) answered “no,” while 11 (2.0%) answered “other.”

Coursework

Coursework As Part of a Bachelor’s Degree. A total of 84 respondents (14.3%) selected ABA, 91 (15.5%) selected autism spectrum disorder, 97 (16.5%) selected response to intervention, 134 (22.8%) selected behavior management intervention, 73 (12.4%) selected multitiered system of support, and 108 (18.4%) selected direct instruction.

Coursework As Part of a Pending or Completed Master’s or Doctoral Degree. A total of 57 respondents (12.3%) selected ABA, 82 (17.7%) selected autism spectrum disorder, 86 (18.5%) selected response to intervention, 98 (21.1%) selected behavior management intervention, 65 (14.0%) selected multitiered system of support, and 76 (16.4%) selected direct instruction.

Table 2

Demographics of Survey Participants

Characteristic	Frequency	
	<i>n</i>	%
Teaching experiences		14.7
1-4 years		
5-10 years	137	25.4
10+ years	323	59.9
Type of secondary setting you have experience teaching in		
General education	371	59.6
Special education	187	30.1
Other	64	10.3
Geographic setting of your current school		
Midsize	56	10.4
Rural	135	25.0
Suburban	189	35.1
Urban	145	26.9
Other	14	2.6

Topics that you have had training or professional development in as a teacher in your current district		
Applied behavior analysis	102	7.9
Autism spectrum disorder	217	16.8
Response to intervention	313	24.3
Behavior management intervention	308	23.9
Multitiered systems of support	152	11.8
Direct instruction	197	15.3
Does your current school implement a tiered system of support?		
Yes	360	66.8
No	72	13.4
Unsure	107	19.9
Highest degree completed		
Bachelor's degree	225	41.7
Master's degree	289	53.6
Doctoral degree	22	4.1
Other	3	.6
Participation in behavior management course		
Yes	159	30.3
No	359	66.6
Other	21	3.9
Currently enrolled in a graduate program or have a degree pending		
Yes	91	17.1
No	436	80.9
Other	11	2.0
Topics that you have taken coursework in as part of a pending or completed bachelor's		
Applied behavior analysis	84	14.3
Autism spectrum disorder	91	15.5
Response to intervention	97	16.5
Behavior management intervention	134	22.8
Multitiered systems of support	73	12.4
Direct instruction	108	18.4
Topics that you have taken coursework in as a part of a pending or completed master's or doctoral degree		
Applied behavior analysis	57	12.3
Autism spectrum disorder	82	17.7
Response to intervention	86	18.5
Behavior management intervention	98	21.1
Multitiered system of support	65	14.0
Direct instruction	76	16.4

Preliminary Factor and Reliability Analyses

A conceptual framework was developed based on the literature to examine the responses from 539 secondary classroom teachers to verify that the items measured what they purported to assess. Each of the three variables in this study was subjected to Cronbach's alpha reliability tests to check the internal consistency and reliability of each question in the data set. Cronbach's alpha was used for multiple scale items to determine whether the items included converged. Following Gliem and Gliem (2003), a value above 0.7 was considered acceptable and reliable. To ensure that all the designed questions were reliable, three variables were used: perceived knowledge, perceived attitudes, and perceived use, with the latter two tested separately. The following table shows the reliability of all scales was above 0.70 (Table 3), indicating that the scales had acceptable internal consistency.

Table 3

Test of Reliability

Scale	Cronbach's alpha	Number of items
Perceived knowledge	0.781	16
Perceived attitudes	0.824	20
Perceived use	0.814	16

Research Question 1: What is the level of perceived knowledge of secondary teachers regarding ABA? How is this perceived knowledge impacted by demographic factors?

The results of descriptive statistics analyses indicated that the mean value of the perceived knowledge of teaching staff regarding ABA was 3.4456 (See Table 4). Perceived knowledge was measured using a five-point Likert scale; therefore, the teachers surveyed indicated a moderate-to-significant perceived knowledge regarding ABA.

Table 4

Mean Value of Perceived Knowledge

Mean	SD
------	----

Perceived knowledge	3.4456	0.51199
---------------------	--------	---------

Total Years of Teaching Experience

The impact of teaching experience on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent and *total years of teaching experience* as the independent variable. As can be seen in Table 5, results from this test indicate there is no statistically significant difference between the mean perceived knowledge for total years of teaching experience ($p = 0.278$).

Table 5

ANOVA 1.1

Knowledge	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.672	2	.336	1.283	.278
Within Groups	140.357	536	.262		
Total	141.029	538			

Secondary Teaching Setting

The impact of secondary teaching setting on teacher knowledge of ABA was assessed through a two-way ANOVA model in which *knowledge* served as the dependent variable and *type of secondary setting you have experience teaching in GEN/SPL* as the independent variable. As can be seen in Table 6, the p value for *General Education Setting* is 0.070, which is greater than 0.05, and the p value is 0.000 for *Special Education Setting*, which is less than 0.05. This indicates that at a 0.05 level of significance, the null hypothesis can be rejected for *Special Education Setting* but not for *General Education Setting*. Thus, it can be concluded that there exists significant difference between the mean perceived knowledge for type of secondary setting teachers have experience teaching within.

Table 6*ANOVA 1.2*

Dependent Variable: Knowledge

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	20.229 ^a	3	6.743	29.863	.000
Intercept	3303.444	1	3303.444	14630.281	.000
Q1.3_whatsetting_answer_General_Education_Setting	.746	1	.746	3.303	.070
Q1.3whatsetting_answer_Special_Education_Setting	7.239	1	7.239	32.061	.000
Q1.3_whatsetting_answer_Other	.020	1	.020	.088	.767
Error	120.800	535	.226		
Total	6539.984	539			
Corrected Total	141.029	538			

a. R Squared = .143 (Adjusted R Squared = .139)

Geographic Setting of Current School

The impact of *geographic setting* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent variable and *geographic setting of teachers' current school* as the independent variable. As can be seen in Table 7, results from this test indicate there is no statistically significant difference between the mean perceived knowledge for *geographic setting* ($p = 0.139$). Thus, teaching staff from different geographical locations did not differ in terms of perceived knowledge regarding ABA, as all the significance values were greater than 0.05.

Table 7*ANOVA 1.3*

Knowledge	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.818	4	.455	1.744	.139
Within Groups	139.211	534	.261		
Total	141.029	538			

Does your current school implement a tiered system of support?

The impact of *current school implement a tiered system of support* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent and *current school implement a tiered system of support* as the independent variable. As can be seen in Table 8, results from this test indicate there is a statistically significant difference between the mean perceived knowledge for school implementation of a tiered system of support ($p = 0.000$). Thus, it can be concluded that there exists significant difference between the mean perceived knowledge for current school implement a tiered system of support.

Table 8

ANOVA 1.4

Knowledge	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.573	2	2.787	11.037	.000
Within Groups	134.823	534	.252		
Total	140.396	536			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which category pairs for *current school implement a tiered system of support* show differences between the mean perceived *knowledge* (see Table 9). The Tukey HSD test shows that teachers whose current school implement a tiered system of support have higher perceptions of their ABA knowledge over teachers whose schools do not implement a tiered system of support ($M = .167$, p value = 0.027) or over teachers who are unsure if their school implements a tiered system of support ($M = .241$, p value = 0.000). As those p values are less than 0.05, it can be concluded that there exists a significant mean difference of perceived knowledge between those pairs.

Table 9

Tukey's HSD 1.4

Dependent Variable: Knowledge
Tukey HSD

(I) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	(J) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Unsure	.07383	.07659	.600	-.1062	.2538
	Yes	-.16738*	.06490	.027	-.3199	-.0149
Unsure	No	-.07383	.07659	.600	-.2538	.1062
	Yes	-.24121*	.05536	.000	-.3713	-.1111
Yes	No	.16738*	.06490	.027	.0149	.3199
	Unsure	.24121*	.05536	.000	.1111	.3713

*. The mean difference is significant at the 0.05 level.

Highest Degree Completed

The impact of *highest degree completed* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent variable and *highest degree completed* as the independent variable. As can be seen in Table 10, result indicates no significant mean differences.

Table 10

ANOVA 1.5

Knowledge	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.422	3	.474	1.816	.143
Within Groups	139.607	535	.261		
Total	141.029	538			

Coursework

Coursework Focusing Primarily on Behavior Management During the Bachelor's Degree. The impact of *participation in behavior management course* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent variable and *participation in behavior management course* as the independent variable. As can be seen in Table 11, results from this test indicate there is a statistically significant difference between the mean perceived knowledge for highest degree completed ($p =$

.004). Thus, it can be concluded that there exists significant difference between the mean perceived knowledge and *participation in behavior management course*.

Table 11

ANOVA 1.6

Knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.899	2	1.450	5.646	.004
Within Groups	137.093	534	.257		
Total	139.993	536			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which category pairs for *participation in behavior management course* show differences between the mean perceived *knowledge* (see Table 12). The Tukey HSD test shows that teachers who participated in behavior management courses have higher perceptions of their ABA knowledge over teachers who did not participate in behavior management course ($M = .154$, p value = 0.004). Interestingly, teachers who attended a behavior management course did not have significant differences in their perception of ABA knowledge over teachers who selected "other" as an option (p value is 0.124).

Table 12

Tukey HSD 1.6

Dependent Variable: Knowledge

Tukey HSD

(I) In your bachelor's degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	(J) In your bachelor's degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Other	.07626	.11376	.781	-.1911	.3436
	Yes	-.15408*	.04848	.004	-.2680	-.0401
Other	No	-.07626	.11376	.781	-.3436	.1911
	Yes	-.23034	.11773	.124	-.5070	.0464
Yes	No	.15408*	.04848	.004	.0401	.2680
	Other	.23034	.11773	.124	-.0464	.5070

*. The mean difference is significant at the 0.05 level.

Research Question 2: What is the level of perceived attitude of secondary teachers toward ABA? How is this perceived attitude impacted by demographic factors? What is the level of perceived attitude of secondary teachers toward ABA?

The results of descriptive statistics analyses indicated that the mean value of the *perceived attitude of teaching staff regarding ABA* was 3.367 (see Table 13). *Perceived attitude* was measured using a five-point Likert scale; therefore, the teachers surveyed indicated a moderate-to-significant perceived knowledge regarding ABA.

Table 13

Mean Value of Perceived Attitude

	Mean	SD
Perceived knowledge	3.367	0.4504

Total Years of Teaching Experience

The impact of *attitude* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *attitude* served as the dependent variable and *total years of teaching experience* as the independent variable. As can be seen in Table 14, results from this test indicate there is no statistically significant difference between the mean perceived attitude for total years teaching ($p = 0.$). Thus, total years of teaching was not a determining factor in teacher attitude on ABA.

Table 14

ANOVA 2.1

Attitude	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.282	2	.141	.693	.500
Within Groups	108.853	536	.203		

Total	109.135	538
-------	---------	-----

Type of Teaching Setting

The impact of *secondary teaching setting* on teacher attitude of ABA was assessed through a two-way ANOVA model in which *attitude* served as the dependent variable and *type of secondary setting you have experience teaching in GEN/SPL* as the independent variables. As can be seen in Table 15, the *p* value for *General Education Setting* is 0.215, which is greater than 0.05, and the *p* value is 0.000 for *Special Education Setting*, which is less than 0.05. This indicates that, at 0.05 level of significance, the null hypothesis can be rejected for *Special Education Setting* but not for *General Education Setting*. Thus, it can be concluded that there exists significant difference between the mean perceived knowledge for type of secondary setting teachers have experience teaching within.

Table 15

ANOVA 2.2

Dependent Variable: Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7.545 ^a	3	2.515	13.245	.000
Intercept	3046.926	1	3046.926	16046.029	.000
Q1.3_whatsetting_answer_General_Education_Setting	.293	1	.293	1.543	.215
Q1.3whatsetting_answer_Special_Education_Setting	5.692	1	5.692	29.976	.000
Q1.3_whatsetting_answer_Other	.156	1	.156	.823	.365
Error	101.589	535	.190		
Total	6218.513	539			
Corrected Total	109.135	538			

a. R Squared = .069 (Adjusted R Squared = .064)

Geographic Setting of Current School

The impact of *attitude* on teacher knowledge of ABA was assessed through a one-way ANOVA model in which *attitude* served as the dependent variable and *geographic setting* as the

independent variable. As can be seen in Table 16, results from this test indicate there is no statistically significant difference between the mean perceived attitude for total years teaching ($p = 0.417$). Thus, geographic setting was not a determining factor in teacher attitude on ABA.

Table 16

ANOVA 2.3

Attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.511	4	.128	.628	.643
Within Groups	108.624	534	.203		
Total	109.135	538			

Does your current school implement a tiered system of support?

The impact of *current school implement a tiered system of support* on teacher attitude of ABA was assessed through a one-way ANOVA model in which *attitude* served as the dependent variable and *current school implement a tiered system of support* as the independent variable. As can be seen in Table 17, results from this test indicate there is a statistically significant difference between the mean perceived attitude for teachers whose school implemented a tiered support system ($p = 0.003$).

Table 17

ANOVA 2.4

Attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.306	2	1.153	5.777	.003
Within Groups	106.559	534	.200		
Total	108.865	536			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which categories *current school implement a tiered system of support* show differences between the mean perceived *attitude* (see Table 18). The Tukey HSD test shows that teachers whose schools

implemented a tiered support system have higher perceptions of their ABA attitude over teachers whose schools implemented a tiered support system ($M = .142, p \text{ value} = 0.037$) and over teachers who were unsure if their schools implemented a tiered support system ($M = .137, p = 0.021$).

Table 18

Tukey HSD 2.4

Dependent Variable: Attitude

Tukey HSD

(I) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	(J) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Unsure	-.00535	.06809	.997	-.1654	.1547
	Yes	-.14216*	.05770	.037	-.2778	-.0066
Unsure	No	.00535	.06809	.997	-.1547	.1654
	Yes	-.13682*	.04922	.016	-.2525	-.0211
Yes	No	.14216*	.05770	.037	.0066	.2778
	Unsure	.13682*	.04922	.016	.0211	.2525

*. The mean difference is significant at the 0.05 level.

Highest Degree Completed

The impact of *highest degree completed* on teacher attitude of ABA was assessed through a one-way ANOVA model in which *attitude* served as the dependent variable and *highest degree completed* as the independent variable. As can be seen in Table 19, results from this test indicate there is a statistically significant difference between the mean perceived attitude for teachers based on their level of education ($p = 0.024$).

Table 19

ANOVA 2.5

Attitude	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.915	3	.638	3.185	.024
Within Groups	107.220	535	.200		
Total	109.135	538			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which categories of *highest degree completed* show differences between the mean perceived *attitude* (see Table 20). The Tukey HSD test shows statistically significant results for the difference of perceived attitude between bachelor's degree and master's degree ($p = 0.012$). Thus, it can be concluded that *mean perceived attitude* is statistically significantly different for bachelor's degree and master's degree holders.

Table 20

Tukey's HSD 2.5

Dependent Variable: Attitude

Tukey HSD

(I) Highest Degree Completed: - Selected Choice	(J) Highest Degree Completed: - Selected Choice	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bachelor's Degree	Master's Degree	-.12266*	.03980	.012	-.2252	-.0201
	Doctoral Degree	-.08266	.10000	.842	-.3404	.1751
	Other	-.11978	.26018	.968	-.7903	.5507
Master's Degree	Bachelor's Degree	.12266*	.03980	.012	.0201	.2252
	Doctoral Degree	.04000	.09901	.978	-.2152	.2952
	Other	.00288	.25980	1.000	-.6667	.6724
Doctoral Degree	Bachelor's Degree	.08266	.10000	.842	-.1751	.3404
	Master's Degree	-.04000	.09901	.978	-.2952	.2152
	Other	-.03712	.27552	.999	-.7472	.6729
Other	Bachelor's Degree	.11978	.26018	.968	-.5507	.7903
	Master's Degree	-.00288	.25980	1.000	-.6724	.6667
	Doctoral Degree	.03712	.27552	.999	-.6729	.7472

*. The mean difference is significant at the 0.05 level.

Coursework

Coursework Focusing Primarily on Behavior Management During the Bachelor's Degree. The impact of *participation in behavior management courses* on teacher attitude of ABA was assessed through a one-way ANOVA model in which *attitude* served as the dependent variable and *participation in behavior management courses* as the independent variable. As can be seen in Table 21 results from this test indicate there is a statistically significant difference

between the mean perceived attitude for teachers who participated in behavior management courses ($p = 0.000$).

Table 21

ANOVA 2.6

Attitude						
	Sum of Squares	df	Mean Square	F	Sig.	
Between Groups	4.586	2	2.293	11.822	.000	
Within Groups	103.564	534	.194			
Total	108.150	536				

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which categories of *participation in behavior management courses* show differences between the mean perceived *attitude* (see Table 22). The Tukey's HSD test shows statistically significant results for the difference of perceived attitude between teachers who participated in behavior management courses over teachers who did not ($p = 0.000$) and over teachers who were unsure if they had participated in courses ($p = 0.011$). Thus, it can be concluded that *mean perceived attitude* is statistically significantly different for teachers who participated in behavior management courses.

