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The efficacy of an academic behavior assessment tool for the functional behavior assessment process

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THE EFFICACY OF AN ACADEMIC BEHAVIOR ASSESSMENT TOOL FOR THE FUNCTIONAL BEHAVIOR ASSESSMENT PROCESS

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DEDICATION

I would like to dedicate this dissertation to my Dad, Glen J. Suel (1949-2013). I did it DAD!!!!! Thank you for your love, support and always KNOWING I would do it.

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ABSTRACT

Since the reauthorization of Individuals with Disabilities Education Act in 1997 and then later, the Individuals with Disabilities Education Improvement Act in 2004, students that display behaviors that impede learning require that a Functional Behavior Assessment (FBA) be conducted for the development of a behavior plan that is focused on Positive Behavior Support (PBS) strategies. The traditional FBA measures and analyzes environmental variables that trigger problem behaviors; however, it does not measure adaptive academic behavior skills that are needed for academic success in the classroom environment. This study's literature review examines the reasons for incorporating a strength-based model for measuring academic behaviors for a more comprehensive analysis of a student's strengths as well as deficits. Adaptive/academic behavior skill measurements are also appropriate for identifying and teaching replacement skills. This study examined an academic behavior tool that helps educators to identify both the student's adaptive academic behavior strengths as well as behavior deficits during the FBA process. In addition, psychometric properties for the statistical relationships between behavior variables were measured for consistency, standardization, and better overall assistance for the classroom educator.

The findings of this analysis support that the psychometrics properties of the academic behavior assessment tool meets the measurements for a reliable and valid tool. The Alpha Cronbach Reliability test measured .96. The principle components factor analysis with a varimax rotation was measured. The factor analysis identified the connections between the studies demographic variables, and the relationship that existed amongst the 25 survey items of the tool. The eigenvalues greater than 1.0 resulted in a four-factor solution that accounted for

69.81% of the variance. Given that the first factor was six times or more times larger than any other factor, a decision to retain only one factor and retain all 25 items to create a total score.

Based on the psychometric measurements of this study, this academic behavior assessment tool possibly will help classroom educators address problem behaviors by identifying the appropriate replacement skills needed for the development of the BIP, interventions, and the FBA process. Additional findings suggest that, used as a screening tool, it may identify skill deficits with preschool-aged children, primary students, special education, and the RtI model, to connect both the academic and behavioral components needed to be taught for academic success.

Chapter One: Purpose

The federal legislation, Individuals with Disabilities Education Act (IDEA) was established and reauthorized in June, 1997 by President Bill Clinton. This law created the most significant changes to special education since the Education for All Handicapped Children Act of 1975 (EAHCA, 1975). Parts of the federal legislation focused on appropriate discipline procedures and addressing behavior problems for students whose disability may impact learning, their personal safety, and others (Yell & Katsiyannis, 2000). The most challenging and protested of the provisions in this law addressed the behavior discipline component of students identified as qualifying for special education (Waguespack, Vaccaro, & Continere, 2006). Much debate was initiated over IDEA. Lawmakers tried to make compromises in the re-authorization of this bill, which led to a watering down and increased vagueness of the definitions of the Functional Behavior Assessment (FBA) in IDEA (1997). This allowed for multiple interpretations and inconsistencies amongst lawmakers, states, school districts, and educators.

In 2004, President George W. Bush signed the revision of IDEA as the Individuals with Disabilities Education Improvement Act or IDEIA. This revision aligned IDEA with other pieces of legislation, such as the No Child Left Behind Act (NCLB, 2002) to be more consistent and to utilize the same terminology. IDEIA also established increased accountability and progress monitoring for students identified with disabilities through the Individual Education Plan (IEP; Yell & Katsiyannis, 2000). The IEP process identifies the strengths and deficits of the student's performance both academically and behaviorally. The behavior component identifies behaviors that impede academic success.

Both IDEA (1997) and IDEIA (2004) are federal laws that, when developed, were purposely written for states and school districts to establish their own individual protocols and

processes for identifying special education students' behavior needs (Drasgow &Yell, 2001). According to Scott, Alter, and McQuillan (2010), "Unfortunately, highly technical terminology and a poorly defined process have turned a valuable technology into more necessary bureaucratic paperwork in its widespread implementation" (p. 87).

The mandate does not define FBA. This poses a problem for educators because terms that are not defined can lead to vague and unproductive outcomes (O'Shea & Drayden, 2008). IDEIA stated that the FBA be conducted; however, a systematic process in terms of *how to* conduct an FBA was not established for educators to follow (Katsiyannis, Conroy, & Zhang, 2008).

The State of California has interpreted NCLB (2002) and IDEIA (2004) under the Hughes Bill (California Assembly Bill 2586, 1990) ,which was enacted as Assembly Bill 2586 in 1990. Sections 3001 and 3052 have addressed the method by which districts must serve students identified under Special Education that have serious behavior problems. The Hughes Bill defines a serious behavior problem as one that:

1. Causes students to engage in self-injurious or assaultive, or
2. Leads students to cause serious property damage, or
3. Is severe, pervasive, and maladaptive.

Mandated federal laws, such as IDEA (1997) and IDEIA (2004), have specified that school sites and districts must conduct an FBA. Although no longer in force in the State of California since July 1, 2013, the Hughes Bill (California Assembly Bill 2586, 1990), legislated that districts in California conduct a Functional Analysis Assessment (FAA) to develop and implement a Function-Based Intervention Plan for students with challenging behaviors and specify that students that have behaviors that impede their academic success or the success of others require a FAA to analyze the problem behavior and assess the most appropriate

replacement behavior based on Positive Behavior Support (PBS). Both the FBA and the FAA results provide a Behavior Intervention Plan (BIP) that has identified appropriate replacement behaviors for the target behavior and build positive behavior plans into the behavior change process, offering proactive and teaching strategies instead of punitive methods of discipline (Van Acker, Boreson, Gable, & Potterton, 2005).

When the Federal Laws are applied and implemented within each individual state, districts, and classrooms there seems to be much confusion with how to appropriately conduct a FBA. The terminology between laws, strategies, fields of study, research, and different theoretical perspectives use different verbiage and inconsistent definitions. This confusion and lack of direction with the laws complicate the interpretation and the procedures with addressing student's problem behavior.

Traditionally, the FBA process examines the function and the environmental variables that maintain a problem behavior. Although an analysis of the target behavior is needed to collect baseline performance, the FBA's primary approach is based in the investigation of the student's weaknesses or deficits, using a Problem-Solving Approach (Pathology/Deficit-Based Model) to study maladaptive behaviors. The traditional investigation is pathology-based rather than examining strength or positive-based skills (Strengths-Based Model) that may yield a more comprehensive assessment of the student's strengths and academic behavior variables needed for educational success. Current practices investigate what a student lacks, or his or her deficits. This literature review examines research that explores the benefits of measuring a student's overall academic behavior skills (strengths and deficits) during the FBA process for a more comprehensive assessment of the student's behavior abilities in the classroom environment (Cressey, 2010). IDEA (1997) stated that the "IEP Team shall in the case of a child whose

behavior impedes the child's learning or that of others, consider the use of positive behavioral intervention and supports, and other strategies to address that behavior" (20 USC §1414 (d)(3)(B) (i)). The FBA is the procedure that identified in mandated laws to address problem behaviors, and is to be paired with PBS for designing positive intervention plans (Katsiyannis et al., 2008). The current measurement of the FBA only addresses the pathology-based behaviors, contradicting the mandates requiring that PBS, a student-centered, holistic, strength-based model, be included for students' overall success. Traditionally, due to the focus of measuring only the student's maladaptive/target behaviors, educators may need to use a formative behavior assessment tool to help them identify the student's strengths and deficits regarding academic behavior skills for a more comprehensive examination during the FBA process.