Table 22

Tukey's HSD 2.6

Dependent Variable: Attitude

Tukey HSD

(I) In your bachelor's degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	(J) In your bachelor's degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Other	.18924	.09887	.136	-.0431	.4216
	Yes	-.17630*	.04214	.000	-.2753	-.0773
Other	No	-.18924	.09887	.136	-.4216	.0431
	Yes	-.36554*	.10233	.001	-.6060	-.1251
Yes	No	.17630*	.04214	.000	.0773	.2753
	Other	.36554*	.10233	.001	.1251	.6060

*. The mean difference is significant at the 0.05 level.

Research Question 3: What is the level of perceived use of secondary teachers regarding ABA? How is this perceived use impacted by demographic factors?

The results of descriptive statistics analyses indicated that the mean value of the perceived use of teaching staff regarding ABA was 2.8778. Perceived knowledge was measured using a five-point Likert scale; therefore, the teachers surveyed indicated a low perceived use of ABA in the classroom.

Table 23

Mean Value of Perceived Use

	Mean	SD
Perceived knowledge	2.8778	0.62907

Total Years of Teaching Experience

The impact of teaching experience on teacher use of ABA was assessed through a one-way ANOVA model in which *use* served as the dependent variable and total years of teaching experience as the independent variable. As can be seen in Table 24, results from this test indicate there is no statistically significant difference between the mean perceived knowledge for total years of teaching experience ($p = 0.572$).

Table 24

ANOVA 3.1

Use	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.443	2	.222	.559	.572
Within Groups	212.459	536	.396		
Total	212.902	538			

Table 25

Two-Way ANOVA 3.1

Dependent Variable: Use

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46.399 ^a	3	15.466	49.696	.000
Intercept	2352.347	1	2352.347	7558.471	.000
Q1.3_whatsetting_answer_General_Education_Setting	2.394	1	2.394	7.691	.006
Q1.3whatsetting_answer_Special_Education_Setting	15.838	1	15.838	50.890	.000
Q1.3_whatsetting_answer_Other	.149	1	.149	.479	.489
Error	166.503	535	.311		
Total	4676.703	539			
Corrected Total	212.902	538			

a. R Squared = .218 (Adjusted R Squared = .214)

Geographic Setting of Current School

The impact of *geographic setting* on teacher *use* of ABA was assessed through a one-way ANOVA model in which *use* served as the dependent variable and *geographic setting of teachers' current school* as the independent variable. As can be seen in Table 26, results from this test indicate there is no statistically significant difference between the mean perceived use for *geographic setting* ($p = 0.165$). Thus, teaching staff from different geographical locations did not differ in terms of perceived use regarding ABA, as all the significance values were greater than 0.05.

Table 26

ANOVA 3.3

Use	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.571	4	.643	1.632	.165
Within Groups	210.331	534	.394		
Total	212.902	538			

Does your current school implement a tiered system of support?

The impact of *current school implement a tiered system of support* on teacher use of ABA was assessed through a one-way ANOVA model in which *use* served as the dependent

variable and *current school implement a tiered system of support* as the independent variable. As can be seen in Table 27, results from this test indicate there is a statistically significant difference between the mean perceived knowledge for school implementation of a tiered system of support ($p = 0.000$). Thus, it can be concluded that there exists significant difference between the mean perceived use for current school implement a tiered system of support.

Table 27

ANOVA 3.4

Use	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.424	2	3.212	8.318	.000
Within Groups	206.210	534	.386		
Total	212.634	536			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which category pairs for *current school implement a tiered system of support* show differences between the mean perceived *use* by Tukey's HSD multiple comparison test (see Table 28). The Tukey's HSD test shows that teachers whose school implemented a tiered system of support had higher perception of *use* of ABA than teachers whose schools did not implement a system of support ($p = 0.011$) and for teachers who were unsure if their schools had a system of support ($p = 0.232$). It can be concluded that there exists a significant mean difference of perceived use.

Table 28

Tukey's HSD 3.4

Dependent Variable: Use

Tukey HSD

(I) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	(J) Does your current school implement a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Unsure	.00024	.09472	1.000	-.2224	.2229
	Yes	-.23187*	.08026	.011	-.4205	-.0432
Unsure	No	-.00024	.09472	1.000	-.2229	.2224

	Yes					
Yes	No					
	Unsure					

*. The mean difference is significant at the 0.05 level.

Highest Degree Completed

The impact of *highest degree completed* on teacher use of ABA was assessed through a one-way ANOVA model in which *knowledge* served as the dependent variable and *highest degree completed* as the independent variable. As can be seen in Table 29, results from this test indicate there is a statistically significant difference between the mean perceived knowledge for highest degree completed ($p = 0.006$). Thus, it can be concluded that there exists significant difference between the mean perceived use for the highest degree completed.

Table 29

ANOVA 3.5

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.921	3	1.640	4.219	.006
Within Groups	207.981	535	.389		
Total	212.902	538			

The only p value which is less than 0.05 is for the difference of perceived use between bachelor's degree and master's degree, and that p value is 0.003. Thus, it can be concluded that mean perceived use is statistically significantly different for bachelor's degree and master's degree holders.

Table 30

Tukey's HSD 3.5

(I) Highest Degree Completed: - Selected Choice	(J) Highest Degree Completed: - Selected Choice	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Bachelor's Degree	Master's Degree	-.19539*	.05543	.003	-.3383	-.0525
	Doctoral Degree	-.13162	.13928	.781	-.4906	.2273

Master's Degree	Other	-.27556	.36237	.872	-1.2094	.6583
	Bachelor's Degree	.19539*	.05543	.003	.0525	.3383
	Doctoral Degree	.06378	.13790	.967	-.2916	.4192
Doctoral Degree	Other	-.08016	.36184	.996	-1.0127	.8523
	Bachelor's Degree	.13162	.13928	.781	-.2273	.4906
	Master's Degree	-.06378	.13790	.967	-.4192	.2916
Other	Other	-.14394	.38374	.982	-1.1329	.8450
	Bachelor's Degree	.27556	.36237	.872	-.6583	1.2094
	Master's Degree	.08016	.36184	.996	-.8523	1.0127
	Doctoral Degree	.14394	.38374	.982	-.8450	1.1329

*. The mean difference is significant at the 0.05 level.

Coursework

Coursework Focusing Primarily on Behavior Management During the Bachelor's Degree. The impact of *participation in behavior management course* on teacher use of ABA was assessed through a one-way ANOVA model in which *use* served as the dependent variable and *participation in behavior management course* as the independent variable. As can be seen in Table 31, results from this test indicate there is a statistically significant difference between the mean perceived knowledge for highest degree completed ($p = .000$). Thus, it can be concluded that there exists significant difference between the mean perceived knowledge and *participation in behavior management course*.

Table 31

ANOVA 3.6

Use	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.319	2	5.159	13.681	.000
Within Groups	201.390	534	.377		
Total	211.709	536			

Because there was statistical significance, a post-hoc Tukey's HSD test was conducted in which category pairs for *participation in behavior management course* show differences between the mean perceived *use* (see Table 32). The Tukey's HSD test shows that teachers who

participated in behavior management courses have higher perceptions of their ABA use over teachers who did not participate in behavior management courses. Interestingly, teachers who attended a behavior management course did not have significant differences in their perceptions of ABA knowledge over teachers who selected “other” as an option.

Table 32

Tukey’s HSD 3.6

Dependent Variable: Use

Tukey HSD

(I) In your bachelor’s degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	(J) In your bachelor’s degree coursework did you participate in a course that focused primarily on behavior management: - Selected Choice	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No	Other	.09779	.13787	.758	-.2262	.4218
	Yes	-.29654*	.05876	.000	-.4346	-.1584
Other	No	-.09779	.13787	.758	-.4218	.2262
	Yes	-.39434*	.14269	.016	-.7297	-.0590
Yes	No	.29654*	.05876	.000	.1584	.4346
	Other	.39434*	.14269	.016	.0590	.7297

*. The mean difference is significant at the 0.05 level.

Research Question 4: Does perceived knowledge, attitude, and use predict the other?

How does knowledge predict attitude and perceived use of applied behavior analysis?

Does perceived knowledge predict attitude?

To examine the impact of perceived knowledge on attitude, a linear regression analysis was conducted. The model summary results indicated that the value of R-square was 0.241, or 24.1%, indicating that knowledge caused 24.1% of variation in attitude. ANOVA confirmed that the results were statistically significant ($F [1,537] = 170.548$, $p = 0.000$). The coefficient beta ($\beta = 0.491$, $p < 0.05$) demonstrated that perceived knowledge positively and significantly predicted attitude. Therefore, with a one-unit increase in perceived knowledge, teachers’ attitudes positively changed by 0.491 units. The value of R Square is 0.241, which means that 24.1% of total variations of Knowledge can be explained by Attitude.

The linear regression analysis was applied to test the impact of two independent variables “perceived attitude” and “perceived use” of applied behavior analysis on the dependent variable “perceived knowledge” separately.

The adjusted R-square for perceived attitude is 0.241, or 24.1%, which means that perceived knowledge predict 24.1% variation in perceived attitude. The results are statistically significant at 0.05 confidence interval ($F [1, 537] = 170.548, p < 0.000$). The coefficient beta for perceived attitude is 0.491 ($p = 0.000$), which shows a statistically significant impact of perceived knowledge on perceived attitude. This indicates that, with a 1-unit increase in perceived knowledge, perceived attitude increases by 0.491 units.

Table 33

Linear Regression 4.1

Regression Analysis Summary of Perceived Knowledge Predicting Perceived Attitude

Variable	B	95% CI	β	t	p
Constant	1.88	[1.65, 2.11]		16.308	.000
Perceived attitude	.432	[.37, .48]	.491	13.059	.000

R-squared = 0.241 or 24.1%

Moreover, the value of adjusted R-square for perceived use is 44.4%, which indicates 44.4% variation in perceived use due to perceived knowledge. The results are statistically significant ($F [1, 537] = 428.341, p < 0.000$). The coefficient beta for perceived use is 0.666 ($p = 0.000$), which shows a statistically significant impact of perceived knowledge on perceived use. Perceived use increases by 0.666 units with 1-unit increase in perceived knowledge.

Table 34

Linear Regression 4.2

Regression Analysis summary of perceived knowledge predicting perceived use

Variable	B	95% CI	β	t	p
Constant	.58	[-.213, .328]		.419	.675
Perceived use	.82	[.741, .896]	.666	20.696	.000

R-squared= 0.444 or 44.4%

How does attitude predict knowledge and perceived use of applied behavior analysis? To examine the impact of perceived knowledge on use, linear regression was utilized. The value of R-square indicated that perceived knowledge caused a 44.4% variation in use. In addition, the ANOVA results were statistically significant ($F [1,537] = 428.341, p = 0.000$).

The value of the coefficient beta indicated that perceived knowledge positively and significantly predicted use ($\beta = 0.666, p = 0.000 < 0.05$). This indicated that with a 1-unit increase in perceived knowledge, use increased by 0.666 units. The value of R-Square is 0.444, which means that 44.4% of total variations of knowledge can be explained by use. The p value of regression coefficient of attitude is 0.000, which is less than 0.05. The regression coefficient of use is 0.542, which means that for per-unit-increment-of-use, the knowledge will be increased by 0.542 unit on average.

How does attitude predict knowledge and perceived use of applied behavior analysis? The linear regression analysis has been applied to test the impact of two independent variables, *perceived knowledge* and *perceived use* of applied behavior analysis on the dependent variable “perceived attitude,” separately. The adjusted R-square for perceived attitude is 0.241, or 24.1%, which means that perceived attitude predicts 24.1% variation in perceived knowledge. The results are statistically significant at 0.05 confidence interval ($F [1, 537] = 170.548, p < 0.000$). The coefficient beta for perceived knowledge is 0.491 ($p = 0.000$), which shows a statistically

significant impact of perceived attitude on perceived knowledge. It can be stated that a with 1-unit increase in perceived attitude, perceived knowledge increases by 0.491 units.

Table 35

Linear Regression 4.3

Regression Analysis summary of perceived attitude predicting perceived knowledge

Variable	B	95% CI	β	t	p
Constant	1.567	[1.281, 1.852]		10.792	.000
Perceived knowledge	.558	[.474, .642]	.491	13.059	.000

R-squared= 0.241 or 24.1%

Moreover, the value of adjusted R-square for perceived use is 17.8%, which indicates 17.8% variation in perceived use due to perceived attitude. The results are statistically significant ($F [1, 537] = 116.060, p < 0.000$). The coefficient beta for perceived use is 0.422 ($p = 0.000$), which shows a statistically significant impact of perceived attitude on perceived use. Perceived use increases by 0.422 units with 1-unit increase in perceived attitude.

Table 36

Linear Regression 4.4

Regression Analysis Summary of Perceived Attitude Predicting Perceived Use

Variable	B	95% CI	β	t	p
Constant	.895	[.531, 1.260]		4.823	.000
Perceived use	.589	[.481, .696]	.422	10.773	.000

R-squared = 0.178 or 17.8%

How does use predict knowledge and perceived attitude of applied behavior analysis? The linear regression analysis was applied to test the impact of two independent variables, *perceived*

use and *perceived attitude*, of applied behavior analysis on the dependent variable *perceived knowledge*, separately. The adjusted R-square for perceived knowledge is 0.444, or 44.4%, which means that perceived use predict 44.4% variation in perceived knowledge. The results are statistically significant at 0.05 confidence interval ($F [1, 537] = 428.341, p < 0.000$). The coefficient beta for perceived knowledge is 0.666 ($p = 0.000$), which shows a statistically significant impact of perceived use on perceived knowledge. It can be stated that with a 1-unit increase in perceived use, perceived knowledge increases by 0.666 units.

Table 37

Linear Regression 4.5

Regression Analysis Summary of Perceived Use Predicting Perceived Knowledge

Variable	B	95% CI	β	t	p
Constant	1.885	[1.734, 2.037]		24.434	.000
Perceived knowledge	.542	[.491, .594]	.666	20.696	.000

R-squared= 0.444 or 44.4%

Moreover, the value of adjusted R-square for perceived knowledge is 17.8%, which indicates 17.8% variation in perceived knowledge due to perceived use. The results are statistically significant ($F [1, 537] = 116.060, p < 0.000$). The coefficient beta for perceived knowledge is 0.422 ($p = 0.000$), which shows a statistically significant impact of perceived use on perceived knowledge. Perceived knowledge increases by 0.422 units with 1-unit increase in perceived use.

Table 38

Linear Regression 4.6

Regression Analysis Summary of Perceived Attitude Predicting Perceived Knowledge

Variable	B	95% CI	β	t	p
Constant	.895	[.531, 1.260]		4.823	.000
Perceived knowledge	.589	[.481, .696]	.422	10.773	.000

R-squared= 0.178 or 17.8%

Chapter 5: Discussion

The purpose of this study was to investigate secondary general and special education teachers' self-reported attributes, including (1) knowledge regarding ABA and the impact of demographic factors on knowledge, (2) attitude toward ABA and the impact of demographic factors on attitude, (3) and use of ABA and the impact of demographic factors on use, as well as to (4) determine whether self-reported knowledge, attitude, and use predicted the other. Unlike previous research, this study focused on secondary teachers to extend the current literature within the fields of ABA and education. Current literature indicates school climate is a contributing factor to teacher attrition, which continues to plague secondary schools across the country (Garcia & Weiss, 2019; Martella et al., 2010). Utilizing a behaviorist approach in secondary schools for promoting students' academic and behavioral success is promising but is under-researched (Freeman et al., 2016; Gregory et al., 2014; Gregory et al., 2015; Gregory & Ripski, 2008; Putnam et al., 2002). Few previous studies explored teachers' perspectives of ABA, and the researcher found no studies conducted in the United States of secondary general and special education teachers' perceived knowledge, attitude, or use. This quantitative survey, while simplistic in its design and implementation, served an exploratory purpose to answer the research questions. Another unique part of this study is that the demographic factors collected were not used in the previous studies but were drawn from suggestions for further research made in those studies. To understand how educators are interacting with ABA as a technology in public schools, it is critical to collect data through surveying methods.

Research Question 1: What level of perceived knowledge do secondary teachers have on applied behavior analysis? How is this perceived knowledge impacted by demographic factors?