Statement of Problem

During the FBA process, assessment tools and analysis often require the assessor to possess specialized credentials or training in behavior analysis to effectively address problem behaviors. Unfortunately, the limited behavioral training and knowledge that most classroom educators have received leaves them struggling to address behavior needs within their own classroom environment. Many educators lack the guidance of a comprehensive FBA examination for the development of a quality BIP. In the classroom, many educators are teaching and must face challenging behaviors without the proper training in behavior analysis that is needed to develop and implement behavior plans during the behavior change process (Browning-Wright, Mayer, Cook, Crews, & Kraemer, 2007). For a quality BIP to be developed, the educator must identify the (a) maladaptive behavior, (b) function of that behavior (c) functional equivalent replacement behavior (FERB) or skill, (d) and intervention. In addition, the educator must implement the interventions appropriately in order to change the student's behavior. The lack of

systematic identification of problem behavior and evaluating the success of interventions can leave the teacher ineffective in terms of teaching FERBs and maintaining classroom management (Van Acker et al., 2005).

Empirical research and practices are necessary to resolve the discrepancy between what is mandated by law and the implementation of a technical process. This discrepancy poses a challenge to the classroom educator who maybe limited in skills, knowledge, and training in how to execute a behavior change process in the classroom environment. Without proper guidance and tools, that are in line with both federal mandates and practical classroom application for behavior change, educators will continue to use default methods that are contrary to and out of compliance with the PBS process and IDEA.

Purpose and Nature of Study

The purpose of this study was to measure the factor structure of an academic behavior assessment tool that identifies the appropriate replacement skills for behaviors that impede academic success for the development of the BIP during the FBA process. The purpose of identifying a replacement skill is to teach the student what are more appropriate ways to act in society, the classroom, with others, and for learning. When students display inappropriate behaviors it is their best attempt to getting their needs met. By teaching the student functionally appropriate replacement skills, the student learns a more effective, efficient, and appropriate way of problem-solving. The challenge for educators is to identify the function of that behavior, identify and pair the skill that is needed to replace that behavior and create a plan that utilizes appropriate interventions.

Research Question

This study explored the following research question: What is the factor structure among the 25 survey items from the Academic Behavior Assessment Tool? This was done using principal components factor analysis, selecting eigenvalues greater than 1.0 and then using a varimax rotation to simplify the factor structure.

Significance of the Study

Theoretical significance. This study examined the effectiveness of an academic behavior assessment tool that will help classroom educators address behaviors that are impeding academic success during the FBA process. The theoretical foundations of this dissertation are grounded in ABA and PBS, bringing together both theoretical perspectives to an applicable school-based assessment and intervention practices.

ABA's foundation is based on the theory of behaviorism with an emphasis on teaching students socially significant behaviors as a replacement for maladaptive behaviors that impede academic success (Cooper, Heron, & Heward, 2007). In this study, socially significant behaviors are identified as the adaptive academic behavior skills needed for students to function appropriately in the classroom environment.

Behaviorism is a school of psychology founded by John B. Watson that studies and interprets behavior based on observable and measurable responses. Watson is recognized for making major directional changes in the field of psychology. Watson (as cited in Cooper et al., 2007) argued that, "objective study of behavior as a natural science should consist of direct observation of the relationships between environmental stimuli (S) and the response (R) they evoke" (p. 9). Later B. F. Skinner continued this research on stimulus-response conditioning to the environment. Additional behavioral theories have manifested since its original development,

such as behavior modification and ABA, which are approaches for developing a scientific systematic approach for improving socially significant behaviors. Behavior modification and changes are accomplished through systematic manipulation of environmental cues and interventions to change behavioral variables in the classroom setting. ABA is a systematic process that uses scientific investigations of understanding, description, prediction, and control for the study of behavior change. Behavior analysis consists of behaviorism, experimental analysis, and ABA (Cooper et al., 2007).

PBS also uses the principles of ABA. The main focus of PBS is to prevent inappropriate behavior through teaching, environmental manipulation, and reinforcing appropriate skills (Dunlap et al., 2010). IDEA (1997) mandated that educational systems institute the PBS model for appropriate behavior change into practice school-wide, also known as School Wide Positive Behavior Support (SWPBS). This proactive method to behavior change had many positive effects on behavior and later developed into the Response to Intervention (RtI) Model.

The FBA and PBS have a clinical history in ABA (Dunlap, 2006). Through empirical research, ABA with and emphasis on FBA as well as PBS has had a strong influence on behavior change systems in various populations and environments such as the school setting (Dunlap, Carr, Horner, Zarcone, & Schwartz, 2008). The purpose of pairing the FBA process with PBS is to develop a positive BIP that specifies what positive, proactive interventions to implement in order to assist the behavior change agents and those who work the student to maintain consistency during the behavior change process (McIntosh, Brown, & Borgmeier, 2008).

Methodological significance. This study examined the efficacy of an academic behavior assessment tool for the classroom educator that will translate subjective observations into an objective measurement that identifies adaptive replacement skills for maladaptive behaviors in

the classroom environment. In addition, psychometric properties and the covariance relationship between maladaptive behaviors and adaptive replacement skills were measured. The Classroom Behavior Continuum Scale (CBCS) was developed by the investigator to assist during the FBA process. This tool, the CBCS (Crump, 2011), is an indirect assessment instrument designed to measure the academic behavioral level of both adaptive academic behavior skills and maladaptive classroom behaviors. This tool measures academic behavior skills in the areas of (a) social interaction, (b) functional communication, (c) learning readiness skills, and (d) self-regulation. The maladaptive component measures: (a) aggression/self injurious behavior (SIBs), (b) restricted patterns of behavior, (c) inappropriate vocalizations, and (d) elopement. Data for learning readiness encompass (a) transitions, (b) on-task behavior, (c) response latency, (d) task completion, (e) requesting help, (f) following class routine, and (g) compliance. This analysis can be utilized in isolation or for the preparation of descriptive phase of the FBA that hypothesizes about the function of a student's behavior.

Importance of the Study

This study examined an academic behavior assessment tool, the CBCS, its theoretical significance, psychometric properties, and practical application for classroom educators with addressing students' challenging behaviors. This assessment tool is based in the theories of ABA and PBS.

This study may have positive impacts on education and student behavior change. Using an effective academic assessment tool may have profound effects on teachers' workload, organization, time, skills, and insight that maybe may or may not be in their toolboxes. Since the reauthorization of IDEIA that utilizes ABA in the educational system, the collaboration of both fields are needed to be understood if educators are to implement the concepts of ABA into the

classroom and school-wide for a complete behavior management program. Behavioral change agents must include the practical, theoretical, and methodological practices of the FBA process, teaching and implementing it into educators' practical and vital work. The CBCS (Crump, 2011) incorporates the theory of ABA and PBS by identifying appropriate replacement skills needed for behavior change. Both are written and mandated into laws and the applicable interventions needed during the FBA process to increase classroom functionality and adaptability. CBCS was developed to marry the two worlds of ABA and the education perspective using PBS. Educators can often identify the target behavior that needs to be changed (reactive-based); however, identifying appropriate replacement skills for proactive and teaching-based interventions can be difficult to pair the skill deficit to the behavior . Currently, when students display challenging behaviors in the classroom, the identification of replacement skills is left to the teacher's discretion, which can lead to a guessing game. Understanding the connection between problem behaviors and appropriately matching the skill needed to function in the classroom environment is key component for effective behavior change. The CBCS identifies the skill deficit that is occurring when the student engages in the maladaptive behavior, therefore showing what skill set the student is lacking. In addition, the replacement skill has been identified for the appropriate interventions, goal-setting, programming, and developing the behavior plan. Curriculum and lesson plans can be established for that individual student and the classroom for PBS in order to teach the appropriate replacement skills to decrease maladaptive behaviors. Appropriate behavior change not only benefits the teacher and the classroom setting, but also, from the student's perspective, the importance of identifying appropriate replacement skills can increase successful interventions of the behavior plan to assist the student's ability to self-regulate, engage in

academic tasks, increase motivation, improve grades, build better relationships between peers and teachers, and overall improve one's quality of life.

Limitations and Assumptions

Systematic behavior change can be difficult to implement in the classroom. The science of behavior change can be challenging even for skilled behaviorist analysts. The classroom educator is at an advantage in terms of handling the complexity of students' behaviors due to a limited amount of training, lack of proper assessment tools, and limited resources.

This study used an academic behavior survey based on teachers' perceptions of target students. The study measured teachers' responses in terms of identifying students' challenging behavior and identified the academic behavior skill needed as a replacement behavior/skill. The assumption was that the teachers' perceptions were accurate and true measurements of the students' abilities. The study did not take into account incorrect perceptions or misinterpretations of data or observations that may not be reliable due to teacher error. Teacher perception is a natural phenomenon in the classroom. The educator's perceptions can be accurate or may be misleading; however, these perceptions are a part of the climate of the classroom and the relationship between the teacher and his/her interactions with the student. This study used the teacher's opinion as a method of addressing the challenging behaviors and presented a replacement skill for the identified behavior as perceived by the teachers.

Timeline for the Study

This study uses extent data and data analysis concluded in the Fall semester of 2014. The extent data was gathered from Fall 2011-Fall 2014. The data was collected by the researcher while conducting the functional behavior assessment.

Definitions and Key Terms

This study defines terminology based upon the fields ABA and PBS and empirical research in these fields. For clarity and understanding, definitions of key terms are provided.

- *Adaptive skills* are behaviors that are required for academic success and performance in the classroom environment.
- *Academic behaviors* have a variety of synonyms, such as adaptive skills, pivotal skills, behavior cusps, appropriate replacement skills/behaviors, learning readiness skills, ready to learn skills, pro-social behavior skills, and PBS skills. These synonyms are used interchangeably to convey the skills students need to function in the contextual environment of a daily classroom to learn lessons and participate in curricular activities.
- *Academic Behavior Continuum Skill Score:* The overall classroom functioning level that has been calculated from the CBCS. It measures how teachers rate their perceptions of students' performance within the classroom. Behavior scores are the accumulation of the adaptive, maladaptive, and learning readiness skill level that give an overall percentage of academic behavior functioning.
- *Applied Behavior Analysis (ABA)*: The science in which tactics derived from the principles of behavior are applied to improve socially significant behavior and experimentation is used to identify the variables responsible for the improvement of behavior (Cooper et al., 2007).
- *Behavior Intervention Plan (BIP):* A direction or plan in a student's IEP document that instructs all stakeholders and behavior change agents on how to consistently implement FERBs. The antecedent-based interventions, reinforcement-based

interventions/teaching strategies, and consequential based-strategies for effective behavior change for students' maladaptive behaviors in the classroom environment require data collection for progress monitoring (Chitiyo & Wheeler, 2009).

- *Classroom Behavior Continuum Scale (CBCS):* A tool developed by the researcher to identify students' adaptive, maladaptive, and learning readiness skill levels and also identify adaptive replacement behavior skills (Crump, 2011).
- *Functional Behavior Assessment (FBA):* A systematic method of assessment for obtaining information about the purposes (functions) a problem behavior serves for a person. Results are used to guide the design of an intervention for decreasing the problem behavior and increasing appropriate behavior (Blood & Neel, 2007).
- *Individuals with Disabilities Education Act (IDEA)/Individual with Disabilities Education Improvement Act (IDEIA)*: A mandated law that outlines when an FBA is warranted under the guidelines with students with disabilities when behaviors impede academic success (Drasgow & Yell, 2001).
- *Indirect Phase:* During the FBA process, this is the first phase in which to identify target behaviors. This phase consists of interviews, assessment tools, rating scales, surveys, and questionnaires administered to individuals familiar with the student and his/her behavior. This phase is used to identify conditions in the natural environment that correlate with the problem behavior (Cooper et al., 2007).
- *Descriptive Phase:* The direct observations, during the FBA process, that identifies the antecedent, behavior, and consequence (ABC Data) of target behavior in the natural environment. This phase hypothesizes the function of a behavior (Cooper et al., 2007).

- *Functions of Behavior:* What purpose does the behavior serve? What is the student getting out of the behavior? The function of the behavior is often to have access to attention or tangible/material item and to escape from an event, person, or tangible/sensory input (Cooper et al., 2007).
- *Positive Reinforcement:* Occurs when a behavior is followed immediately by the presentation of a stimulus that increases the future frequency of the behavior in similar conditions (Cooper et al., 2007). Positive Reinforcement is access to attention or a material item.
- *Negative Reinforcement:* Occurs when a behavior is followed immediately by the removal of a stimulus that increases the future frequency of the behavior in similar conditions. Removal or Escape from a non-preferred task. (Cooper et al., 2007)
- *Learning Readiness* describes the student's functional readiness for academic success in the classroom environment.
- *Maladaptive Behaviors* are disruptive behaviors that when displayed by the student can impede academic success in the classroom environment.

Chapter Two: Review of Related Literature and Research

The first section of this literature review focuses on federal mandates as they pertain to FBA with PBS and the challenges educators face as they attempt to change problem behavior through the FBA process. The second section examines the disconnection among traditional FBA, PBS, and the need to measure strength-based academic behaviors variables for the academic setting. Third, this literature review examines the relationship between academic behaviors variables and problem behaviors. Last, the chapter presents an examination of educational assessment methods and the psychometric properties needed for increased validity and reliability to better assist educators during the FBA process.

This literature review examines the challenges that educators face when conducting an FBA in the school setting. This review examines the connections and disconnects among federal legislation, ABA, PBS/RtI, the FBA process, and collaboration challenges needed for a comprehensive development and implementation of the behavior plan. Traditionally, the FBA uses a problem-solving model that examines the pathology of behaviors; however, educational laws, such as IDEA (1997) and IDEIA (2004), emphasize that the development of the behavior plan to include strategies of Pa BS approach to measure both the student's behavior skill strengths as well as behavior deficits. Further review will establish the need for an academic behavior assessment tool to provide a systematic analysis and identification of both the student's academic behaviors strengths and weakness.

What are PBS and RtI?

The PBS model was defined by the U.S. Office of Special Education (as cited in OSEP Technical Assistance Center on Positive Behavior Intervention and Supports, n.d.) for the academic environment to build upon systems and interventions that are positive, proactive, and

teaches students the appropriate skill instead of punitive reactive based punishments for challenging behavior. PBS. The PBS model for schools is a three tiered, triangular, academic and behavior model that is divided into primary, secondary, and tertiary levels. This model has also been used for RtI. According to Sugai et al. (2000), the primary level is for general education (85% of students) and is full inclusion. The secondary level is for students that need higher group intervention (5-15%) and have an IEP to address the student's deficits. The Tertiary Level is the specialized individual intervention, which comprises (1-7%) of students with problem behaviors (see Figure 1 for RtI Pyramid).