Findings of this study indicate that overall teachers have a moderate ($M = 3.5036$) perceived knowledge of ABA. Total years of teaching experience and geographic location were the only two demographic categories to imply perceived attitude cannot be meaningfully predicted. Perceived knowledge was impacted by the demographics in the following ways: (a) Total years of teaching experience? Perceived knowledge for applied behavior analysis does not change with an increase in the number of years of teaching experience; (b) Type of secondary setting you have experience teaching in (GEN/SPL)? Perceived knowledge highest for teachers who teach in a special education setting; (c) What is the geographic setting of your current school? The type of secondary school setting has no impact on the level of perceived knowledge; (d) Does your current school implement a tiered system of support? Employees teaching in schools with tiered support system have higher level of perceived knowledge as compared to others; (e) Highest degree completed? The level of perceived knowledge of teachers does not change with change in highest degree completed; (f) Participation in behavior management course? Teaching staff with experience participating in behavior management coursework in their bachelor's degree have higher perceived knowledge for applied behavior analysis as opposed to those who did not participate in such coursework

Research Question 2: What level of perceived attitude do secondary teachers have on applied behavior analysis? How is this perceived attitude impacted by demographic factors?

Findings of this study indicate that, overall, teachers have a positive perceived attitude of ABA. Total years of teaching experience and geographic location were the only demographic categories used in the survey that indicated that perceived attitude cannot be meaningfully predicted. Perceived attitude was impacted by the demographics in the following ways: (a) Total

years of teaching experience? Perceived attitude for applied behavior analysis does not change with an increase in the number of years of teaching experience. (b) Type of secondary setting you have experience teaching in (GEN/SPL)? Perceived attitude is negative for those who are teaching in the general school setting as compared to those have taught in special setting or both settings; (c)What is the geographic setting of your current school? The type of secondary school setting has no impact on the level of perceived attitude; (d)Does your current school implement a tiered system of support? Employees teaching in schools with tiered support systems have more positive perceived attitudes as compared to others;. (e) Highest degree completed? Perceived attitude becomes positive with an increase in education level; (f) Participation in behavior management course? Teaching staff with experience participating in behavior management coursework in their bachelor's degrees have higher perceived attitudes for applied behavior analysis as opposed to those who did not participate in such coursework.

Research Question 3: What level of perceived use do secondary teachers have on applied behavior analysis? How is this perceived use impacted by demographic factors?

Findings of this study indicate that, overall, teachers have a low perceived use of ABA in the classroom. Total years teaching experience and geographic location were the only two demographic categories to imply that perceived attitude cannot be meaningfully predicted. Perceived use was impacted by demographics of participants in the following ways: (a) Total years of teaching experience? The perceived use for applied behavior analysis does not change with an increase in the number of years of teaching experience. These results conflict with the results found in Randazzo's (2011) observation that teachers with more years of experience tended to perceive themselves as using ABA strategies more often; (b) Type of secondary setting you have experience teaching in (GEN/SPL)? Perceived use is less for those who are teaching in

the general school setting as compared to those have taught in special setting or both settings; (c) What is the geographic setting of your current school? The type of secondary school setting has no impact on the level of perceived use; (d) Does your current school implement a tiered system of support? Employees teaching in schools with tiered support systems have more perceived use as compared to others who do not teach in a school that implements a tiered system of support; (e) Highest degree completed? Teachers with higher educational degrees tended to have a more favorable attitude toward ABA and also indicated higher frequency of use of the previously mentioned strategies compared to those with lower-level diplomas. Use becomes higher with an increase in education level; (f) Participation in behavior management course? Teaching staff with experience participating in behavior management coursework in their bachelor's degree have higher perceived use for applied behavior analysis as opposed to those who did not participate in such coursework.

Research Question 4: Does perceived knowledge, attitude, and use predict the other?

In short, yes, each variable category correlated with the other. With a 1-step increase in perceived knowledge, perceived attitude increased by 0.491 units. Perceived use increased by 0.666 units with a 1-unit increase in perceived knowledge. This indicates that with a 1-unit increase in perceived attitude, perceived knowledge increases by 0.491 units. Perceived use increases by 0.422 units with 1-unit increase in perceived attitude. It can be stated that with 1-unit increase in perceived use, perceived knowledge increases by 0.666 units. Perceived knowledge increases by 0.422 units with a 1-unit increase in perceived use. Perceived use and knowledge are the highest predictors of these three variables.

Discussion

It is important to recognize and evaluate the factors that influence teacher behavior in

school settings. Teachers who have had the opportunity to learn about ABA, regardless of how many years they have been teaching or what geographic setting they serve, have a more positive attitude and a better perceived knowledge and use of ABA strategies and interventions in the classroom. Both knowledge of ABA and attitude toward using ABA were predictors of use of ABA for secondary classroom teachers surveyed in this study. However, knowledge of ABA was a stronger predictor for use of ABA strategies in the classroom.

An important aspect that was not illustrated in the previously stated results is that the researcher found that secondary classroom teachers who personally knew someone who had participated in ABA, as a therapeutic intervention for autism spectrum disorder (ASD) in the role of either , either as a therapist or recipient, had a higher perceived attitude of ABA than secondary classroom teachers who did not know someone who had participated as a therapist or recipient in ABA as a therapeutic intervention for ASD. Due to this section of the survey being so small, it is difficult to know the implications of these findings.

Teachers' reported frequency of use of ABA techniques was significantly predicted by the demographic variables when controlling for their number of years teaching, whether or not they mostly taught special education students, and if their current school implemented some kind of multi-tiered systems of support. Those teachers who currently teach in a special education setting were much more likely to perceive their knowledge, attitude, and frequency of use of ABA strategies much higher than all other teachers. This finding supports prior results of similar studies (McCormick, 2011, Randazzo, 2011), which indicate how important it is for teachers to continuously learn about ABA strategies throughout their careers, from teachers' pre-service educational programming in undergraduate coursework, through continuous education opportunities in in-service and conference presentations, attainment of higher education, and into

their final years of teaching. These findings also support the need for increased training in ABA strategies for general education teachers and teachers who come to education through alternative paths to certification.

Importance of Study

When teachers are well-versed in EBPs and understand how to implement them with fidelity, they are able to respond to their students' diverse needs, including both the academic and behavioral concerns that are emphasized in current educational efforts in a culturally sensitive way, and they are able to do this in a way that is rewarding for both the student and themselves. Students experience more positive outcomes, and teachers find fulfillment in their professional lives.

Conversely, teachers who are not prepared to respond to the multifaceted needs of diverse classrooms experience negative outcomes, such as frustration and professional burnout leading to exiting the profession. Although existing literature has examined teachers' perceptions and use of applied behavior analysis (Axelrod et al., 1990; Baker, 2005; Callahan et al., 2008; Callahan et al., 2010; Foxx, 1996; Kaff et al., 2007; Lohrmann et al., 2008; McCormick, 2011; Randazzo, 2011; Skinner & Hales, 1992) this is the first study to focus on secondary general and special education teachers.

Recommendations for Practice

This study can be used as a catalyst for action. Using ABA in schools can greatly change the face of the American education system, as teacher education on foundational behavior principles and ABA in secondary schools is the best avenue for use in the classroom.

Sustained Educator Training

Behavior management courses should include in-depth, continuous training on how to

effectively use multitiered systems of support based upon the foundations of behavior analysis throughout pre-service training for all educators. With a majority of the United States requiring use of multitiered systems of support to address the academic and social-emotional domains of student achievement, school districts should offer one-on-one support and training to ensure each classroom teacher is well-versed in and using ABA with fidelity to support their students. One finding of this research that was briefly documented in one prior study (Randazzo, 2011) was that special educators, in comparison to general educators, perceived themselves to be more knowledgeable about ABA strategies. To expound on this indication, this study found that not only did special educators perceive themselves to be more knowledgeable, but they also have a more positive attitude and use ABA strategies more than all other categories of educators. A review of pre-service education and contents of behavior management coursework should be reviewed to evaluate if there is a connection to special education pre-service programs and perceived knowledge, attitude, and use of ABA strategies versus general education pre-service programs and perceived knowledge, attitude, and use of ABA strategies. If teachers do not know how to use ABA, they will not be able to perform accurately and effectively under state and federally mandated multitiered systems of support. The gap in training can be filled by providing all teachers with foundational knowledge in ABA through traditional pre-service teacher-training programs, professional development and continuing education opportunities, and self-guided learning in implementing the strategies successfully and analyzing data that then informs practice in the classroom.

Use ABA to Battle Disproportionality

An examination of behavior referrals quickly indicates disproportionality in the number of referrals made based on the color of students' skin, primarily, and disability status, secondly.

In consideration of the use of ABA to combat this inequitable practice in education, first we must examine the extent to which racism and white privilege play into instructional practices in the American education system, curriculum, special education placement/services, and educational environments before students' placement into special education (Blanchett, 2006; Capatosto et al., 2017). A disproportionate number of non-white students with disabilities receive referrals for disciplinary misconduct compared to both their white disabled and non-disabled counterparts (Skiba, 2008; Skiba et al., 2002). The recommendation to examine ABA's effectiveness in responding to this disproportionality comes from the overarching existing research on educational professionals who are successfully using measurable academic outcomes, achieving operationally defined behavioral outcomes, and teaching positive social behaviors through interventions that are behaviorally based and culturally competent—all of which are central tenets of ABA (Ferguson, 2011; Gregory et al., 2010; Gregory & Ripski, 2008; Skiba et al., 2002; Skiba et al., 2008; Wallace et al., 2008) —to reduce the disproportionate amount of discipline and special education referrals of Black students both with and without disabilities (Bradshaw et al., 2010; Skiba et al., 2010; Sugai & Horner, 2002; Vincent & Tobin, 2011; U.S. Department of Health and Human Services, 2001).

Consistent findings of disproportionality in school discipline referrals and exclusionary punishment suggest that racial and ethnic disparities in discipline begin at the classroom level (Gregory et al., 201; Skiba et al., 2002; Skiba et al., 2008; Wallace et al., 2008). It is apparent that teacher use of ABA in the classroom plays a vital role in decreasing disproportionality as a whole. Vavrvas and Cole (2002), in an ethnographic observational study, published that many of the public school office referrals that led to school suspension were due to “violation of implicit interactional codes” (p. 91), and consistently, the reported violations were for a student calling

into question the teacher's authority or the teacher's established classroom practice. Not coincidentally, of those students singled out for behavior referral, a disproportionate amount were students of color. Black students are more likely than White students to be issued a discipline referral for both defiance (Gregory & Weinstein, 2008) and noncompliance (Skiba et al., 2008), which, under a system backed by the science of ABA, would not be accepted categorically as "behavior." Implementing operational definitions into all education settings is a cornerstone of appeal when advocating for the application of ABA in the school system. Without ABA's operational definitions and strict categories of behavior, schools are able to use defiance (Gregory & Weinstein, 2008) and noncompliance (Skiba et al., 2008) as reasons for referral.

What this strongly suggests is that a process of differential selection at the classroom level can contribute to disparities in discipline. "Differential selection" (Gregory et al., 2010 pg. 81), a hypothesis that is a part of a bigger framework to understand racial disparities in subjective judgment, can contribute to the understanding of racial discipline and achievement gaps in public schools across the United States. The application of exclusionary punishment in school discipline procedures paired with subjective criteria and flexibility in punishment criteria may be detrimental to Black, Latinx, and Indigenous youth (Gregory et al., 2010; Morrison et al., 2001; Morrison & Skiba, 2001) and result in differential selection. Differential selection suggests that ethnic minorities are far more likely to be singled out for problem behavior despite comparable occurrences of the same topographic and functional behavior of White students (McFadden et al, 1992; Piquero, 2008; Shaw & Braden, 1990; Wehlage & Rutter, 1986). ABA-based school-wide programs have been successful in decreasing many types of disproportionality both in special education and discipline of Black, Latinx, and Indigenous students. It is now important that schools review training and effectively operate using behavior analysis and its

prevention approach, which values positive behavior and has interventions and strategies that originate from the core principles of ABA. Using the current study to guide future research, educators can explore how to increase teachers' knowledge, use, and attitudes of ABA, and help teachers access reinforcement through ABA interventions in their schools to increase their future frequency of use as a way to reduce the disproportionality of behavioral referrals among students of color.

Previous research also suggests that a child's race and ethnicity can significantly influence the likelihood of being wrongfully identified as a student with a disability based on behavioral patterns they exhibit and cultural differences in upbringing, a misrepresentation that can have negative effects in both the immediate and long term (Children's Defense Fund, 1975; Cross, 1989; Gregory et al., 2010). It is costly to treat students with special services who are nondisabled but mislabeled because of their cultural identity, as both funding and human resources are necessary to support these students in their educational attainment. While many policymakers and legislators worry about the cost of adopting culturally competent assessments and training (Gregory et al., 2010), they may be receptive to the notion that schools are serving many students who are nondisabled and, if properly identified, appropriate alternatives may be less expensive. When given support to improve their capacity to provide culturally responsive instruction, teachers can be successful in improving student learning (Darling-Hammond & Friedlaender, 2008), and when instruction improves, it is likely that special education placements will decrease (Harry & Klingner, 2006).

Limitations and Implications for Future Research

One primary limitation to this study was that the instrument relied exclusively on participants' self-reported data. Because the secondary teachers' self-reported perceptions and

beliefs were assessed, participants' ratings were subjective, and there were no other measures utilized to compare teachers' perceptions. The methodology chosen for this study allows for limited generalization in the case that the sample is collected due to high non-response rate and declined invitations to participate or attract more participants who have a special interest in the subject matter, which may correlate to more knowledge about the subject matter (Saleh & Bista, 2017).

Another impactful limitation is that the use of "ABA" in the survey instrument. The researcher received emails and phone calls from potential respondents explaining that they did not take the survey or did not complete the survey because they did not know to what the acronym "ABA" was referring, or that they did not like "ABA" and did not want to participate in a survey asking about "ABA." This limitation should be considered for all future studies, as it is possible that only participants with a broadly positive view of "ABA" participated, and that those secondary teachers who received the survey with other views may not have participated. In the future, the research could mitigate some bias by rephrasing the questions, title, and recruitment material.

Future researchers should investigate further as to whether there are any significant differences between traditionally certified preschool, elementary, and/or secondary and emergency or alternatively certified preschool, elementary, and/or secondary teachers' (a) perceived knowledge and use of ABA strategies, (b) perceived barriers to use of ABA strategies, (c) perceived effectiveness of various instructional techniques in supporting their learning about ABA strategies, (d) instructional methods used within their training, and (e) knowledge of ABA strategies through a knowledge-based assessment.

This study demonstrates that when teachers are given access to behavior management

pre-service learning, they are more likely to report using the EBP of ABA. A potentially significant contributor to the results of this study is that the researcher targeted secondary teachers in two central-southern states of the United States, excluding preschool, elementary, and other educators. Future research should examine secondary education teachers in all 50 of the United States and compare it to data gathered on the demographic categories of both teachers and students.

Future studies should attempt to replicate the findings of this and past research studies that utilize behavioral measures, such as the observation of real-life situations, while maintaining a multidimensional approach. As secondary teachers' self-reported perceptions and beliefs were assessed, participants' ratings were subjective and no other measures were utilized to compare teachers' perceptions. Future research should include classroom observations to evaluate teachers' rating scores with their use in the classroom and open-ended response questions to further evaluate the teachers' knowledge and attitudes toward ABA.

Through this study, participants' self-reported perceptions of knowledge, use, and attitude of ABA have been investigated, but this study is fundamentally limited, as it does not report on actual secondary teacher behavior data. Further research should also compare secondary teachers' perceptions regarding their knowledge and frequency of use of ABA techniques to administrators' and/or colleagues' ratings of their behavior management skills to determine whether there is consistency between measures. In addition, future research should utilize a standardized measure to assess teachers' knowledge and frequency of use of ABA strategies as they are observed in each classroom by a researcher.

Conclusion

The rich body of research on applied behavior analysis and its use in the classroom as

components of school-wide intervention should lead policymakers to investigate pre-service teacher programs, including their behavior management courses, and consider requiring additional coursework and experience in behavior management and ABA for those applying for certification both in general education and special education (Flower et al., 2017; Freeman et al., 2014; Wei et al., 2010). On a large scale, the American education system could greatly benefit from the addition of increased teacher knowledge of the basic strategies and interventions of ABA, as its implementation could lend to the narrowing of the racial discipline gap and a decrease of the school-to-prison pipeline, as well as increase overall satisfaction of educators across the United States in diverse classrooms, resulting in a drastic decrease in teaching attrition. This could lead to an improvement in the current concerns of educators at the school, district, state, and federal levels, especially as the long-term implications of the impact of COVID-19 are more greatly understood. On a smaller scale, individual classroom teachers may be able to increase the academic achievement of their students by decreasing common classroom management problems, such as attention, behavior, and others, with the effective implementation of ABA strategies that are used consistently and with fidelity, thus leading to overall professional fulfillment for teachers and success for students in any classroom.

References

- Adamson, R. M., McKenna, J. M., & Mitchell, B. (2019). Supporting all students: Creating a tiered continuum of behavior support for all classroom levels to enhance schoolwide multi-tiered systems of support. *Preventing School Failure: Alternative Education for Children and Youth*, 63(1), 62–67. <http://dx.doi.org/10.1080/1045988X.2018.1501654>
- Albarracín, D., Gillette, J. C., Earl, A. N., Glasman, L. R., Durantini, M. R., & Ho, M. H. (2005). *A test of major assumptions about behavior change: a comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic*. *Psychological bulletin*, 131(6), 856–897. <https://doi.org/10.1037/0033-2909.131.6.856>
- Allen, M. (2017). *The sage encyclopedia of communication research methods* (Vols. 1-4). Thousand Oaks, CA: SAGE Publications, Inc. doi:10.4135/9781483381411
- Allen, K. & Bowles, T. (2014). Examining the effects of brief training on the attitudes and future use of behavioural methods by teachers. *Behavioral Interventions*, 29, 62–76. 10.1002/bin.1376. <https://doi.org/10.1002/bin.1376>
- Alotaibi, A. A. (2015). *Knowledge and use of applied behavior analysis among teachers of students with autism spectrum disorder in Saudi Arabia* [Unpublished doctoral dissertation].
- Austin, J. L., & Marshall, J.A. (2008). Bridging the marketing gap: A review of how to think like a behavior analyst: Understanding the science that can change your life by Jon Bailey and Mary Burch. *Applied Behavior Analysis*, 41, 149–154. <https://doi.org/10.1901/jaba.2008.41-149>

- Baer, D. M., Wolf, M. M., & Risley, T. (1968). Some current dimensions of applied behavior analysis. *Applied Behavior Analysis, 1*, 91–97. <https://doi.org/10.1901/jaba.1968.1-91>
- Bailey, J. S. (1991). Marketing behavior analysis requires different talk. *Applied Behavior Analysis, 24*, 445–448. <https://doi.org/10.1901/jaba.1991.24-445>.
- Baker, P. (2005). Managing student behavior: How ready are teachers to meet the challenge? *American Secondary Education, 33*(3), 51–64. <http://www.jstor.org/stable/41064554>
- Begeny, J. C., & Martens, B. K. (2006). Assessing pre-service teachers' training in empirically-validated behavioral instruction practices. *School Psychology Quarterly, 21*(3), 262–285. <https://doi.org/10.1521/scpq.2006.21.3.262>
- Beltman, S., Mansfield, C. F., & Harris, A. (2016). Quietly sharing the load? The role of school psychologists in enabling teacher resilience. *School Psychology International, 37*(2), 172–188. <https://doi.org/10.1177/0143034315615939>
- Berkeley, S., Scanlon, D., Bailey, T. R., Sutton, J. C., & Sacco, D. M. (2020). A snapshot of RTI implementation a decade later: New picture, same story. *Learning Disabilities, 53*(5), 332–342. <https://doi.org/10.1177/0022219420915867>
- Bloh, C., & Axelrod, S. (2008). IDEIA and the means to change behavior should be enough: Growing support for using applied behavior analysis in the classroom. *Early and Intensive Behavior Intervention, 5*(2), 52–56. <http://dx.doi.org/10.1037/h0100419>
- Blum, M. H. (1994). *The pre-service teacher's educational training in classroom discipline: A national survey of teacher education programs* [Doctoral dissertation]. ProQuest Dissertations and Theses database (UMI No. 9434650).

- Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children*, 71(2), 195–207. <https://doi.org/10.1177/001440290507100205>
- Brophy, J. (1999). Perspectives of classroom management: Yesterday, today and tomorrow. In H. J. Freiberg, & J. E. Brophy (Eds.), *Beyond behaviourism: Changing the classroom management paradigm*. Allyn & Bacon.
- Brophy, J. (2006). History of research on classroom management. In C. M. Evertson, & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 17–43). Lawrence Erlbaum.
- Broughton, S. F. (1974). The unwitting behavior modifier. *The Elementary School Journal*, 75(3), 143-151. <https://doi.org/10.1086/460885>
- Burkhauser, S. (2017). How much do school principals matter when it comes to teacher working conditions? *Educational Evaluation and Policy Analysis*, 39(1), 126–145. <https://doi.org/10.3102/0162373716668028>
- Burns, M. E., & Ysseldyke, J. (2009) Reported prevalence of evidence-based instructional practices in special education. *Special Education*, 43, 3–11. <https://doi.org/10.1177/0022466908315563>
- Callahan, K., Foxx, R., Swierczynski, A., Aerts, X., Mehta, S., McComb, M., Nichols, S.M., Segal, G., Donald, A., & Sharma, R. (2019). Behavioral artistry: Examining the relationship between the interpersonal skills and effective practice repertoires of applied behavior analysis practitioners. *Autism and Developmental Disorders*, 49, 3557–3570. <https://doi.org/10.1007/s10803-019-04082-1>

- Callahan, K., Henson, R., & Cowan, A. (2008). Social validation of evidence-based practices in autism by parents, teachers, and administrators. *Autism and Developmental Disorders, 38*(4), 678–692. <https://doi.org/10.1007/s10803-007-0434-9>
- Callahan, K., Shukla-Mehta, S., Magee, S., & Wie, M. (2010). ABA versus TEACCH: The case for defining and validating comprehensive treatment models in autism. *Autism and Developmental Disorders, 40*(1), 74–88. <https://doi.org/10.1007/s10803-009-0834-0>
- Campbell, D.G., Reichle, N.C., & Van Bourgondien, M.E. (1996). The autism survey: An evaluation of reliability and validity. *Autism and Developmental Disorders, 26*(6), 621–634. <https://doi.org/10.1007/BF02172351>
- Capatosto, K., Baek, M., & Staats, C. (2017). *Discipline map user guide: A landscape of child opportunity and school discipline in Franklin County*. Kirwan Institute. <http://kirwaninstitute.osu.edu/wp-content/uploads/2017/05/arcgis-guide.pdf>
- Chemlynski, C. (1996). Discipline as teaching. *Education Digest, 6*, 42–48.
- Choi, Y. (2007). Academic achievement and problem behaviors among Asian Pacific Islander American adolescents. *Youth and Adolescence, 36*, 403–415. <https://doi.org/10.1007/s10964-006-9152-4>
- Cook, B., Buysse, V., Klingner, J., Landrum, T., McWilliam, R., Tankersley, M., & Test, D. (2014). Council for Exceptional Children: Standards for evidence-based practices in special education. *Teaching Exceptional Children, 46*(6), 206. <http://dx.doi.org/10.1177/0040059914531389>
- Cook, B. G., & Cook, S. C. (2011). *Thinking and communicating clearly about evidence-based practices in special education*. Division for Research: Council for Exceptional Children.

- Cook, B. G., & Cook, S. C. (2016) Leveraging evidence-based practice through partnerships based on practice-based evidence. *Learning Disabilities, 14*(2), 143–157.
- Cook, B. G., Tankersley, M., Cook, L., & Landrum, T. J. (2008). Evidence-based practices in special education: Some practical considerations. *Intervention in School and Clinic, 44*(2), 69–75. <https://doi.org/10.1177/1053451208321452>
- Cooper, J. O., Heron, T. E., & Heward. W. L. (2007). *Applied behavior analysis* (2nd ed.). Pearson.
- Cooper, J. O., Heron, T. E., & Heward. W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson.
- Cordeiro C., Machás A., & Neves M.M. (2010). A case study of a customer satisfaction problem: Bootstrap and imputation techniques. In Esposito Vinzi V., Chin W., Henseler J., & Wang H. (Eds.), *Handbook of Partial Least Squares* (pp. 279-287). Springer Handbooks of Computational Statistics. https://doi.org/10.1007/978-3-540-32827-8_13
- Creswell, J.W. (2014). *A Concise Introduction to Mixed Methods Research*. Sage publications.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Cross, T., Bazron, B., Dennis, K., & Isaacs, M. (1989). *Towards a culturally competent system of care: A monograph on effective services for minority children who are severely emotionally disturbed*. CASSP Technical Assistance Center, Georgetown University Child. doi:10.1207/s1532768xjepc0303_2
- Dempster, A. P., Laird, N. M., & Rubin, D. B. (1977). Maximum Likelihood from Incomplete Data Via the *EM* Algorithm. *JRoyal Statistical Society: Series B (Methodical)*, 39(1), 1-22. <https://doi.org/10.1111/j.2517-6161.1977.tb01600.x>

- Dowey, A., Toogood, S., Hastings, R.P. and Nash, S. (2007). Can brief workshop interventions change care staff understanding of challenging behaviours? *Applied Research in Intellectual Disabilities*, 20, 52–57. <https://doi.org/10.1111/j.1468-3148.2006.00339.x>
- Dunlap, G., Iovannone, R., Wilson, K. J., Kincaid, D. K., & Strain, P. (2010). Prevent-Teach-Reinforce: A Standardized Model of School-Based Behavioral Intervention. *Positive Behavior Interventions*, 12(1), 9–22. <https://doi.org/10.1177/1098300708330880>
- Eber, L., Nelson, C. M., & Miles, P. (1997). School-Based wraparound for students with emotional and behavioral challenges. *Exceptional Children*, 63(4), 539–555. <https://doi.org/10.1177/001440299706300414>
- Eller, W., Doerfler, C., & Meier, K. (2000). *Teacher turnover in Texas: Problems and prospects. A report of the Texas Educational Excellence Project*. Texas A&M University.
- ESSA, S.1177 - 114th Congress (2015-2016): Every Student Succeeds Act. (2015, December 10). <https://www.congress.gov/bill/114th-congress/senate-bill/1177>
- Fallon, L. M., Cathcart, S. C., DeFouw, E. R., O’Keeffe, B. V., & Sugai, G. (2018). Promoting teachers’ implementation of culturally and contextually relevant class-wide behavior plans. *Psychology in the Schools*, 55(3), 278–294. <https://doi-org.ezproxy.lib.ou.edu/10.1002/pits.22107>
- Fallon, L. M., O’Keeffe, B. V., & Sugai, G. (2012). Consideration of culture and context in school-wide positive behavior support: A review of current literature. *Positive Behavior Interventions*, 14, 209–219. <https://doi.org/10.1177/1098300712442242>
- Feitler, F. C., & Tokar, E. (1982). Getting a handle on teacher stress: How bad is the problem? *Educational Leadership*, 39(6), 456–458.

- Fielding, C., & Lowdermilk, J., Lanier, L., Fannin, A., Schkade A. J., Rose, C. & Simpson, C. (2013). Applied behavior analysis: Current myths in public education. *American Academy of Special Education Professionals, Spring/Summer*, 83–97.
- Fisher, W. W., Groff, R. A., & Roane, H. S. (2011). Applied behavior analysis: History, philosophy, principles, and basic methods (pp. 3–13). In W. Fisher, C. Piazza, & H. Roane (Eds.), *Handbook of applied behavior analysis*. Guilford Press.
- Flannery, K., Fenning, P., Kato, M. M., & McIntosh, K. (2013). Effects of school-wide positive behavioral interventions and supports and fidelity of implementation on problem behavior in high schools. *School Psychology Quarterly, 29*(2), 111–124. <https://doi.org/10.1037/spq0000039>
- Flower, A., McKenna, J., & Haring, C. (2017). Behavior and classroom management: Are teacher preparation programs really preparing our teachers? *Preventing School Failure, 61*(2), 163–169. <https://doi.org/10.1080/1045988X.2016.1231109>
- Fowler, F. J. (2009). *Survey research methods* (4th ed.). Thousand Oaks, CA: SAGE Publications.
- Freeman, J., Simonsen, B., Briere, D. E., & MacSuga-Gage, A. S. (2014). Pre-service teacher training in classroom management: A review of state accreditation policy and teacher preparation programs. *Teacher Education and Special Education, 37*(2), 106–120. <https://doi.org/10.1177/0888406413507002>
- Freeman, J., Simonsen, B., McCoach, D. B., Sugai, G., Lombardi, A., & Horner, R. (2016). Relationship between school-wide positive behavior interventions and supports and academic, attendance, and behavior outcomes in high schools. *Positive Behavior Interventions, 18*(1), 41–51. <https://doi.org/10.1177/1098300715580992>

- Freeman, J., Sugai, G., Simonsen, B., & Everett, S. (2017). MTSS coaching: Bridging knowing to doing. *Theory into Practice*, 56(1), 29–37. <https://doi.org/10.1080/00405841.2016.1241946>
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction*. Pearson.
- Garcia E., & Weiss, E. (2019). *The teacher shortage is real, large and growing, and worse than we thought*. Economic Policy Institute. <https://www.epi.org/publication/the-teacher-shortage-is-real-large-and-growing-and-worse-than-we-thought-the-first-report-in-the-perfect-storm-in-the-teacher-labor-market-series/>
- Gliem, J.A., & Gliem, R.R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales (p. 82-88). In *2003 Midwest Research to Practice Conference*.
- Gregory, A., Allen, J. P., Mikami, A. Y., Hafen, C. A., & Pianta, R. C. (2014). Effects of a professional development program on behavioral engagement of students in middle and high school. *Psychology in the Schools*, 51, 143–163. <https://doi.org/10.1002/pits.21741>
- Gregory, A., Allen, J., Mikami, A., Hafen, C., & Pianta, R. (2015). The promise of a teacher professional development program in reducing racial disparity in classroom exclusionary discipline. In D. J. Losen (Ed.), *Closing the discipline gap: Equitable remedies for excessive exclusion* (pp. 166–179). Teachers College Press.
- Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for Black and White high school students. *American Educational Research Journal*, 48, 904–934. <https://doi.org/10.3102/0002831211398531>

- Gregory, A., Cornell, D., Fan, X., Sheras, P. L., Shih, T., & Huang, F. (2010). Authoritative school discipline: High school practices associated with lower student bullying and victimization. *Educational Psychology, 102*, 483–496. <https://doi.org/10.1037/a0018562>
- Gregory, A., & Ripski, M. (2008). Adolescent trust in teachers: Implications for behavior in the high school classroom. *School Psychology Review, 37*, 337–353. <https://doi.org/10.1080/02796015.2008.12087881>
- Gregory, A., Russell, J. S., Noguera, P. A. (2010). The achievement gap and the discipline gap: Two side of the same coin? *Educational Researcher, 39*(1), 59–68. <https://doi.org/10.3102/0013189X09357621>
- Gregory, A., Skiba, R. J., & Mediratta, K. (2017). Eliminating disparities in school discipline: A framework for intervention. Special issue on equity in school. *Review of Research in Education, 41*, 253–278. <https://doi.org/10.3102/0091732X17690499>
- Gregory, A., & Weinstein, R. S. (2004). Connection and regulation at home and in school: Predicting growth in achievement for adolescents. *Adolescent Research, 19*, 405–427. <https://doi.org/10.1177/0743558403258859>
- Gregory, A., & Weinstein, S. R. (2008). The discipline gap and African Americans: Defiance or cooperation in the high school classroom. *School Psychology, 46*, 455–475. <https://doi.org/10.1016/j.jsp.2007.09.001>
- Grieger, R. M. (1972). Teacher attitudes as a variable in behavior modification consultation *School Psychology, 10*(3), 279–287. [https://doi.org/10.1016/0022-4405\(72\)90063-5](https://doi.org/10.1016/0022-4405(72)90063-5)
- Hanks, J., Davies, R., Christensen, S., Harris, S., Bowles, B. (2019). Teacher attrition: Factors that predict teachers' thoughts of leaving the profession. *Education Sciences, 9*(4), 300.

- Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004). Why public schools lose teachers. *Human Resources*, 39(2), 326–354. doi:10.3368/jhr.XXXIX.2.326
- Harlacher, J. (2016). *An educator's guide to questionnaire development*. REL 2016–108. Regional Educational Laboratory Central. <http://ies.ed.gov/ncee/edlabs>.
- Harlacher, J. E., Sanford, A., & Nelson, N. (2014). Distinguishing between tier 2 and tier 3 instruction in order to support implementation of RTI. *RTI Action Network Monthly Newsletter*. <http://www.rtinetwork.org/essential/tieredinstruction/tier3/distinguishing-between-tier-2-and-tier-3-instruction-in-order-to-support-implementation-of-rti#top>
- Harris, D. C. (2007). Should I stay or should I go? Comparing teacher mobility in Florida's charter and traditional public schools. *Peabody Journal of Education*, 82(2–3), 274–310. <https://doi.org/10.1080/01619560701312970>
- Harris, S. P., Davies, R. S., Christensen, S. S., Hanks, J., & Bowles, B. (2019). Teacher attrition: Differences in stakeholder perceptions of teacher work conditions. *Education Sciences*, 9. <https://doi.org/10.3390/educsci9040300>
- Holt, C., Smith, R., & Capps, M. A. (2004). School facilities: The state department's influence. *AASA Journal of Scholarship and Practice*, 1, 6–10.
- Horner, R. & Sugai, G. (2015). School-wide PBIS: An example of applied behavior analysis implemented at a scale of social importance. *Behavior Analysis in Practice*, 8(1), 80–85. 10.1007/s40617-015-0045-4. <https://doi.org/10.1007/s40617-015-0045-4>
- Horner, R., Carr, E., Strain, P., Todd, A., & Reed, H. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Autism and Development Disorders*, 32(5), 423–446. <https://doi.org/10.1023/A:1020593922901>

- Hursh, D. (2007). Exacerbating inequality: The failed promise of the No Child Left Behind Act. *Race Ethnicity and Education, 10*, 295–308. <https://doi.org/10.1080/13613320701503264>
- Kaff, M. S., Zabel, R. H., & Milham, M. (2007) Revisiting cost-benefit relationships of behavior management strategies: What special educators say about usefulness, intensity, and effectiveness. *Preventing School Failure, 51*(2), 35–45. <https://doi.org/10.3200/PSFL.51.2.35-45>
- Kang, Y., & Harring, J. R. (2012). *Investigating the impact of non-normality, effect size, and sample size on two-group comparison procedures: An empirical study*. Presented at the annual meeting of the American Educational Research Association (AERA), SIG: Educational Statisticians, Vancouver, BC.
- Kelchtermans, G. (2017). ‘Should I stay or should I go?’: Unpacking teacher attrition/retention as an educational issue. *Teachers and Teaching Theory and Practice, 23*(8), 961–977. <https://doi.org/10.1080/13540602.2017.1379793>
- Kern, L., & Manz, P. (2004). A look at current validity issues of school-wide behavior support. *Behavioral Disorders, 30*(1), 47–59. <https://doi.org/10.1177/019874290403000102>
- Kirk, R. E. (2013). *Experimental design: Procedures for the behavioural sciences* (4th ed.). Thousand Oaks, CA: Sage.
- Knitzer, J., Steinberg, Z., & Fleisch, B. (1990). *At the schoolhouse door: An examination of programs and policies for children with behavioral and emotional problems*. Bank Street College of Education.