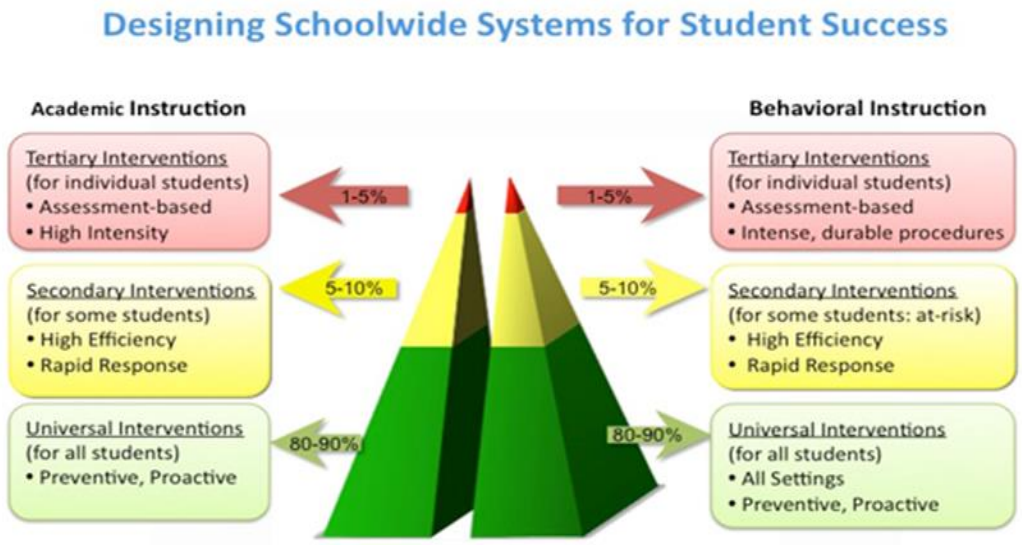

Figure 1. RtI pyramid. Reprinted from "Response to Intervention (RTI) & PBIS," n.d., retrieved from https://www.pbis.org/school/rti. Copyright 2015 by the U.S. Office of Special Education Programs. Reprinted with permission.

Schools in the United States have been charged with educating students to achieve academic and behavioral success. The focus of education is to prepare students to learn and succeed in the educational setting and later in life (Dunlap et al., 2010). For students to meet this goal, they need to come to school ready for the learning process. Schools often overlook important pre-academic behavior skills, such as compliance, following directions, and remaining on-task to complete assignments that are a necessity in creating a rich learning environment for

all students, teachers, and schools (Watson, Gable, & Greenwood, 2011). Often, behavior such as noncompliance, poor functional communication, physical disruptions, and aggression are not addressed proactively, teaching students appropriate behaviors before inappropriate behaviors begin (Lassen, Steele, & Sailor, 2006). According to Hanley, Heal, Tiger, and Ingvarrsson (2007), there is connection between problem behavior and academic performance. "Problem behavior such as aggression and noncompliance in young children are associated with long term social and academic difficulties" (p. 277). A systems-based approach is needed to appropriately address these problem behaviors so long term effects will not interfere with the academic success of the student or others.

Traditionally, the educational system responds to inappropriate student behavior with the *Wait-to-Fail* approach. Wrightslaw.com says that educators use the Wait-to-Fail model when the system does not provide early intervention for a student that is demonstrating academic or behavioral challenges. Instead of addressing the deficits through intervention and services, the student is retained or punitively disciplined in hopes that the student will *mature* as a result of retention. Often times these reactive techniques to stop undesired behavior are manifested in the form of punishment and negative consequences (Yell & Katsiyannis, 2000). PBS procedures emphasize assessment prior to intervention and strategies to reduce problem behavior instead of implementing interventions prior to performing a comprehensive assessment (Sugai et al., 2000).

SWPBS and RtI are often used simultaneously with a school-wide educational approach system that focuses on implementing a three-tiered intervention system that clearly defines the academic and behavior standards of all students and identifies students that may need additional support and intervention to be successful. The educational tiered approach focuses on teaching and setting the standards of students' academic and behavior outcomes.

> Positive Behavioral Interventions and Supports (PBIS)…aims to prevent inappropriate behaviors through teaching and reinforcing appropriate behaviors. Positive Behavioral Interventions and Supports (PBIS) is a process that is consistent with the core principles of RtI. Similar to RtI, PBS offers a range of interventions that are systematically applied to students based on their demonstrated level of need, and addresses the role of the environment as it applies to development and improvement of behavior problem. ("Response to Intervention (RTI) & PBIS," n.d., para. 3)

PBS has a multi-tier model of service delivery. All students are placed within a tier through on-going assessments that are based on academic data and behavior data such as academic benchmarks, screening data, skill acquisition or fluency, behavior Office Discipline Referrals (ODR), detentions, suspensions, and other violations (Chitiyo & Wheeler, 2009; McIntosh, Goodman, & Bohanon, 2010). The assessments provide ongoing progress monitoring and evaluation, leading to appropriate intervention. Both PBS and RtI use this model as a framework to organize an academic and behavior system that can be used both for individual classes and school-wide. PBS, the framework for improving the classroom and school-wide climate, practices focus on proactivity and teaching strategies for inappropriate behavior (Hieneman, Dunlap, & Kincaid, 2005). PBS decreases reactive management to problem behaviors, maximizes academic achievement, improves support for students with emotional disabilities, and integrates academic and behavior initiatives (Watson et al., 2011). This system has proven successful in modifying both the students' behavior as well as the educators' teaching strategies through applying interventions that modify the classroom environment in ways that are essential for change (Cho Blair, Fox, & Lentini, 2010; Watson et al., 2011). The teacher sets up the management system and modifies the classroom environment for student success.

The PBS's approach to intervention is different from the traditional approach of labeling students or identifying them for Special Education. In the traditional educational system, once students are identified into a special education program, it is difficult for them to reach the

academic standards needed to remediate out of special education. With PBS, students can receive appropriate interventions based on their level of performance rather than receiving labels to get the assistance that is needed (Hieneman et al., 2005). Since ongoing assessment is a characteristic of this system, the identification of students' strengths and weaknesses and performance can lead to early identification and intervention to correct situations quickly and efficiently (Watson et al., 2011).

What are the PBS and RtI Approaches to Behavior Change?

The focus of PBS and RtI is for students to be successful and proactive, and to identify students' strengths and deficits through on-going assessments and screening process for early intervention. "The tiered behavior framework allows teachers to clearly communicate with administrators, parents, and colleagues how they are providing those behavioral supports for students in their classrooms" (Sayeski & Brown, 2011, p. 16). This systems approach to change is less punitive and reactionary than the traditional way of disciplining disruptive behavior. Early identification allows for a proactive strengths-based approach and prevents students from engaging in consequential-based punishment strategies that can reinforce inappropriate academic and behavioral challenges. Since PBS and RtI identify behavioral and academic deficits both school-wide and individually, the emphasis on teaching strategies for developing appropriate skills becomes the main focus of instruction. Regardless of students' individual needs, focusing on teaching strength-based skills through the school-wide approach (Universal-Tier 1) can detour students from escalating and waiting for those deficits to reach a crisis level (Tertiary-Tier 3). In Tier 3, FBAs are conducted due to the severity of the behavior. The issue with waiting to assess students' challenging behaviors at Tier 3 is that behaviors have increased in intensity, duration, and force due to reinforcement, time, and the student's maturity level. Allowing behaviors to

escalate to such intensity requires more site resources, interventions, and time for change. According to Sandomierski, Kincaid, and Algozzine (2007),

> Both RtI and PBS support a preventative approach to teaching academic and social behavior... PBS, the practice of teaching and reinforcing students for displaying the school-wide expectations is considered to be a universal intervention…By teaching and reinforcing expected behaviors, teachers and other professionals using PBS increase the probability that the majority of students will act according to the expectations, and acts as a proactive intervention for students with a history of problem behavior. Similarly, those who envision potential payoff from RtI see it coming from early identification and strong preventive intervention for academic problems. (p. 3)

Students' inappropriate behaviors can be addressed through the RtI systematic process of identification, prevention, intervention, and progress monitoring. The school-wide and the classroom management plan that incorporates RtI and PBS approaches can assist students with academic and behavior performance. Through a universal system that promotes teaching social skills, adaptive prosocial skills, matching problem behavior to skills, and instruction-based intervention, adaptive student responses to problem behavior and appropriate academic behavior skills are increased (Lewis, Barrett, Sugai, & Horner, 2010).

What is the FBA Approach to Behavior Change?