- Kremer, L., & Moore, M. (1978). Changes in attitudes towards education during teacher training. *International Review of Education*, 24(4), 511–513. <https://doi.org/10.1007/BF00615697>
- Lane, K. L., Oakes, W. P., Royer, D. J., Menzies, H. M., Brunsting, N. C., Buckman, M. M., Common, E. A., Lane, N. A., Schatschneider, C., & Lane, K. S. (2021). *Secondary teachers' self-efficacy during initial implementation of comprehensive, integrated, three-tiered models*. *Positive Behavior Interventions*, 23(4), 232–244. <https://doi.org/10.1177/1098300720946628>
- Lane, K. L., Oakes, W., & Menzies, H. M. (2018). Comprehensive, Integrated, Three-Tiered (CI3T) models of prevention: The role of systematic screening to inform instruction. In *Handbook of Response to Intervention and Multi-Tiered Systems of Support* (pp. 63–76). Taylor & Francis. <https://doi.org/10.4324/9780203102954>
- Levine, D. (2014). *Even you can learn statistics and analytics: An easy to understand guide to statistics and analytics* (3rd ed.). Pearson FT Press.
- Little, R. J. A. (1986). A Test of Missing Completely at Random for Multivariate Data with Missing Values. *American Statistical Association*, 83(404), 1198-1202. [10.1080/01621459.1988.10478722](https://doi.org/10.1080/01621459.1988.10478722)
- Martin, N. K., & Baldwin, B. (1993, April). *Validation of an inventory of classroom management style: Differences between novice and experienced teachers*. Paper presented at the Annual Meeting of the American Education Research Association, Atlanta, GA.

- Martin, N. K., Yin, Z., & Mayall, H. (2007). The attitudes & beliefs on classroom control inventory-revised and revisited: A continuation of construct validation. *Classroom Interaction*, 42(2), 11-20.
- Martella, R. C., Marchand-Martella, N. E., Woods, B., Thompson, S., Crockett, C., Northrup, E., Benner, G. J., & Ralston, N. C. (2010). Positive behavior support: Analysis of consistency between office discipline referrals and teacher recordings of disruptive classroom behaviors. *Behavioral Development Bulletin: Special Section on Early and Intensive Behavioral Intervention in Children*, 10, 25–33. <http://dx.doi.org/10.1037/h0100517>
- Martella, R. C., Nelson, J. R., & Marchand-Martella, N. E. (2003). *Managing behaviors in the schools: A school-wide, classroom, and individualized social learning approach*. Allyn and Bacon.
- Martella, R. C., Nelson, J. R., Marchand-Martella, N. E., & O'Reilly, M. (2012). *Comprehensive behavior management: Individualized, classroom, and schoolwide approaches* (2nd ed.). Sage.
- Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.
- McCormick, J. (2011). *Inclusive elementary classroom teacher knowledge of and attitudes toward applied behavior analysis and autism spectrum disorder and their use of applied behavior analysis* [Unpublished doctoral dissertation]. Dowling College, Brookhaven, NY.

- McFadden, A. C., Marsh, G. E., Price, B. J., & Hwang, Y. (1992). A study of race and gender bias in the punishment of handicapped school children. *The Urban Review*, 24(4), 239–251. <https://doi.org/10.1007/BF01108358>
- McFarland, J., Hussar, B., Zhang, J., Wang, X., Wang, K., Hein, S., Diliberti, M., Forrest Cataldi, E., Bullock Mann, F., and Barmer, A. (2019). *The condition of education*. <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2019144>
- McIntosh, K., Girvan, E. J., Horner, R. H., & Smolkowski, K. (2014). Education not incarceration: A conceptual model for reducing racial and ethnic disproportionality in school discipline. *Applied Research on Children: Informing Policy for Children at Risk*, 5(2).
- McIntosh, K., & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS*. The Guilford Press.
- McKinney, S. E., Campbell-Whately, G. D., Kea, C. D. (2005). Managing student behavior in urban classrooms: The role of teacher ABC assessments. *Clearing House: Educational Strategies, Issues and Ideas*, 79(1), 16. <https://doi.org/10.3200/TCHS.79.1.16-20>
- Merrett F., & Wheldall, K. (1982). Does teaching student teachers about behaviour modification techniques improve their teaching performance in the classroom? *Education for Teaching*, 8(1), 67–75. doi:10.1080/0260747820080109
- Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (4th ed.). Sage.
- Meyers, R. K., Devlin-Scherer, W. L., Devlin-Scherer, R., Wright, W., & Roger, A. M. (1997). The Effects of Collaborative Teacher Study Groups and Principal Coaching on Individual

- Teacher Change. *Classroom Interaction*, 32(1), 18–22. <http://www.jstor.org/stable/23870792>
- Miles, S., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low-income elementary school children. *Child Development*, 77(1), 103–117. <https://doi.org/10.1111/j.1467-8624.2006.00859.x>
- Moore, C. M. (2011). Why do teachers quit? An investigation of the influence of school environment and teacher characteristics on discontent and attrition [Doctoral dissertation]. Temple University. <http://dx.doi.org/10.34944/dspace/1934>
- Morrison, G., Anthony, S., Storino, M., & Dillon, C. (2001). An examination of the disciplinary histories and the individual and educational characteristics of students who participate in an in-school suspension program. *Education and Treatment of Children*, 24, 276–293.
- Morrison, G., & Skiba, R. (2001). Predicting violence from school misbehavior: Promises and perils. *Psychology in the Schools*, 38, 173–184. <https://doi.org/10.1002/pits.1008>
- Musgrove, W. J. (1974). A scale to measure attitudes toward behavior modification. *Psychology in the Schools*, 11, 392-396.
- Nelson, J. R., Hurley, K. L., Synhorst, L., Epstein, M. H., Stage, S. A., & Buckley, J. A. (2009). The child outcomes of a behavior model. *Exceptional Children*, 76, 30–37.
- Nelson, J. R., Hurley, K. L., Synhorst, L., Epstein, M. H., Stage, S. A., & Buckley, J. A. (2009). The child outcomes of a behavior model. *Exceptional Children*, 76, 30–37.
- Nelson, J. R., Johnson, A., & Marchand-Martella, M. (1996). Effects of direct instruction, cooperative learning, and independent learning practices on the classroom behavior of

- students with behavioral disorders: A comparative analysis. *Journal of Emotional and Behavioral Disorders*, 4, 53–62. <https://doi.org/10.1177/106342669600400106>
- Nelson, J. R., Martella, R. C., & Marchand-Martella, N. E. (2002). Maximizing student learning: The effects of a comprehensive school-based program for preventing problem behaviors. *Journal of Emotional and Behavioral Disorders*, 10, 136–148. <https://doi.org/10.1177/10634266020100030201>
- Nguyen, T. D., Lam, P., Springer, M. & Crouch, M. (2019). The factors of teacher attrition and retention: An updated and expanded meta-analysis of the literature. *EdWorkingPaper*, 19, 149. <https://doi.org/10.26300/cdf3-4555>
- Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education*, 33(3), 301–314. <https://doi.org/10.1080/02602930701293231>
- Odom, S. L., Boyd, B., Hall, L. J., & Hume, K. (2010). Evaluation of comprehensive treatment models for individuals with autism spectrum disorders. *Journal of Autism and Developmental Disabilities*, 40, 425–437. <https://doi.org/10.1007/s10803-009-0825-1>
- Odom, S. L., Couet-Klingenberg, L., Rogers, S., & Hatton, D. (2010). Evidence-based practices for children and youth with autism spectrum disorders. *Preventing School Failure*, 54, 275–282. <https://doi.org/10.1080/10459881003785506>
- Peng, C., Lee, L., & Ingersoll, G. (2002). An introduction to logistic regression analysis and reporting. *Journal of Educational Research*, 96, 3–14. <https://doi.org/10.1080/00220670209598786>
- Piquero, A. (2008). Disproportionate minority contact. *Future of Children*, 18, 59–79. <https://doi.org/10.1353/foc.0.0013>

- Preston, A. I., Wood, C. L., & Stecker, P. M. (2016). Response to intervention: Where it came from and where it's going. *Preventing School Failure: Alternative Education for Children and Youth*, 60(3), 173–182. <https://doi.org/10.1080/1045988X.2015.1065399>
- Pullen, P. C., & Kennedy, M. J. (Eds.). (2019). *Handbook of response to intervention and multi-tiered systems of support*. Routledge.
- Putnam, R. F., & Kincaid, D. (2015). School-wide PBIS: Extending the impact of applied behavior analysis. Why is this important to behavior analysts? *Behavior Analysis in Practice*, 8, 88–91. <https://doi.org/10.1007/s40617-015-0055-2>
- Putnam, R. F., & Knoster, T. A. (2016). A reply to the commentaries on “School-wide PBIS: An example of applied behavior analysis implemented at a scale of social importance” by Horner and Sugai (2015): PBIS is function over form: The clear behavioral roots and opportunities the PBIS framework presents to the field of behavior analysis moving forward. *Behavior analysis in practice*, 9, 95–101. <https://doi.org/10.1007/s40617-015-0092-x>
- Putnam, R. F., Luiselli, J. K., & Sunderland, M. (2002). Longitudinal evaluation of behavior support intervention in a public middle school. *Journal of Positive Behavior Interventions*, 4, 182–188. <https://doi.org/10.1177/10983007020040030701>
- Randazzo, M. E. (2011). *Elementary teachers' knowledge and implementation of applied behavior analysis techniques* [Unpublished doctoral dissertation].
- Ravitch, D. (2010). *The death and life of the great American school system: How testing and choice are undermining education*. Basic Books.

- Reichow, B., Volkmar, F., & Cicchetti, D. (2008). Development of the evaluative method for evaluating and determining evidence-based practices in autism. *Journal of Autism and Developmental Disorders*, 38, 1311–1319. <https://doi.org/10.1007/s10803-007-0517-7>
- Rosenwasser, B., & Axelrod, S. (2001). The contributions of applied behavior analysis to the education of people with autism. *Behavior Modification*, 25, 671–677. <https://doi.org/10.1177/0145445501255001>
- Ross, S. W., Romer, N., & Horner, R. H. (2012). Teacher well-being and the implementation of school-wide positive behavior interventions and support. *Journal of Positive Behavior Interventions*, 14, 118–128. <https://doi.org/10.1177/1098300711413820>.
- Rumrill, P. D., Cook, B. G., & Wiley, A. (2011). *Research in special education: Designs, methods and applications* (2nd ed.). Charles C. Thomas.
- Rutherford, A. (2011). *ANOVA and ANCOVA: A GLM approach* (2nd ed.). Hoboken, NJ: John Wiley & Sons.
- Sackett, D. L., Rosenberg, W. M., Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: What it is and what it isn't. *British Medical Journal*, 312, 71–72. <http://dx.doi.org/10.1136/bmj.312.7023.71>
- Saleh, A., & Bista, K. (2017). Examining factors impacting online survey response rates in educational research: Perceptions of graduate students. *Journal of MultiDisciplinary Evaluation*, 13(29), 63–74. https://journals.sfu.ca/jmde/index.php/jmde_1/article/view/487
- Shaw, S. R., & Braden, J. B., (1990). Race and gender bias in the administration of corporal punishment. *School Psychology*, 19, 378. <https://doi.org/10.1080/02796015.1990.12085476>

- Simpson, R. L. (2001). ABA and students with autism spectrum disorders: Issues and considerations for effective practice. *Focus on Autism and Other Developmental Disabilities, 16*(2), 68–71. <https://doi.org/10.1177/108835760101600202>
- Skaalvik, E. & Skaalvik, S. (2016). Teacher stress and teacher self-efficacy as predictors of engagement, emotional exhaustion, and motivation to leave the teaching profession. *Creative Education, 7*, 1785–1799. 10.4236/ce.2016.713182
- Skiba, R. J., Michael, R. S., Nardo, A. C., & Peterson, R. L. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *The Urban Review, 34*, 317–342. <https://doi.org/10.1023/A:1021320817372>
- Skiba, R. J., Simmons, A. S., Gibb, A. C., Rausch, M. K., Cuadrado, J., & Chung, C. G. (2008). Achieving equity in special education: History, status, and current challenges. *Exceptional Children, 74*, 264–288. <https://doi.org/10.1177/001440290807400301>
- Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. Appleton-Century-Crofts.
- Skinner, B. F. (1968). *The technology of teaching*. Prentice Hall.
- Skinner, M. E., & Hales, M. R. (1992). Classroom teachers' 'explanations' of student behavior: One possible barrier to the acceptance and use of applied behavior analysis procedures in the schools. *Journal of Educational and Psychological Consultation, 3*(3), 219–232. https://doi.org/10.1207/s1532768xjepc0303_2
- Smyth, S., Reading, B. & McDowell, C. (2019). The impact of staff training on special educational needs professionals' attitudes towards and understanding of applied behavior analysis. *Journal of Intellectual Disabilities, 23*(4), 541–551. <https://doi.org/10.1177/1744629517739160>

- Stevens, L. J., & Price, M. (1992). Meeting the challenge of educating children at risk. *Kappan*, 74(1), 18–23.
- Stewart, R. M., Benner, G. J., Martella, R. C., & Marchand-Martella, N. E. (2007). Three-tier models of reading and behavior: A research review. *Journal of Positive Behavior Interventions*, 9(4), 239–253. <https://doi.org/10.1177/10983007070090040601>
- Stone, W. (1987). Cross-disciplinary perspectives on autism. *Journal of Pediatric Psychology*, 12(A), 615–630. <https://doi.org/10.1093/jpepsy/12.4.615>
- Sugai G. (2013). *Using systems, data, and practices interdependently to drive school and district-wide improvement*. New Haven, CT: Presentation at Innovate to Eliminate Gaps in Student Achievement Workshop.
- Sugai, G., & Horner, R. (2006). A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology Review*, 35(2), 245–259. <https://doi.org/10.1080/02796015.2006.12087989>
- Sugai, G., & Horner, R. H. (2009). Responsiveness to intervention and school-wide positive behavior supports: Integration of multi-tiered approaches. *Exceptionality*, 17(4), 223–237. <https://doi.org/10.1080/09362830903235375>
- Sugai, G., & Simonsen, B. (2020). Reinforcement foundations of a function-based behavioral approach for students with challenging behavior. *Beyond Behavior*, 29(2), 78–85. <https://doi.org/10.1177/1074295620902444>
- Sugai, G., Horner, R. H., Dunlap, G., Hieneman, M., Lewis, T. J., Nelson, C. M., Scott, T., Liaupsin, C., Sailor, W., Turnbull, A. P., Turnbull, H. R., Wickham, D., Wilcox, B., & Rief, M. (2000). Applying positive behavior support and functional behavioral