Although numerous procedures and interventions can be applied to the behavior change process, laws such as NCLB (2002) and IDEIA (2004) have mandated a more universal positive approach to addressing behaviors that impede academic success (Hieneman et al., 2005). In general, these mandates have set a relaxed structure for behavior assessment in the educational setting (Stage et al., 2006). The term identified in IDEIA is an FBA. The purpose of the FBA is to identify variables that maintain the student's maladaptive behaviors in the school environment across multiple settings and persons. The components of the FBA are the indirect phase, descriptive phase, analog phase (when needed) and the development of the BIP. The FBA process helps the assessors hypothesize about the function(s) of behaviors that are impeding academic

success. The FBA will identify target behaviors with observations and measurements of the target behavior, and help create an intervention plan with FERBs to address the student's needs at school (Cooper et al., 2007).

The FBA focuses on the measurements, function, topography, environment, and interventions needed to eliminate or reduce the target behavior. Target behaviors are maladaptive behaviors that impede academic progress. The target behaviors are often described as negative and socially are inappropriate. Maladaptive behaviors are the targeted behaviors to be reduced by frequency, duration, and intensity during the intervention phase. The focus during intervention is that the target behaviors need to become inefficient, irrelevant, and ineffective. The types of maladaptive behaviors teachers report that can interfere with the learning environment are: inappropriate vocalizations like cursing, yelling, screaming; any form of aggression towards self or others, such as SIBs; or property destruction (Clunies-Ross, Little, & Kienhuis, 2008). Even sensory seeking repetitive behaviors such as rocking, hand-flapping, jumping, or spinning can interfere with learning and are inappropriate in the classroom. Target behaviors have a function; assessors must determine what purpose the behavior serves the student (i.e., function) and what the behavior looks like (i.e., topography).

The function of the behavior refers to the purpose the behavior serves; what is the student getting from engaging in this behavior? Is the student engaging in the behavior for positive reinforcement, to gain access, for negative reinforcement, for to escape from an aversive stimulus (McIntosh & Av-Gay, 2007)? The student can also engage in automatic reinforcement for sensory stimulation. The importance of identifying the function of the behavior is needed to identify FERBs during interventions (Lee, Sugai, & Horner, 1999). The topography of the behavior refers to what the behavior looks like. What form does it take and how would the

behavior be described? It is important for the assessor to understand the two components of a target behavior, otherwise inaccurate analysis can be concluded based upon the confusion between function and topography. An FBA is a technology that allows the assessor to systemically identify environmental variables that reinforce the student behaviors and the purpose the maladaptive behavior serves. Smith (2001) identified the technical components of PBS and in conjunction with the FBA as follows:

- Identify the problem behavior and gather information.
- Define behavior in observable terms including setting and times of behavior.
- Develop a hypothesized statement for the function of the behavior.
- Collect direct observation data.
- Develop behavior support plan.
- Develop implementation curriculum.
- Collect data for progress monitoring about effectiveness of interventions.

The foundation of FBA was developed and researched in a controlled clinical setting of testing and manipulation of the variables. This level of testing is referred to as an FA, where the variables are manipulated to identify the function of behavior under different experimental conditions. This level of testing can be more difficult to conduct under less controlled settings such as classroom environment. A literature review by Hanley, Iwata, and McCord (2003), examined a total of 277 empirical studies on FA and determined that 89.2% of these identified studies were conducted in a clinical setting at an inpatient hospital facility, or institution. Many fewer, 17.4%, were conducted in a home, vocational school, or outpatient clinic. “It was unclear whether choice of setting has been due to the greater degree of control afforded by institutionalized environments or the fact that persons with more severe problem behaviors are

more likely to be treated in these settings" (pp. 153-154). The results showed that the school-based environment was not the main location of such experimentation. Controlling the variables in the classroom environment can be difficult. Although it may be a challenge to conduct that level of experimentation, the empirical research showed that the data collected during the process of conducting an FBA and FA level (when appropriate) is useful in determining an intervention plan during the behavior change process (Van Acker et al., 2005).

What is the Relationship and Disconnect Between PBS and FBA?

Federal mandates have established that students that display disruptive behaviors must have a behavior plan that teaches FERB with interventions that are positive and proactive (O'Shea & Drayden, 2008). "If IEP teams addressed problem behavior in a preventive or proactive manner, then the need for disciplinary procedures would be lessened and students would be taught the adaptive skills necessary to function successfully in society" (Drasgow & Yell, 2001, p. 239). The collaboration of systems, PBS and FBA together, can potentially increase the identification of learning opportunities and promote a more positive rich environment for students to be taught appropriate skills.

IDEA (1997), IDEIA (2004), and NCLB (2002) stipulate that students that display behaviors that are interfering with their academic progress or the progress other students meet the standards for school personnel to conduct an FBA based on PBS (Chitiyo & Wheeler, 2009). IDEA (1997) stated that the "IEP Team shall in case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior" (§ 1414 (d)(3)(B) (i)). The analysis from the FBA would further assist with the development of the behavior intervention/support plan

(BIP/BSP) to include interventions that focus on proactive positive support strategies to decrease the frequency of the maladaptive behaviors (Drasgow, Bradley, & Shriner, 1999).

Research by McIntosh and Av-Gay (2007) acknowledged the disconnect school practitioners face as they conduct the FBA in order to create and develop an appropriate BIP/BSP using positive interventions and support. The BSP/BIP is a direction or plan in a student's IEP document that instructs all stakeholders and behavior change agents on how to implement FERBs consistently (Van Acker et al., 2005). These behavior changes are focused on antecedent-based interventions, reinforcement-based interventions/teaching strategies, and consequence-based strategies to create an effective plan for students who display maladaptive behaviors within the classroom environment. Data collection is required to show the evidence that the student is using the replacement skills for the fidelity of the behavior plan (Gresham et al., 2004).

The possible disconnect among the FBA, BIP, and PBS may be rooted in different perspectives. FBA focuses on the analysis of the target maladaptive behaviors and measuring the occurrence, non-occurrence, environmental triggers, and function of these behaviors. "FBA is used to identify the type and source of reinforcement for challenging behaviors as the basis for intervention efforts designed to decrease the occurrence of those behaviors" (Cooper et al., 2007, p. 501). PBS and BIP focus on students' adaptive skills to increase academic success and highlight the appropriate replacement skills to be taught (Watson et al., 2011). Traditionally, the FBA provides useful information and data offers an understanding of the baseline and function of the maladaptive behavior, but it does not produce information or baseline data to help the practitioner identify the adaptive replacement skills that require teaching during positive intervention. Research by Cressey (2010) indicated that educators may benefit from a formative

behavior assessment tool that identifies the adaptive skills, academic behaviors skills, and maladaptive behaviors during the FBA process, as well as positive replacement behaviors for the BSP for RtI (Cressey, 2010; Riley-Tillman, Kalberer, & Chafouleas, 2005).

Does an FBA Address Academic Performance Problems?

The purpose of an FBA is to evaluate the effects the environmental variables have on student behavior through a systematic plan to determine the function of a particular behavior (Scott & Kamps, 2007). In other words, the FBA identifies environmental variables or stimuli in the classroom will trigger the student's problem behavior.

One of the many foci of education is to increase students' academic performance and engagement. McIntosh and Av-Gay (2007) discussed the connection between academic skills and classroom environment, stating, "A singularly powerful variable in school settings is individual academic skill level, and academic skills dramatically influence the environment for students" (p. 41). Many problem behaviors are impacted by or arise from academic performance issues. According to OSEP Technical Assistance Center on Positive Behavior Supports (n.d.), there is a connection between academic achievement and problem behaviors. This functional relationship exists between difficulty of academic tasks and problem behaviors that are reinforced by escaping from the difficult task (Lee et al., 1999). A study conducted by Kern, Childs, Dunlap, Clarke, and Falk (1994) explored how students may struggle in academic performance due to basic skills that they have not acquired. According to Kern et al., "Educators have recognized that some students do not have the skills and behavioral repertoires necessary to cope with the many academic and social expectations in schools. As a result, they may engage in problem behaviors as an alternative way" (p. 239). When a student does not have the appropriate skills for educational success, he or she may continue to engage in or increase the display of the

disruptive behavior for in order to escape or get away from the difficult task. If this disruptive behavior allows the student to avoid the challenging task, it can increase the occurrence of this disruptive behavior in the future, thereby reinforcing the undesired behavior.

Academic performance behavior skills, traditionally, are not the focus during the FBA process. According to Shapiro and Kratochwill (2000), "functional analysis has not been previously developed for academic performance problems in that the existing models of functional analysis is not readily applicable to academic behaviors" (p. 60). In order for the FBA process to better support educational focus and increase students' academic performance, baseline measurements and examining of academic behaviors, strengths, and deficits can be a valuable tool for evaluating student behavior and creating a more comprehensive analysis. Further evaluation by McIntosh and Av-Gay (2007) addressed the positive connection between academic instructions as a preventive solution to problem behavior, stating, "As such, effective academic instruction can be seen as both preventative and intervention for problem behavior" (p. 41). Once educators understand the gaps and the weaknesses of the students' academic behavior, addressing those deficits through teaching and modifying task can reduce problem behaviors (Filter & Horner, 2009).

What are the Challenges and Impacts of the FBA Process for Educators?

Educators face numerous challenges conducting FBAs in the school setting. For example, FBAs are time consuming, teachers often lack professional training, and the federal law has only loosely defined procedures for conducting an FBA. IDEA (1997) can be difficult to translate into an applicable process for educators. Research has shown that federal laws have left the protocol for the FBA to states and schools to interpret. "In fact, the Department of Education specifically refused to define an FBA…This means that the composition of FBAs will be left to states, school

districts, and IEP teams" (Drasgow & Yell, 2001, p. 241). This ambiguity can lead to a lack of accountability, systematic confusion, and increased misinterpretations of the law that may lead to due process hearings and inappropriately addressing students' maladaptive behaviors (Von Ravensberg & Tobin, 2008; Yell & Katsiyannis, 2000).

A study by Drasgow and Yell (2001) reviewed due process hearings that directly involved FBAs pertaining to IDEA. This study examined 14 state level due process hearings that involved a district conducting an FBA. In 13 of 14 hearings, 94% of the hearings outcomes were in favor of the parents, stating that the district either did not provide an adequate FBA or failed to conduct an FBA in accordance with federal law. The hearing officer examined the details of the FBA as it was outlined in IDEA. The officer determined that neither state nor the federal law contained a specific legal standard regarding how to conduct an FBA. The conclusion was that an outside, independent FBA had to be conducted and was compared to the district's FBA. It was ruled that the district's FBA was inadequate when compared to the independent FBA.

The inclusion of IDEA (1997)/IDEIA (2004) mandates requires the educational system to document and better meet the needs of special education students by utilizing ABA principles (Moreno, 2008); however, the application of such processes and theories make it almost impossible for educators, and quite possibly, school psychologists to conduct appropriate FBA procedures for behavior change. Mandated laws have forced and mandated the documentation of the behavior change process without the knowledge, guidance, and expertise to actually change behaviors systematically (McIntosh et al., 2008).

Overall, the idea of IDEA (1997)/IDEIA (2004) mandating FBAs with special education students that engage in inappropriate behaviors is a step in the right direction based upon many years of intense ABA research. However, the years of study and expertise required for the

science of behavior change to be implemented effectively is lacking (Waguespack et al., 2006) since applicable implementation of strategies are not directly stated. Ultimately, the law cannot be effective without proper and appropriate training. The science of applied behavior change and the skills needed to conduct an adequate FBA cannot be taught in a brief professional development seminar for educators or given to teachers as a fill in the blank form for the creation of BIPs (Blood & Neel, 2007). A few districts have tried to compensate for this deficiency by utilizing and consulting with behavior analysts or creating specialized behavior departments. These are possible solutions, but due to budget challenges, school districts are finding it difficult to maintain consistency and provide the hours needed for such a sophisticated specialty.

Although there can be limitations for a school district to conduct and maneuver through the FBA process, the law has loosely directed districts to address problem behaviors and be responsible to assist students in the educational setting. IDEA/IDEIA allows students to be taught appropriate behaviors and receive proactive interventions that address challenging behaviors before they occur. Placing the responsibility and accountability on school districts to address the problem maintains a safer, healthier and equal environment for all students regardless to their challenges (Katsiyannis et al., 2008). Although the FBA is beneficial to students and the school setting, students often do not receive this level of assessment until later in the Tier 3 level of the RtI model.

It is unlikely that the lawmakers and writers of IDEA (1997)/IDEIA (2004) could think that educators would easily understand the details of the behavior change models without any formal, intense training. Research has addressed the feasibility of implementing such a complex process. According to Scott and Kamps (2007), “Future study must continue to examine the

feasibility of training school personnel to conduct assessment and analysis on their own" (p. 154). Proper training is essential for proper implementation of the behavior plan.

The legislation does incorporate transparency and accountability for school districts and the protection of students through positive behavior change interventions instead of using punitive disciplinary actions; however, due to a lack of training, skill, and knowledge regarding the behavior change process, educators are unlikely to be unaware of their mistakes. As a result, the FBA and the creation of the BIP have dwindled down to picking and choosing strategies from a menu and writing them into the behavior plan (Couvillon, Bullock, & Gable, 2009).

Clearly, the lack of appropriate support, guidance, training, and accountability do not accurately address the behavior challenges IDEA/IDEIA were meant to address. The lack of training and educators attempting to change behavior because of the mandates may possibly increase students' maladaptive behaviors, placing students at a greater risk and potentially yielding legal ramifications (O'Shea & Drayden, 2008). With a lack of proper training, educators may unknowingly reinforcing inappropriate behaviors and increase the number of punitive strategies when the desired behavioral outcome is not achieved. An effective and efficient FBA process is needed to assist all educators in this process. Just as students need an effective BIP to change behaviors, educators and IEP teams need an effective, efficient plan for guidance that will assist them as behavior change agents. Without the clear support of institutionalized guidelines and direction, IDEA's FBA technology has become just another bureaucratic idea made into law (Scott et al., 2010).

Behavior Plans and Professional Development

Research, laws, and legislation that govern the educational system emphasize the importance of schools addressing problem behaviors that impede learning (Drasgow & Yell,

2001; O'Shea & Drayden, 2008; Yell & Katsiyannis, 2000). NCLB (2002) and IDEIA (2007) were signed into law to meet the academic and behavior needs and deficits of students that are not accessing academic standards based on their disabilities (Drasgow & Yell, 2001; O'Shea & Drayden, 2008). These laws mandate that educators design, implement, and evaluate an intervention and behavior plans that allow students to address their deficits. A study by DiGennaro, Martens, and Kleinmann (2007) discussed the importance of teachers acquiring new skills to implement plans within their classroom setting, stating, "Most intervention plans require teachers to acquire new instructional and behavior management skills and to incorporate these skills into their teaching repertoire" (p. 448). To better address their students' deficits, quality training and professional development can support teachers, yielding increased understanding of the behavior change process (Yell & Katsiyannis, 2000). However, professional development that highlights educational code and focuses on the quality, effectiveness, and integrity of behavior plans is needed. A study by Browning-Wright et al. (2007) discussed the state of affairs in the American education where (a) inadequate FBAs were conducted and (b) there was no to little correspondence between data and the PBS plans, therefore rendering it potentially legally invalid due to procedural violations. To address this ongoing issue, the researchers measured the effects of a preliminary training that used a BIP/BSP guide to improve the development of behavior plans. The results suggest that the training improved behavior plan development to the superior range. School personnel increased the quality and the development of adequate behavior plans by 267% in the area of knowledge and skills. The training increased internal consistency between analysis and intervention design. Although this study shows promise, the majority of professional development and trainings do not yield such strong results. Also this study is at the

preliminary stage. Many districts may not want to invest the resources into trainings or any other professional development.