- assessment in schools. *Journal of Positive Behavior Interventions*, 2(3), 131–143.
<https://doi.org/10.1177/109830070000200302>
- Sulzer-Azaroff, B. (1986). Behavior analysis and education: Growing achievements and crying needs. *Division 25 Recorder*, 21, 55–65.
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2017). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Learning Policy Institute.
- Sutherland, K. S., Alder, N., & Gunter, R. L. (2003). The effect of varying rates of opportunities to respond to academic requests on the behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, 11, 239–248.
<https://doi.org/10.1177/10634266030110040501>
- Taie, S., & Goldring, R. (2020). *Characteristics of public and private elementary and secondary school teachers in the United States: Results from the 2017–18 National Teacher and Principal Survey. First Look (NCES 2020- 142rev)*. National Center for Education Statistics. <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020142rev>.
- Throll, D., & Ryan, B. A. (1976). Research note: Teacher attitudes toward behaviour modification. *New Zealand Journal of Educational Studies*, 11(1), 68–71.
- Tillery, A. D., Varjas, K., Meyers, J., & Collins, A. S. (2010). General education teachers' perceptions of behaviour management and intervention strategies. *Journal of Positive Behaviour Interventions*, 12(2), 86–102. <https://doi.org/10.1177/1098300708330879>
- Tincani, M. (2007a). Beyond consumer advocacy: Autism spectrum disorders, effective instruction, and public schools. *Intervention in School and Clinic*, 43(1), 47–51.
<https://doi.org/10.1177/10534512070430010601>

- Tincani, M. (2007b). Moving forward: Positive behavior support and applied behavior analysis. *The Behavior Analyst Today*, 8(4), 492–499. <http://dx.doi.org/10.1037/h0100635>
- Torres, A.C. (2014). “Are we architects or construction workers?” Re-examining teacher autonomy and turnover in charter schools. *Education Policy Analysis Archives*, 22(124), 1-26. <http://dx.doi.org/10.14507/epaa.v22.1614>
- U. S. Department of Education, Office of Elementary and Secondary Education. (2016). *Non-Regulatory guidance: Using evidence to strengthen education investments*. Washington, D. C. : U. S. Department of Education.
- U. S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2007). *Annual report to congress on the individuals with disabilities education act, part D*. Washington, D. C.: U. S. Department of Education.
- Vane, J. R. (1972). A school behavior modification program: Teacher attitudes a year later. *Behavior Therapy*, 3, 41–44. [https://doi.org/10.1016/S0005-7894\(72\)80050-9](https://doi.org/10.1016/S0005-7894(72)80050-9)
- Vavrus, F., & Cole, K. (2002). “I didn't do nothin’”: The discursive construction of school suspension. *The Urban Review*, 34(2), 8-111. <https://doi.org/10.1023/A:1015375215801>
- Vincent, C. G., Swain-Bradway, J., Tobin, T. J., & May, S. (2011). Disciplinary referrals for culturally and linguistically diverse students with and without disabilities: Patterns resulting from school-wide positive behavior support. *Exceptionality*, 19, 175–190. <https://doi.org/10.1080/09362835.2011.579936>
- Vincent, C., & Tobin, T. (2012). The relationship between implementation of school-wide positive behavior support and disciplinary exclusion of students from various ethnic backgrounds with and without disabilities. *Emotional and Behavioral Disorders*, 19, 217–232. <https://doi.org/10.1177/1063426610377329>

- Walker, H. M., Colvin, G., & Ramsey, E. (1995). *Antisocial behavior in school: Strategies and best practices*. Brooks/Cole.
- Wallace, J. M., Goodkind, S., Wallace, C. M., & Bachman, J. G. (2008). Racial, ethnic, and gender differences in school discipline among U.S. high school students: 1991-2005. *The Negro Educational Review*, 59(1-2), 47-62.
- Wehlage, G. G., & Rutter, R. A. (1985). Dropping out: How much do schools contribute to the problem? *Teachers College Record*, 87.
- Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*. National Staff Development Council.
<https://edpolicy.stanford.edu/sites/default/files/publications/professional-development-united-states-trends-and-challenges.pdf>
- Westbrook, L., & Saperstein, A. (2015). New categories are not enough: Rethinking the measurement of sex and gender in social surveys. *Gender & Society*, 29(4), 534-560.
- Westfall, P. H., Tobias, R. D., & Wolfinger, R. D. (2011). *Multiple comparisons and multiple tests using SAS* (2nd ed.). Cary, NC: SAS Publishing.
- Wheldall, K., & Congreve, S. (1980). The attitudes of British teachers towards behaviour modification. *Educational Review*, 32, 53-65.
<https://doi.org/10.1080/0013191800320105>
- Wright, P. & Wright, P. (2007). *Wrightslaw: Special education law (2nd ed.)*. Harbor House Law Press.

Appendix A: IRB



Institutional Review Board for the Protection of Human Subjects
Approval of Initial Submission – Exempt from IRB Review – AP01

Date: August 12, 2021

IRB#: 13657

Principal Investigator: Shelby L Dorsey

Approval Date: 08/12/2021

Exempt Category: 2

Study Title: First Learn, Then Do? A Look Into Secondary Teachers' Self-reported Knowledge And Attitudes Of Applied Behavior Analysis And Their Effect On Use In The Classroom

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research study and determined that it meets the criteria for exemption from IRB review. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

Note: Please ensure you add the consent form to the online survey before data collection. The consent form should appear as the first page of the survey, be a forced response item, and include appropriate skip logic.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the HRRP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Notify the IRB at the completion of the project.

If you have questions about this notification or using IRIS, contact the IRB @ 405-325-8110 or irb@ou.edu.

Cordially,

A handwritten signature in black ink that reads 'Aimee Franklin'.

Aimee Franklin, Ph.D.
Chair, Institutional Review Board

Appendix B: Recruitment Materials

Social Media post #1

Text only

ATTENTION MIDDLE AND HIGH SCHOOL TEACHERS

TELL US HOW YOU FEEL ABOUT APPLIED BEHAVIOR ANALYSIS!

Middle and High School Teachers: You have the opportunity to tell us how you feel about ABA in schools by participating in my voluntary research study exploring *Secondary Teacher Knowledge, Attitudes, and Use of Applied Behavior Analysis*.

If you are a middle or high school teacher and work for a school you are eligible to participate in a brief research survey. The survey is online and takes approximately 11 minutes.

Please contact Shelby Dorsey at shelbydorsey@ou.edu or 940.704.4856 or Dr. Kendra Williams-Diehm at klwd@ou.edu for more information.


The University of Oklahoma is an equal opportunity institution.

Graphic flyer

IRB Number: 13657
APPROVAL DATE: 08/12/2021

**Attention,
teachers!**

HELP US LEARN ABOUT
WHAT TEACHERS KNOW &
USE IN THEIR
CLASSROOMS



Middle and High School Teachers: You have the opportunity to tell us how you feel about ABA in schools by participating in my voluntary research study exploring Secondary Teacher Knowledge, Attitudes, and Use of Applied Behavior Analysis.

If you are a middle or high school teacher and work for a school, you can participate in a brief research survey. The 100% anonymous survey is online it takes approximately 11 minutes.

Survey link:
https://ousurvey.qualtrics.com/jfe/form/SV_01EK7EhwAWue3MG

Please contact Shelby Dorsey at shelbydorsey@ou.edu or 940.704.4856 or Dr. Kendra Williams-Diehm at klwd@ou.edu for more information.

Email To Participants

July 29, 2021

Re: Shelby Dorsey's Dissertation Research Survey

Dear teacher,

I am writing to let you know about an opportunity to participate in a voluntary research study exploring *Secondary Teacher Knowledge, Attitudes, and Use of Applied Behavior Analysis*. This study is being conducted as my dissertation research study.

The purpose of this study is to investigate secondary general and special education teachers' self-reported (1) knowledge of educational programming as it relates to ABA, (2) use regarding ABA strategies in the school setting, (3) attitudes toward ABA in the school setting, and (4) professional training related to ABA. The answers to the research questions framing this study are intended to provide clarity regarding knowledge, attitudes, and use of ABA principles in general and special secondary classrooms.

Participation includes an 11-minute online survey.

To participate, you must be: (a) a middle or high school teacher and (b) consent to the survey.

You can find the survey here: https://ousurvey.qualtrics.com/jfe/form/SV_01EK7EhwAWue3MG

If you would like additional information about this study, please contact Shelby Dorsey at shelbydorsey@ou.edu or at 940.704.4856 or Dr. Kendra Williams-Diehm at klwd@ou.edu.

Thank you for your consideration,

Shelby Dorsey, M.Ed., BCBA, LBA
Principal Investigator
Ph.D. Candidate
University of Oklahoma

Appendix C: Survey Instrument
Secondary Teacher's Knowledge, Attitudes, and Use of ABA

Secondary Teacher's Knowledge, Attitudes, and Use of ABA

Start of Block: Consent



Q21 Would you like to be involved in research at the University of Oklahoma?

I am Shelby Dorsey, a doctoral candidate at the University of Oklahoma, and I invite you to participate in my research project entitled First Learn, Then Do? A Look Into Secondary Teachers' Self-reported Knowledge And Attitudes Of Applied Behavior Analysis And Their Effect On Use In The Classroom. This research will be conducted entirely online at the University of Oklahoma, Norman Campus. You were selected as a possible participant because you met the following criteria: (a) teach in a middle or high school setting, (b) consent to participate in the study. Of teachers who meet the inclusion criteria, all will be able to participate. Please read this document and contact me to ask any questions that you may have BEFORE agreeing to take part in my research.

What is the purpose of this research? The purpose of this study is to investigate secondary general and special education teachers' self-reported (1) knowledge of educational programming as it relates to applied behavior analysis (ABA), (2) use regarding ABA strategies in the school setting, (3) attitudes toward ABA in the school setting, and (4) professional training related to ABA. The answers to the research questions framing this study are intended to provide clarity regarding secondary teacher's self-reported knowledge, attitudes, and use of ABA principles in both general and special education classrooms.

How many participants will be in this research? Approximately 400 secondary teachers

What will I be asked to do? If you agree to be in this research, you will complete an online survey.

How long will this take? Your participation will take approximately 11 minutes in total. The study is designed with the utmost respect for teachers limited free time and demanding schedules.

What are the risks and/or benefits if I participate? There are no risks or benefits for participating in this research.

Will I be compensated for participating? No

Who will see my information? In research reports, there will be no information that will make it possible to identify you. Data are collected via an online survey system with its own privacy and security policies for keeping your information confidential. No assurance can be made as to their use of the data you provide. Once the survey is closed, the data will be downloaded to a OneDrive, OU shared drive between staff/researchers in OU system. No identifiable information will be attached to the data set. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether you participated or not.

What will happen to my data in the future? After removing all identifiers, we might share your data with other researchers or use it in future research without obtaining additional consent from you.

Do I have to participate? No. If you do not participate, you will not be penalized or lose benefits or services unrelated to the research. If you decide to participate, you don't have to answer any questions and can stop participating at any time. Who do I contact with questions, concerns, or complaints?

If you have questions, concerns, or complaints about the research or have experienced a research-related injury, contact Shelby Dorsey at shelbydorsey@ou.edu or Dr. Kendra Williams-Diehm at klwd@ou.edu. You can also contact the University of Oklahoma – Norman Campus Institutional Review Board (OUOU-NIRBRB) at 405-325-8110 or irb@ou.edu if you have questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than the researcher(s) or if you cannot reach the researcher(s). Please print this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

- I agree to participate (1)
- I do not want to participate (2)

Skip To: End of Survey If Would you like to be involved in research at the University of Oklahoma? I am
Shelby Dorsey, a do... = 2

End of Block: Consent

Start of Block: Experience Demographics

X*

Q1.1 Total Years of Teaching Experience:

- 1-4 Years (1)
- 5-10 years (2)
- 10+ years (2)
-

X*

Q1.2 Are you currently teaching in a secondary school setting (grade 6 - grade 12)?

- Yes (1)
- No (2)
-

X*

Q1.3 Please check the type of secondary setting you have experience teaching in (check all that apply):

- General Education Setting (1)
- Special Education Setting (2)
- Other (3) _____
-

Q1.4 Please check your current teaching certifications (check all that apply):

- Early Childhood Education (1)
 - Elementary Childhood Education (2)
 - Special Education (3)
 - Secondary Subject Area (5)
 - Supplemental Certificate (Bilingual, ESL, Visual Impairments, Gifted & Talented/Exceptional Children) (6)
 - Administration certificate (Principal, Superintendent, School Psychologist Counselor, Reading Specialist etc.) (7)
 - Other All-Level Certificate (Art, ASL Health, PE, Music, Language, Technology) (8)
 - Certificate not reflected in the above choices. (9)
-

End of Block: Experience Demographics

Start of Block: Current Teaching Position



Q2.1 What is the geographic setting of your current school?

- Rural (1)
 - Midsize (2)
 - Suburban (3)
 - Urban (4)
 - Other (5) _____
-

Q2.2 Please check all the topics that you have had training or professional development as a teacher at your current district:

- Applied Behavior Analysis (ABA) (1)
 - Autism Spectrum Disorder (ASD) (2)
 - Behavior Management/ Behavior Intervention (3)
 - Direct Instruction (DI) (i.e. explicit, sequenced and scripted model of instruction) (4)
 - Multi-Tiered Systems of Support (MTSS) (5)
 - Response to Intervention (RTI) (6)
 - Discussed some of all of these in other courses but no specific coursework (7)
 - None of the above (8)
-



Q2.3 Does your current school implements a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.

- Yes (1)
- Unsure (3)
- No (2)



Q2.4 If no, have you ever taught in a school that implements a tiered system of support? Example: RTI, MTSS, PBS, and/or TEACCH etc.

- Yes (1)
- Unsure (3)
- No (2)

End of Block: Current Teaching Position

Start of Block: Personal Education Demographics

Q3.1 Highest Degree Completed:

- Bachelor's Degree (1)
- Master's Degree (2)
- Doctoral Degree (3)
- Other (4) _____
-

Q3.3 In your bachelor's degree coursework did you participate in a course that focused primarily on behavior management:

- Yes (1)
- No (2)
- Other (3) _____
-

Q3.4 Please check all the topics that you have taken designated course on as a part of your bachelor's degree:

- Applied Behavior Analysis (ABA) (1)
- Autism Spectrum Disorder (ASD) (2)
- Behavior Management/ Behavior Intervention (3)
- Direct Instruction (DI) (i.e. explicit, sequenced and scripted model of instruction) (4)
- Multi-Tiered Systems of Support (MTSS) (5)
- Response to Intervention (RTI) (6)
- Discussed some of all of these in other courses but no specific coursework (7)
- None of the above (8)
-

Q3.2 Are you currently enrolled in a graduate program or have a degree pending?

- Yes (1)
- No (2)
- Other (3) _____
-

Q3.5 Please check all the topics that you have taken coursework on as a part of your pending or completed masters or doctoral degree:

- Applied Behavior Analysis (ABA) (1)
- Autism Spectrum Disorder (ASD) (2)
- Behavior Management/ Behavior Intervention (3)
- Direct Instruction (DI) (i.e. explicit, sequenced and scripted model of instruction) (4)
- Multi-Tiered Systems of Support (MTSS) (5)
- Response to Intervention (RTI) (6)
- Discussed some of all of these in other courses but no specific coursework (7)
- None of the above (8)
-

Q3.6 Please check all the topics that you have taken coursework on but the coursework was not included in your pending or obtained degree. Example: you took an online course but it was not a part of a degree plan.

- Applied Behavior Analysis (ABA) (1)
- Autism Spectrum Disorder (ASD) (2)
- Behavior Management/ Behavior Intervention (3)
- Direct Instruction (DI) (i.e. explicit, sequenced and scripted model of instruction) (4)
- Multi-Tiered Systems of Support (MTSS) (5)
- Response to Intervention (RTI) (6)
- Discussed some of all of these in other courses but no specific coursework (7)
- None of the above (8)

End of Block: Personal Education Demographics

Start of Block: Applied Behavior Analysis



Q4.1 How knowledgeable do you rate yourself in the area of applied behavior analysis?

- I'm extremely knowledgeable. I understand and can explain most concepts of applied behavior analysis without hesitation and use them fluently in my classroom. (4)
- I'm moderately knowledgeable. I understand and can explain some concepts in applied behavior analysis in detail and use those concepts effectively in my classroom. (3)
- I'm slightly knowledgeable. I can explain applied behavior analysis broadly or with some hesitation, but I would not be able to use much of it in my classroom. (2)
- I'm not knowledgeable. I cannot explain applied behavior analysis, nor would I be able to use it in my classroom. (1)



Q4.2 During your teaching experience have you worked with a student who received applied behavior analysis (ABA) as an intervention for autism spectrum disorder inside or outside the classroom?

- Yes (1)
- No (2)
- Unsure (3)

Q4.3 Do you know anyone personally who participates in applied behavior analysis (ABA) as an intervention for autism spectrum disorder either as a recipient or a therapist?

- Yes, as a recipient. (1)
- Yes, as a therapist. (2)
- No (3)
- Other (4) _____

End of Block: Applied Behavior Analysis

Start of Block: Block 5



Q5.1 How you feel about ABA:

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The benefits of ABA have been exaggerated. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA has unlimited possibilities. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my personal education was taught using ABA methods. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA is unable to meet the demand of a complex social order. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The extra time involved in dispensing rewards is worth the improvement seen as a result of using ABA. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA causes too much friction among the children in the classroom. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ABA helps a child to learn how to cope with their environment. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More money should be spent on ABA programs. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA makes a child stop working when rewards are not available. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA strengthens moral development. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA will advance education to a higher level. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More people would support (favor) behavior analysis if they knew more about it. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ABA enables us to make the best possible use of our lives. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All teachers should be prohibited from using ABA in their	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

classrooms.
(14)

ABA is just another name for oppressive manipulation.
(15)

The added expense involved in purchasing rewards is not worth the eventual gain from a program of ABA.
(16)

ABA improves overall classroom conditions.
(17)

ABA aids learning.
(18)

ABA helps to improve relationships between children.
(19)

ABA helps to produce desired behavior.
(20)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 5

Start of Block: Block 6



Q6.1 How often do you use the following classroom interventions?

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)
I use small group instruction (less than or equal to four students) in order to meet individualized instructional goals. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use a motivation/incentive program based on positive reinforcement (including point, tally, and token economy systems). (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use students' preferences and/or obsessive interests as reinforcers for appropriate responses. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I delay instructional prompts in order to allow the student to attempt a correct response without assistance. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I systematically use prompts and prompt hierarchies including least-to-most intrusive prompts. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I withdraw or withhold attention or reinforcement in order to decrease inappropriate behaviors. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>I use modeling (including videotape modeling of self, peers, and adults) in order to teach imitation of new skills. (7)</p>	○	○	○	○	○
<p>I use punishment and/or aversive stimuli in order to decrease inappropriate behaviors. (8)</p>	○	○	○	○	○
<p>I use graphs to systematically document behaviors using charts and graphs in my classroom. (9)</p>	○	○	○	○	○
<p>To develop a behavior intervention, I first assess the function of a student's behavior. (10)</p>	○	○	○	○	○
<p>I re-organize the physical environment of my classroom to modify the behavior of students. (11)</p>	○	○	○	○	○
<p>I differentiate instructional activities successfully to modify the behavior of my students. (12)</p>	○	○	○	○	○
<p>I implement behavior intervention plans consistently for my students. (13)</p>	○	○	○	○	○

I use task analysis to break down assignments to make it easier for my students to complete. (14)

I take data on inappropriate behaviors before intervention. (15)

I use response cost programming (i.e. taking away desirable possessions, points, tokens, or privileges in planned, incremental steps following the occurrence of an undesirable behavior or failure to meet a specific goal). (16)



Q6.2 Rate the following statements:

	None at all (1)	A little (2)	A moderate amount (3)	A lot (4)	A great deal (5)
Small group instruction (less than or equal to four students) is effective to meet individualized instructional goals. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation/incentive programs based on positive reinforcement (including point, tally, and token economy systems) increase behavior. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students' preferences and/or obsessive interests are often powerful reinforcers for appropriate responses. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delaying instructional prompts allows the student to offer a correct response without assistance (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prompt hierarchies should be systematically used with students who need a prompt. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When you withdraw or withhold attention or reinforcement it will decrease inappropriate behaviors. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Using modeling (including videotape modeling of self, peers, and adults) is an effective way to teach imitation of new skills (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Punishment and/or aversive stimuli can be correctly used in order to decrease inappropriate behaviors (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important to systematically document behaviors using charts and graphs. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To develop a behavior intervention, plan the function of a student's behavior must be assessed (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The physical environment of the classroom can be re-organized to modify the behavior of students (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Differentiating instructional activities can modify the behavior of students (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is important that behavior intervention plans be implemented consistently (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Task analysis is used to break down an assignment to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

make it easier for the student to complete (14)					
It is necessary to take data on inappropriate behaviors before intervention (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behavior intervention plans can only address inappropriate behaviors (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 6

Appendix D: Referenced Survey Instruments
McCormick, 2011

General Instructions: Please attempt to answer all 47 questions; however, you can choose not to answer any questions that you are not comfortable with. The survey will take approximately 15 minutes to complete. All information will remain anonymous and confidential. None of the questions asked will be used to identify you or your school district. There are no codes used within this survey to link your email address to your completed survey. There are no questions that can identify you or your school district. This is not an exam and there is no right or wrong answer to any question. Please be as honest as possible. This survey is part of a research study; your participation is very much appreciated. Thank you.

Please answer questions #1 and #2 and then click on the "Next" button below.

1. Please check the teaching certifications you have earned (check all that apply):

- Certified ON or AFTER 2/2/04 in Early Childhood Education (Birth – Grade 2) and/or Childhood Education (Grades 1-6) and/or Generalist in Middle Childhood Education (Grades 5-9).
- Certified ON or AFTER 2/2/04 in Adolescent Education (Grades 7-12) in a subject area.
- Certified ON or AFTER 2/2/04 in Students with Disabilities (Birth – Grade 2 and/or Grades 1-6 and/or Grades 5-9).
- Certified ON or AFTER 2/2/04 in Students with Disabilities (Grades 7-12) in a subject area.
- Certified BEFORE 2/2/04 in Pre-Kindergarten and/or Nursery, Kindergarten, and Grades 1-6.
- Certified BEFORE 2/2/04 in Special Education (Pre K - 12).
- Certified BEFORE 2/2/04 in Grades 7-12 in a subject area.
- Other

2. Have you ever taught in any elementary (Kindergarten-Grade 6) Inclusion, Integrated, Co-teaching, Collaborative, or Direct Consult classroom?

- No
- Yes

Please answer questions 2a through 2d then click on the "Next" button below.

You indicated that you taught in an elementary (Kindergarten-Grade 6) Inclusion, Co-teaching, Collaborative, or Direct Consult classroom, please indicate, by checking No or Yes, the following:

	No	Yes
(2a) you taught in this type of classroom during the 2009/2010 school year.	<input type="checkbox"/>	<input type="checkbox"/>
(2b) there were general education students and students with an Individualized Education Program (IEP) in the classroom.	<input type="checkbox"/>	<input type="checkbox"/>
(2c) the special education and general education teacher were assigned to be together in the classroom with the students for at least one period a day.	<input type="checkbox"/>	<input type="checkbox"/>
(2d) How many years experience do you have teaching in an elementary (Kindergarten-Grade 6) Inclusion, Integrated, Co-teaching, Collaborative, or Direct Consult classroom?		
<input type="checkbox"/> 1 year		
<input type="checkbox"/> 2-3 years		
<input type="checkbox"/> 4-6 years		
<input type="checkbox"/> 7 or more years		

Please answer questions #3 through #7 then click on the "Next" button below.

3. Please check the type of elementary (Kindergarten – Grade 6) classrooms you have experience teaching in (check all that apply):

- General/Regular education classroom
- Self-contained classroom
- Resource room
- Other

Please check either No or Yes for questions #4 through #6:

	No	Yes
4. During your teaching experience have you worked with a student with Autistic Disorder, Asperger's Disorder, Pervasive Development Disorder-Not Otherwise Specified, or Autism Spectrum Disorder?	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you know anyone personally (not including any students you worked with) that has Autistic Disorder, Asperger's Disorder, Pervasive Development Disorder-Not Otherwise Specified, or Autism Spectrum Disorder?	<input type="checkbox"/>	<input type="checkbox"/>
6. Have you completed the New York State (N.Y.S.) 3-hour training course in autism?	<input type="checkbox"/>	<input type="checkbox"/>

7. Please check all the topics that you have taken coursework on or have received training in (not including the N.Y.S. 3-hour training course in autism):

- Autism Spectrum Disorder/Asperger's Disorder
- Applied Behavior Analysis/Behavior Modification
- Inclusion/Integrated/Co-teaching/Collaborative/Direct Consult teaching
- None of the above

Survey Instructions: For statements #8 through #23 use the following for your responses:

Strongly Disagree, Disagree, Slightly Agree, Agree, Strongly Agree. Please check your response to the statements as it relates to Autism Spectrum Disorder (ASD) which includes: autistic disorder, Asperger's disorder and pervasive development disorder not otherwise specified. Please click on to the "Next" button below when finished with statement #23. Thank you.

	Strongly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree
(8) I feel that students with ASD whose academic achievement is 1 year below the other students should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(9) I feel behavior management strategies are an effective way to decrease inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(10) Children with ASD are more intelligent than scores on standardized tests indicate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(11) I feel it is important that behavior intervention plans be implemented consistently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(12) I feel that students with ASD who are non-verbal should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(13) ASD is a developmental disorder.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(14) Reinforcement procedures can increase inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(15) I feel that students with ASD who disrupt activities should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(16) I feel it is important to take data on inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(17) More than half of the children diagnosed with ASD also have mental retardation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(18) Task analysis can be used to break down an assignment to make it easier for the student to complete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(19) I feel that students with ASD whose speech is difficult to understand should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(20) Children with ASD deliberately exhibit negativistic and noncompliant behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(21) The physical environment of the classroom can be re-organized to modify the behavior of students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(22) I believe that behavior intervention plans are an effective way to address social skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(23) To develop a behavior intervention plan the underlying root cause of a student's behavior must be assessed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey Instructions: For statements #24 through #39 use the following for your responses: Strongly Disagree, Disagree, Slightly Agree, Agree, Strongly Agree. Please check your response to the statements as it relates to Autism Spectrum Disorder (ASD) which includes: autistic disorder, Asperger's disorder and pervasive development disorder not otherwise specified. Please click the "Next" button below when finished with statement #39. Thank you.

	Strongly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree
(24) ASD is a neurological disorder.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(25) I feel that students with ASD whose academic achievement is 2 or more years below the other students should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(26) I feel it is important to systematically document behaviors using charts and graphs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(27) ASD exists in children and adults.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(28) Taking away something a student has previously earned improves behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(29) Most children with ASD outgrow it with the proper treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(30) I feel that students with ASD that need continual redirection to remain on task should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(31) I believe that behavior intervention plans should only address inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(32) Differentiating instructional activities can modify the behavior of students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(33) I feel that students with ASD who require an individual aide to help them transition to different settings should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(34) I believe behavior management strategies can be effective in all classroom settings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(35) Children with ASD can form social attachments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(36) Sufficient time to show improvement is necessary when implementing behavior management strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(37) I feel that students with ASD that engage in verbally inappropriate behaviors should be in inclusive classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(38) I feel it takes a significant amount of time to implement behavior management strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(39) It is more effective to continuously reinforce a behavior than to reinforce it some of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Survey Instructions: For statements #40 through #47 please indicate your response to the statements as it relates to how often you use or have used the technique/intervention/strategy by checking one of the following: Never, Rarely, Sometimes, Most of the time, Always. When finished with question #47 please click the "Next" button below.

	Never	Rarely	Sometimes	Most of the time	Always
(40) I use small group instruction (less than or equal to four students) in order to meet individualized instructional goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(41) I use motivation/incentive programs based on positive reinforcement (including point, tally, and token economy systems).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(42) I use students' preferences and/or obsessive interests as reinforcers for appropriate responses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(43) I delay instructional prompts in order to allow the student to anticipate a correct response without assistance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(44) I systematically use prompts and prompt hierarchies including least-to-most intrusive prompts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(45) I withdraw or withhold attention or reinforcement in order to decrease inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(46) I use modeling (including videotape modeling of self, peers, and adults) in order to teach imitation of new skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(47) I use punishment and/or aversive stimuli in order to decrease inappropriate behaviors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you would like to be entered in a raffle to win a Visa gift card worth \$200.00 - please enter contact information below - this contact information will only be used for the purpose of the raffle and will not be linked to your survey responses. You may leave just your first name and phone number, or personal e-mail address or any contact information you feel comfortable with leaving. If you win the drawing you will be contacted after December 15, 2010.

Thank you for taking the time to complete this survey. When finished, please click the "Done" button below.

Would you like to be entered into the raffle to win a \$200.00 Visa gift card?

- No
- Yes (if Yes please enter contact information in box below)

Appendix D: Referenced Survey Instruments
The Incredible Years, 2012

Teacher Classroom Management Strategies Questionnaire Incredible Years

Teacher's Name: _____

In completing this questionnaire, think about your general strategies for managing your entire classroom and not a specific child.

A. Managing Classroom Behavior

1. How confident are you in managing current behavior problems in your classroom? 1 2 3 4 5 6 7
2. How confident are you in your ability to manage future behavior problems in your classroom? 1 2 3 4 5 6 7
3. How confident are you in your ability to promote students emotional, social and problem solving skills? 1 2 3 4 5 6 7

Very unconfident
Unconfident
Somewhat unconfident
Neutral
Somewhat confident
Confident
Very confident

B. Specific Teaching Techniques

In this section we'd like to get your idea of how often you use the following techniques, and how useful you find each one for managing your classroom.

	Frequency				Usefulness				
	Rarely/Never	Sometimes	Half the time	Often	Rarely/Never	Sometimes	Half the time	Often	Very Often
1. Coach positive social behaviors (helping, sharing, waiting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Describe or comment on bad behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Reward targeted positive behaviors with incentives (e.g., stickers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Praise positive behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Use Time Out (Time Away to calm down) for aggressive behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Single out a child or a group of children for misbehavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Use physical restraint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Reprimand in a loud voice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. In-house suspension (send to Principal's office for misbehavior)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Warn or threaten to send child out of classroom if s/he doesn't behave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Send child home for aggressive or destructive misbehavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Call parents to report bad behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Ignore misbehavior that is non-disruptive to class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Use verbal redirection for child who is disengaged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Use problem-solving strategy (e.g., define problem, brainstorm solutions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Use anger management strategy for self (e.g., deep breaths, positive self-talk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Prepare children for transitions with predictable routine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Use group incentives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Use special privileges (e.g., special helper, extra computer time)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Set up individual incentive program (e.g., stickers, prizes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Give clear positive directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Warn of consequences for misbehavior (e.g., loss of privileges)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Use clear classroom discipline plan and hierarchy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Use emotion coaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Use nonverbal signals to redirect child who is disengaged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Use persistence coaching (focusing, being patient, working hard)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Send home notes (or frowny faces) to report problem behavior to parent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Send notes/happy grams home about positive behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please turn page and complete the other side

29. Call child after a bad day	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
30. Take a student interest survey	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
31. Call parents to report good behavior	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
32. Model self-regulation strategies for students	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
33. Teach specific social skills in circle time	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
34. Use imaginary play/drama, stories and puppets to teach problem solving	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
35. Set up problem solving scenarios to practice prosocial solutions	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
36. Promote respect for cultural differences in my classroom	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
37. Teach children to ignore disruptive behavior	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
38. Teach children anger management strategies (Turtle technique, calm down thermometer)	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5

C. Working with parents

In this section we'd like to get your idea of how often you use each of the following approaches.

Please mark the response that most clearly describes your interactions.

	Never	1 time per year	2-3 times per year	Once a month	Once a week	Daily
1. Promote parent involvement in classroom	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
2. Teach parent skills to enhance classroom learning at home (e.g., coaching, reading, use of incentives)	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
3. Collaborate with parents on a home-school behavior plan and share goals for student	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
4. Hold extra parent conferences for particular problems	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
5. Talk with parents about special activities to do with child at home	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
6. Develop teacher-parent partnerships	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
7. Send home Teacher-to-Parent Communication letters or newsletters	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
8. Ask parents to share ways to incorporate their cultural history/stories/traditions in the classroom	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
9. Make Home Visits	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
10. Hold parent support groups	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

D. Planning and Support

In this section we'd like to get your idea of how often you use each of the following Incredible Years (IY) Strategies.

Please mark the response that most clearly describes your approach.

	Never	1 time per year	2-3 times per year	Once a month	Once a week	Daily
1. Use IY self-reflective inventories to plan personal teaching goals	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
2. Review my progress in reaching goals for individual student behavior plans	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
3. Review my discipline hierarchy according to the student's developmental ability	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
4. Collaborate with other teachers for solutions and support	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
5. Give support to other teachers	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
6. Read the IY classroom management book	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
7. Manage my stress level utilizing positive cognitive strategies	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6
8. Encourage a positive school community (e.g., including input from teacher aides, sharing successes in the classroom with the principal)	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6

Thank you
 © 2012 The Incredible Years, Inc. All rights reserved. "THE INCREDIBLE YEARS" and all related trademarks are owned by The Incredible Years, Inc. USA. Limited use of trademarks and copyrighted material is by license from The Incredible Years, Inc. All program materials must be ordered through <http://www.incredibleyears.com>

Appendix D: Referenced Survey Instruments
Randazzo, 2011

1. Approximately how many years have you been teaching? _____
2. What is your gender? Male Female
3. What academic degree(s) have you obtained? (Please check all that apply)
 Bachelor's Master's Doctorate Other _____
4. What grade(s) do you teach? (Please check all that apply)
 Kindergarten 1st 2nd 3rd 4th 5th
5. What type of population do you primarily teach? General Education Special Education
6. In your undergraduate or graduate education, did you take a course that focused primarily on behavior management? Yes No
7. Please rate the following behavior management strategies according to how knowledgeable you are about them and the frequency with which you use them in your classroom.