Educational Assessments

How do educators measure academic and behavior performance? Educational assessments have been administered to determine student achievement, student intelligence, executive functioning skill level, student potential, behavior, and quality of instruction. Assessment models have been used in psychoeducation, cognition, and psychological testing to define students' academic and behavioral performance. Assessments systematically formalize standards and protocols to measure the constructs that are being analyzed across different people, populations, cultures, and settings (Shapiro & Kratochwill, 2000).

A variety of assessments are used in the educational setting. For the most part, education takes an eclectic approach to determine students' academic and behavioral levels. To measure performance, norm-referenced based assessments, formative testing, criterion-referenced/curriculum-based assessments, and behavioral assessments have been instituted to provide a more comprehensive evaluation of students' strengths and deficits (Ornstein & Hunkins, 2004).

Norm-referenced based assessments systematically formalize standards and protocols to measure the constructs that are being analyzed across different people, populations, cultures, and settings to form empirical comparisons. Norm-referenced based tests are administered to a large sample of people selected at random from distributed populations. These tests often measure students' academic performance based on reading, math, science, and comprehension, such as the Peabody Individual Achievement Test-Revised/Normative Update (Markwardt, 2005).

Formative and/or curriculum-based assessments are concerned with direct measures of student performance based on daily tasks that the student performs (Overton, 2006). These types of assessments measure the skills students need to learn and the mastery skill level. This model uses direct assessment of academic target behavior (Lentz, 1998) and also the knowledge of those skills. Many formative assessments use a strength-based educational model that measures students' deficits as well as their strengths and abilities across different domains.

Depending on the theoretical approach, research methods, therapy techniques, systematic procedures, and identification and definition of behavior, assessments in the school setting can be diverse. Behavior approach perspectives can come from any of the educational learning theories. For students to benefit from testing and to receive a comprehensive evaluation, educators/assessor having an eclectic knowledge may best serve students. Educators having knowledge in the areas of psychoeducation, cognition, ABA, constructional approach and/or psychology can require a higher skill level than the typical classroom educator (Shapiro & Kratchowill, 2000). Some procedures require less of a behavior expertise and focus on indirect measurements such as surveys, checklists, rating scales, and interviews or other basic assessment techniques for identifying behavior, data collection, and direct measurement of behavior (Blood & Neel, 2007).

Similar to academic-based assessments, behavior assessments can also include norm-referenced tests, such as the Adaptive Behavior Assessment System-II (ABAS II; Harrison & Oakland, 2003) and the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 2004). These indirect assessments are standardized and provide scoring based upon a large population. It is argued that these tools alone may not provide enough informational data to identify the baseline performance level of behaviors and the replacement academic behavior

skills needed to be identified and taught for appropriate classroom functioning. Some of the assessments are restricted to set of procedures used by *experts* and specialized professional credentials that limit the average classroom educator from administering, scoring, and analyzing the data. This limits the rich supply of information from people with whom the student interacts with the most is lost (Blood & Neel, 2007).

Another form of behavior assessment is similar to criterion-referenced/curriculum-based assessments (CBA) or formative testing. Criterion-based assessments measure the student's academic and behavior performances through direct observations in the natural setting and shares several characteristic of ABA such as dynamic methodology, systematic procedures, and low-inference measurements. CBA examines the variables that contribute to student behaviors and performance (Dunlap, Kern, & Worcester, 2001). This type of behavior assessment measures academic behaviors, behavior skill deficits and skills strengths, and understanding of all of which is needed for the student to be successful in the classroom environment (Sattler, 2002).

Behavior assessments take on a unique and challenging perspective in the classroom. Standardized testing or indirect measurements—although conducive for the environment, easy to administer, and relatively simple to interpret and score—may not capture or provide valid deductions about the occurrence of and reason for the behavior (Blood & Neel, 2007). Direct observations can be incorporated into the assessment; however, the skill level of the assessor is usually more specialized than the typical classroom teacher. Behaviors are multifaceted and can be difficult to address for a variety of reasons. First, behaviors work in conjunction with the environment. The structure or the lack of structure in a classroom can trigger behaviors. The better the management system the teacher has in place—such as structure, organization, and clear expectations—the more stimulus control the teacher has over students' behavior

(Katsiyannis et al., 2008). Identifying and assessing behaviors through environmental variables can challenge teachers because behaviors take on a domino effect, leaving the teacher not knowing what came first, the chicken or the egg. Second, the target behavior is displayed due to what purpose the behavior serves. The function or the purpose the behavior serves is the most efficient way the student knows to get their needs met, based on past reinforcement received when displaying the behavior. Third, the behaviors occur because students do not have the appropriate academic behavior skills in their repertoire to function in the classroom ("New Mexico Public Education Technical Assistance Manual," n.d.).

What are academic behaviors? Depending upon the theory, academic behaviors can take on many names such as socially significant behaviors, adaptive behaviors, learning readiness skills, pivotal behaviors, executive function skills, and pre-academic skills (Cooper et al., 2007; Dunlap et al., 2001). According to the American Association on Intellectual and Development Disabilities (AAIDD, n.d.), adaptive behaviors are the collection of conceptual, social, and practical skills that all people learn in order to function in their daily lives. Conceptual skills include: literacy, self-direction, and concepts of numbers, money, and time. Social skills are: interpersonal skills, social responsibility, self-esteem, gullibility, naïveté to social problem solving, following rules, obeying laws, and avoiding being victimized. Practical skills are: activities of daily living (personal care), occupational skills, use of money, safety, health care, travel/transportation, schedules/routines, and use of the telephone.

Adaptive behaviors are the skills that are identified as the appropriate behaviors or the replacement skills that educators want to increase during interventions.

> A practitioner should never plan to reduce or eliminate a behavior from a person's repertoire without (a) determining an adaptive behavior that will take its place and (b) designing the intervention plan to ensure that the replacement behavior is learned. (Cooper et al., 2007, p. 60)

The purpose of identifying the adaptive skills is to understand in which step to introduce the skill during the intervention phase of the teaching process. As educators, knowing the baseline performance of a skill and the function of the deficient skill is needed for scaffolding and building on a skill as a replacement behavior in order for the student to reach the terminal behavior. Adaptive or academic behaviors can be based upon the skill set needed for each classroom and can change depending on the environment (Sattler, 2002). In general, skills such as compliance, task-completion, functional communication, social interaction, and transitions within the context of a preferred or non-preferred class activity or location may have an impact on academic success, and these basic skills as replacement behaviors may be beneficial to incorporate as behavior teaching goals and when implementing interventions for the BIP/BSP (Filter & Horner, 2009).

Academic behaviors have a variety of synonyms, such as adaptive skills, pivotal skills, behavior cusps, and appropriate replacement behaviors, executive functioning skills, learning readiness skills, ready to learn skills, pro-social behavior skills, and PBS skills. These synonyms are used interchangeably to convey the skills students need to function in the contextual environment of a daily classroom to learn lessons and participate in curricular activities.

Depending upon the classroom structure, teacher's management style, and environmental context within the classroom, different pro-social skills maybe needed to meet students' needs for academic achievement. Research by Rimm-Kaufman, Curby, Grimm, Nathanson, and Brock (2009) describes adaptive skills as functional communication, attention, compliance/following directions, on-task performance, task completion, self-regulation, and appropriate social skills for peer interactions. Other research has noted that skills such as asking for clarification, transitioning (Dooley, Wilczenski, & Torem, 1999), and play skills are essential for classroom

performance. Some educators may define other skills more or less relevant for curricular activities. A high school educator may not find play skills an important domain for the classroom; however, a pre-school teacher may measure play skills to represent a cluster of significant skills for peer interaction, motor planning, and problem-solving that is related to executive functioning.