Positive Reinforcement – Social (Teacher gives student attention/praise when student demonstrates positive behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Positive Reinforcement – Preferred Activity (Student earns preferred activity, such as computer time or class helper, when he/she demonstrates positive behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Positive Reinforcement - Token Economy (When student demonstrates positive behavior, he/she earns tickets, points, etc. that can later be traded in for larger prizes.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Group Contingency (Rewards for class depend on one student or small group of students demonstrating positive behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Extinction (Teacher stops his/her action(s) that are contributing to student's inappropriate behavior – i.e. if attention is rewarding to student, teacher ignores student.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Punishment (Teacher verbally reprimands student or takes away a privilege when student's behavior is inappropriate.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Reinforce Incompatible Behavior (Teacher rewards student for demonstrating positive behavior(s) that are opposite of student's inappropriate behavior – i.e. student is rewarded for staying in seat when he/she often leaves seat.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Differential Reinforcement (Teacher rewards student's positive behavior while simultaneously not rewarding student's inappropriate behavior – i.e. teacher praises student for looking at blackboard/attending while ignoring the same student kicking his/her desk.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Positive Reinforcement – Food (Student earns candy/food for demonstrating positive behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Shaping (Teacher rewards student for reaching small steps toward positive behavior; student continues to be rewarded until he/she learns behavior completely.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Behavior Contract (Student and teacher decide together what behavior(s) the student will work on and the rewards he/she will earn.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Modeling (Teacher demonstrates the positive behavior(s) that he/she wants student to learn/adopt.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Prompting/Fading (Teacher prompts/guides student to learn positive behavior and then slowly takes away this guidance as student demonstrates the positive behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Time Out (Student is temporarily separated from peers/situation following inappropriate behavior.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

Overcorrection (When student's behavior is inappropriate, teacher requires student to practice more positive behavior – i.e. student who is rude to peer is required to practice giving his/her peer at least one compliment every day.)

Not at all Knowledgeable <input type="checkbox"/>	Slightly knowledgeable <input type="checkbox"/>	Somewhat knowledgeable <input type="checkbox"/>	Knowledgeable <input type="checkbox"/>	Very knowledgeable <input type="checkbox"/>
Never use <input type="checkbox"/>	Seldom/rarely use <input type="checkbox"/>	Sometimes use <input type="checkbox"/>	Often use <input type="checkbox"/>	Very often use <input type="checkbox"/>

8. In your attempts to learn to use the above behavior management strategies, how important were the following?

	Not at all important	Slightly important	Somewhat important	Important	Very important
a) Professional development activities (i.e. workshops, conferences)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Discussion/working with colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) University coursework (graduate/undergraduate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Student teaching experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Independent reading (i.e. books, journal articles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. How effective were the following instructional techniques in supporting your learning about the above behavior management strategies?

	Not at all effective	Slightly effective	Somewhat effective	Effective	Very effective	My training did not include this technique
a) Reviewing case studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Listening to lectures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Reading books/articles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Observing mentors/cooperating teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Practicing and receiving feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Reflective journal writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Watching and reflecting on videotapes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Role-playing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Completing group projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Completing portfolios	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How frequently are the following conditions barriers to your use of behavior management strategies?

	Never a barrier	Seldom/rarely a barrier	Sometimes a barrier	Often a barrier	Very often a barrier
a) Lack of knowledge/skill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Lack of support from administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Lack of feedback/guidance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Lack of supplies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Colleagues do not support use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Not consistent with my general approach to teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Takes too much time and effort	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Did not believe it would work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Knew other teachers who had tried it and thought it was ineffective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Thought it would not help me achieve my work goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Believed it was not appropriate for the students in my class(es) and their specific problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix D: Referenced Survey Instruments

Musgrove, 1974

A SCALE TO MEASURE ATTITUDES TOWARD BEHAVIOR MODIFICATION 393

Please do not put your name or any other identifying information on this questionnaire. *YOUR RESPONSES ARE TO BE KEPT ANONYMOUS.*

We are interested in your feelings about the following statements concerning Behavior Modification. Read each statement carefully and decide how you feel about it. *PLEASE* respond to each item whether or not you have had direct experience with Behavior Modification.

If you strongly agree with the statement, encircle SA below the statement.

If you agree, encircle A below the statement.

If you are undecided or uncertain, encircle ? below the statement.

If you disagree, encircle D below the statement.

If you strongly disagree, encircle SD below the statement.

- *1. The benefits of Behavior Modification have been exaggerated.
 SA A ? D SD
2. Behavior Modification has unlimited possibilities.
3. I wish my education was accomplished under Behavior Modification methods.
- *4. Behavior Modification is unable to meet the demands of a complex social order.
5. The extra time involved in dispensing rewards is worth the improvement seen as a result of using Behavior Modification.
- *6. Behavior Modification causes too much friction among the children in the classroom.
7. Behavior Modification helps a child to learn how to cope with his environment.
8. More money should be spent on Behavior Modification programs.
- *9. Behavior Modification makes a child stop working when rewards are not available.
10. Behavior Modification strengthens moral development.
11. Behavior Modification will advance education to a higher level.
12. More people would support (favor) Behavior Modification if they knew more about it.
13. Behavior Modification enables us to make the best possible use of our lives.
- *14. All teachers should be prohibited from using Behavior Modification in their classrooms.
- *15. Behavior Modification is just another name for tyranny.
- *16. The added expense involved in purchasing rewards is not worth the eventual gain from a program of Behavior Modification.
17. Behavior Modification improves overall classroom conditions.
18. Behavior Modification aids learning.
19. Behavior Modification helps to improve relationships between children.
20. Behavior Modification helps to produce desired behavior.
- * These items are negative and their weights must be reversed for purposes of scoring.
 The same response alternatives are used with all items.

Appendix D: Referenced Survey Instruments
Martin & Baldwin, 1993

APPENDIX C
INVENTORY OF CLASSROOM MANAGEMENT STYLE

Directions: Please circle the one statement (either a or b) for each item that best fits your belief or describes what you would do in your own classroom. There are no right or wrong answers. If you disagree with both options, circle the one you disagree with the least. If you agree with both options, circle the one that you agree with the most. Answer every question one way or another. Do not skip any.

(NOTE: * = Items omitted from original scale.)

SUB-SCALE A: PERSON DIMENSION

1.
 - a. Student's creativity and self-expression should be encouraged and nurtured as much as possible. (1)
 - b. Teachers must set guidelines for students in order for them to understand the importance of living by rules and laws. (2)
2.
 - a. Although students do think, the decisions they make are not yet fully rational and moral. (2)
 - b. Student's inner emotions and decision-making processes must be considered legitimate and valid. (1)
3.
 - a. My responsibility as a teacher is to aid students' self-discovery. (1)
 - b. My responsibility as a teacher is to reward those students who do well. (2)
- *4.
 - a. Students must be allowed the freedom to pursue their own interests and to succeed in those areas. (1)
 - b. If students work hard and follow my directions, they will be successful in school. (2)
- *5.
 - a. A class is made up of unique individuals; students will develop their own ways of working and playing with each other. (1)
 - b. My responsibility as a teacher is to direct students in how to work together cooperatively toward academic goals. (2)

6.
 a. I encourage students to treat each other with courtesy and respect. (1)
 b. I would never allow students to treat each other with anything other than friendliness, courtesy, and respect. (2)

SUB-SCALE B: INSTRUCTION DIMENSION

7.
 a. The assignment at hand determines how the space should be used. (1)
 b. I would be annoyed if a student sat at my desk without permission. (2)
8.
 a. Generally, I think it's best to assign students to specific seats in the classroom. (2)
 b. Generally, I think it's best to allow students to select their own seats. (1)
9.
 a. The teacher knows best how to allocate classroom materials and supplies to optimize learning. (2)
 b. Students in my classroom may use any materials they wish during the learning process. (1)
10.
 a. I specify a set time for each learning activity and try to stay within my plans. (2)
 b. The time spent on each learning activity can only be determined by the students' needs and interests. (1)
11.
 a. During a lesson on the Bill of Rights, a student begins to tell a story about a neighbor who was falsely arrested for selling drugs. I would most likely remind the student gently but firmly that the class has to finish the lesson before the end of the class period. (2)
 b. During a lesson on the Bill of Rights, a student begins to tell a story about a neighbor who was falsely arrested for selling drugs. I would most likely let the student tell the story so (s)he could find the association between the lesson objective and the incident. (1)
- *12.**
 a. Students need the structure of a daily routine that is organized by the teacher. (2)
 b. Responsibility and self-discipline are fostered when students create their own daily routines. (1)

13.
a. When moving from one learning activity to another, I will most likely allow students to progress at their own rate since we all learn at a different pace. (1)

b. When moving from one learning activity to another, I will most likely give students directions regarding how to proceed. (2)

*14.

a. When a student is repeatedly off-task, I will most likely remove a privilege such as recess or require detention. (2)

b. When a student is repeatedly off-task, I will most likely ask a question such as, "Chris, why aren't you working?" (1)

*15.

a. During seatwork, it is important to circulate around the room in order to manage students' learning behavior. (2)

b. It is not necessary to circulate during seatwork since students can monitor their own learning behavior and seek out the teacher if there are questions. (1)

16.

a. Teachers should conference with students regarding the quality of their work. (1)

b. Teachers should provide feedback regarding the quality of performance. (2)

17.

a. The teacher should decide what topics the students study and the tasks used to study them. (2)

b. Learning becomes meaningful when students have input regarding learning topics and tasks. (1)

18.

a. The primary purpose of homework is to provide supplementary activities that meet the students' needs and interests. (1)

b. The primary purpose of homework is to reinforce skills learned in the classroom. (2)

SUB-SCALE C: DISCIPLINE DIMENSION

19.

a. If students agree that a classroom rule is unfair, then I should explain the reason for the rule. (2)

b. If students agree that a classroom rule is unfair, then the rule should be replaced by a rule that students think is fair. (1)

- 20.
- a. During the first week of class, I will most likely announce the classroom rules and inform students of the penalties for disregarding the rules. (2)
 - b. During the first week of class, I will discuss class rules with the students. (1)
- 21.
- a. Rules are important because they shape the student's behavior and development. (2)
 - b. Class rules stifle the student's ability to develop a personal moral code. (1)
- 22.
- a. When one of the more conscientious students does not complete an assignment on time, I will most likely assume that the student has a legitimate reason and that the student will turn in the assignment when it is completed. (1)
 - b. When one of the more conscientious students does not complete an assignment on time, I will most likely remind the student that the assignment is late. (2)
- 23.
- a. When students behave appropriately, I will most likely comment on their good behavior and provide verbal encouragement such as, "You've been working well for over an hour!" (1)
 - b. When students behave appropriately, I will most likely provide a reward of some kind such as stickers or points toward a party. (2)
- 24.
- a. When a student disrupts class or bothers other students, I will most likely say nothing but look directly at the student and frown. (1)
 - b. When a student disrupts class or bothers other students, I will most likely tell the student to be quiet and request a conference with the student at a more convenient time. (2)

Martin et al., 2007
Appendix D: Referenced Survey Instruments

Attitudes & Beliefs on Classroom Control Inventory- Revised and Revisited

TABLE 1

All Items of the Attitudes & Beliefs on Classroom Control Inventory- Revised by Dimension

	IM	PM	BM	Mean	Std. Deviation	Corrected Item-Total Correlation
14. I believe students will be successful in school if allowed the freedom to pursue their own interests.*		0.56		3.49	0.78	0.51
18. I believe teachers should give students freedom so they will develop their own ways of interacting with each other.*		0.59		1.96	0.81	0.52
20. I do not specify a set time for each learning activity because that can only be determined by the students.*		0.42		2.22	1.15	0.35
27. When moving from one learning activity to another, I will allow students to progress at their own rate.*		0.44		1.60	0.75	0.38
29. I believe student's emotions and decision-making processes must always be considered fully legitimate and valid.*		0.41		1.81	0.82	0.38
30. I believe students can manage their own learning behavior during seatwork.*		0.41		2.34	0.97	0.32
39. I believe students should choose the learning topics and tasks.*		0.50		2.10	0.94	0.44
43. Students in my classroom are free to use any materials they wish during the learning process.*		0.44		1.67	0.81	0.39
45. I believe friendliness, courtesy, and respect for fellow students is something that students have to learn first-hand through free interaction.*		0.45		2.55	0.95	0.36
8. I believe students should create their own daily routines as this fosters the development of responsibility.*		0.45		3.60	0.68	0.38
10. When a student is repeatedly off-task, I will most likely remove a privilege or require detention.	0.40			1.27	0.58	0.38
11. The classroom runs more smoothly when the teacher assigns students specific seats.	0.44			2.17	0.88	0.37
16. During the first week of class, I will announce the classroom rules and inform students of the penalties for disregarding the rules.	0.58			1.72	0.85	0.50
19. The teacher knows best how to allocate classroom materials and supplies to optimize learning.	0.53			2.41	1.18	0.47

* = scoring reversed for these items

Attitudes & Beliefs on Classroom Control Inventory- Revised and Revisited

23. When a student bothers other students, I will immediately tell the student to be quiet and stop it.	0.49			2.42	0.76	0.40
25. While teaching a lesson on library skills, a student begins to talk about the research she is doing for her book report. I would remind the student that the class has to finish the lesson before the end of the class period.	0.42			1.80	0.86	0.37
26. I believe teachers should require student compliance and respect for law and order.	0.49			1.69	0.74	0.47
38. I believe students will be successful in school if they listen to the adults who know what's best for them.	0.50			2.54	1.03	0.44
48. I believe class rules are important because they shape the student's behavior and development.	0.42			1.85	0.82	0.40
7. If students believe that a classroom rule is unfair, I may explain the reason for the rule but would not change it.	0.50			2.07	0.83	0.39
Items deleted from ABCC-R.						
1. Student interaction should be kept to a minimum because it can easily lead to disruption in the classroom.				1.40	0.59	
12. I believe general classroom guidelines are preferable to strict rules.*				2.22	0.93	
13. I believe teachers should provide clear, specific feedback regarding the quality of student's work.				1.29	0.63	
15. I believe the teacher should decide what topics the students study and the tasks used to study them.	0.37			3.00	0.93	
17. I believe the primary purpose of homework is to provide supplementary activities that enhance student's learning.*				2.37	0.81	
2. I believe teachers should nurture and encourage student independence and self-expression.*				2.54	0.86	
21. I believe that friendliness, courtesy, and respect for fellow students is something that teachers should demand.				2.80	0.87	
22. When a student does not complete an assignment on time, I will assume that the student has a good reason.*		0.37		2.31	1.02	
24. I believe class rules stifle the student's ability to develop a personal moral code.*				2.11	0.90	

* = scoring reversed for these items

Attitudes & Beliefs on Classroom Control Inventory- Revised and Revisited

28. I would be annoyed if a student sat at my desk without permission.				1.45	0.64
3. I believe the teacher should direct the students' transition from one learning activity to another.	0.38			2.45	0.79
31. If students agree that a classroom rule is unfair, then I would replace it with one that students think is fair.*	0.38			2.26	1.00
32. Rewarding those students who behave appropriately is a good strategy for preventing misbehavior.			0.49	2.26	1.12
33. I believe students need the structure of a daily routine that is organized and implemented by the teacher.	0.40		0.44	2.23	0.83
34. When a student is repeatedly off-task, I will most likely talk with the student to find out why.*				2.74	0.77
35. I allow students to select their own seats.*				1.89	0.77
36. When students behave appropriately, I will provide a reward of some kind such as points toward a party or free time.			0.57	2.54	1.16
37. I believe students should judge the quality of their own work rather than rely on what the teacher tells them.*		0.39		2.97	0.95
4. If a student sat at my desk, it would be okay.*				1.82	1.04
40. During the first week of class, I will allow the students to come up with a set of classroom rules.*	0.41		-0.41	1.87	0.79
41. I believe the primary purpose of homework is to provide drill and practice of skills learned in the classroom.				2.82	0.95
42. I believe that students need direction in how to work together.			0.40	2.36	0.84
44. I specify a set time for each learning activity and try to stay within my plans.	0.35			2.88	0.86
46. When a student does not complete an assignment on time, I will deduct points from their grade.	0.39			2.74	1.07
47. When a student bothers other students, my first reaction would be to say nothing and let the students work it out themselves.*				2.21	0.96
49. During a lesson on the Bill of Rights, a student begins to tell a story about a neighbor who was falsely arrested for selling drugs. I would let the student tell the story and relate it to the lesson.*				3.11	0.92

* = scoring reversed for these items

Attitudes & Beliefs on Classroom Control Inventory- Revised and Revisited

5. I believe the teacher should keep in mind that student's emotions and decision-making processes are not yet fully developed.				3.32	0.87
50. Teacher planned student interaction (such as student group work and class discussion) fosters appropriate student behavior.*				1.63	0.69
6. I believe it's important to continuously monitor students' learning behavior during seatwork.			0.46	2.65	0.82
9. When students behave appropriately, I will most likely do nothing since good behavior is its own reward.*				2.08	0.97

* = scoring reversed for these items