The role of academic behavior skills and executive functioning and assessments. Executive functioning is the mental process generated by the prefrontal cortex of the brain, which is responsible for thought analysis, organization, regulating behaviors, and social control. Executive functioning encompasses planning, focusing attention, remembering instructions, and multi-tasking. In the classroom, students rely on the executive functioning processes to problem-solve and self-regulate. The mental processes of executive functioning can be observed by measuring the related skills such as academic behavior skills (Garcia-Barrera, Kamphaus, & Bandalos, 2011; Sadeh, Burns, & Sullivan, 2012). If students come to school with executive functioning issues, tasks requiring these skills could be challenging those students.

Executive functioning in the classroom encompasses analyzing a task, planning, organization, making adjustment during a task, and executing the plan (Blair & Diamond, 2008). Normally, such mental processes can be done very quickly; however, when students have difficulty with executive functioning without utilizing appropriate academic behavior skills, students they appear unproductive or *stuck* during an activity. Executive function mental processing can be measured by observing academic behaviors skills such as remaining on-task, task completion, and increased response latency. If the student is struggling with processing and selecting appropriate skills, he/she can yield unfinished products, complete work samples haphazardly, and exhibit an increase in the frequency and intensity of problem behaviors.

"Executive Functioning deficits are associated with behavior problems…E.F. [skills] may be a useful target for interventions attempting to prevent or rehabilitate problem behaviors in students" (Sadeh et al., 2012, p. 237). The student's lack of ability to select from a repertoire of acquired skills can increase maladaptive behaviors to escape (negative reinforcement) the task, threatening the student's performance and educational success.

Many needed skills influence productivity and can affect different tasks during execution. Impulse control or self-regulation provides the student with the ability to think before acting. Emotional control is the ability to manage feelings. Flexibility is the ability to transition and make adjustments during expected and unexpected changes. Working memory retains information for completing multi-step tasks. Self-monitoring allows students to evaluate their performance and make adjustments. Planning and prioritizing are needed for the student to identify which are the most important steps and the subsequent steps to finish the task. Students with organizational issues often have problems with losing and misplacing assignments. Task initiation problems can occur because the student is having an issue with starting work in a timely manner, causing a delay in completing assignments (Bierman, Torres, Domitrovich, Welsh, & Gest, 2009). All of the aforementioned skills are needed for classroom success. When students enter the classroom lacking executive function skills, it can affect individual and peer performance, ultimately impacting the entire overall learning process of the classroom.

Executive functioning challenges can be difficult for educators to identify, possibly due the limited skill level of the practitioner, the various definitions, and utilizing appropriate tools and assessments with valid measurements of the psychological constructs (Garcia-Barrera et al., 2011). The identification of mental processing issues is rather difficult because teachers cannot observe the mental processing of the brain directly. However, teachers can identify executive

functioning processing problems indirectly by measuring the academic behavior skills associated with that area of brain. The primary executive functioning scales available for clinicians and educators are the Behavior Rating Index of Executive Functioning (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000) and the Child Behavior Checklist (CBCL; Achenbach, 1991). Based on their psychometric properties and available research, both scales may provide valid and reliable measurements that can help educators identify executive functioning abilities; however, neither tool identifies the appropriate replacement skill that has a negative correlation to the maladaptive behavior when developing the BIP. The current tools also take about 15 minutes to answer and scoring is not included in that time frame, making these scales inefficient for the classroom educator (Muyskens, Marston, & Reschly, 2007). Due to the lack of resources and appropriate tools to access, classroom educators can evaluate the success of mental processing by checking the student's work production, measuring the occurrences when student maintains self-regulation/control, and to what extent the assignment was executed measuring academic behavior skills, yet this type of measurement can also be challenging without the proper support and knowledge to identify replacement skills.

Early identification of executive functioning issues can help students in the classroom setting. Having an educational system model for early detection and intervention, such as RtI, may provide the assistance that students and teachers need for learning. As mentioned earlier, RtI provides early screenings and ongoing assessments of students' ability to access the curriculum. RtI may provide the essential framework needed for students that may be challenged with executive functioning skills. Through RtI's systematic model, early identification and interventions may provide students the needed assistance to learn executive function mental processes that might otherwise can impair the student's ability to be successful. Although RtI is a

good educational system for early identification and intervention for students that may be at risk, the lack of identified and appropriate assessments that address both the academic and behavioral components have not been demonstrated (Semrud-Clikeman, 2005).

The implied assumption is that as students move through the educational system each year, encountering new teachers and new classrooms and facing new academic challenges, the students will automatically learn the skills needed for meeting the academic rigor for the classroom and are ready to engage in the tasks for learning. In contrast to the assumptions that students are ready to transition to the next grade level, teachers report that many students are ill-prepared, show a lack of caring, and many students are not focused to be able to complete classroom work assignments. Most of these teachers report that students that lack basic academic behavior and executive functioning skills are ill-equipped to engage in and give attention to tasks (Rimm-Kaufman et al., 2009). These students are often disruptive and often display maladaptive behaviors that are not conducive for a learning environment, interfering with both their performance and their peers' learning (Lee et al., 1999).

What are maladaptive behaviors? Maladaptive behaviors impede both the student's learning and that of his/her peers. These disruptive behaviors often lead to disciplinary actions such as detention, removal from class, suspensions, and sometimes expulsion. Increased teacher frustration and limited classroom productivity can be caused by aggression to self, others, or property; inappropriate vocalizations such as cursing, name calling, screaming, and vocal repetitiveness; elopement; or other various escape or attention-maintained behaviors (Ellis & Magee, 1999).

What is the relationship between adaptive academic behaviors skills and maladaptive behaviors? A study conducted by Preciado, Horner, and Baker (2009) examined

the relationship between decreased problem behaviors in Latino English language learners and an increase in academic engagement when function-based academic interventions were used. The results were that high quality instruction that engages students, leads to reduction in problem behaviors. Further studies show the connection between students demonstrating an increase in maladaptive behaviors when they lack the necessary skills to perform academic behaviors and engage in executive functioning skills (Sadeh et al., 2012). When students have not learned appropriate coping or academic behavior skills, they are more likely to exhibit problem behaviors such as yelling, screaming, aggression, or SIBs (Russo, Cataldo, & Cushing, 1981).

A study by Durand (1993) found that a student engaged in maladaptive behaviors, such as inappropriate vocalizations, displayed a higher frequency of disruptive behavior than students that were able to convey their wants and needs through functional communication. Through FA, it was determined that the student's behavior could be serving a dual function, depending on the scenario. It was reported that the purpose of the behavior could be for negative (escape) or positive (access) reinforcement, since the student had a functional communication deficit. The student had low frequency level of using functional communication. A comprehensive intervention plan was implemented to teach the FERB. The intervention focused on increasing the frequency of communication through functional communication training (FCT). The results from the study revealed that, as the student increased in functional communication, there was a decrease in the maladaptive behavior of inappropriate vocalization.

Educators tend to have no problem reporting the maladaptive behaviors that are impeding their students' academic success; however, they do need assistance identifying appropriate replacement behaviors: the adaptive and learning readiness skills that need to be taught in order to reduce problem behavior. It is important to finding the replacement behavior so that the

educator can teach the new skill in the place of the inappropriate behavior. Hanley et al. (2007) discussed maladaptive behaviors that were displayed in a pre-school setting where the children had an increase in problem behaviors and a decrease in appropriate skills. Intervention was implemented and pro-social skills were taught. As the pro-social skills increased, there was a reduction in the display of inappropriate behaviors. When students have a limited method of communicating or do not have the appropriate skills for classroom functioning, students will use alternative inappropriate ways to get their needs met. In addition, a discussion by Dunlap, Dunlap-Kern, Clarke, and Robbins (1991) illustrated that teaching and modifying curriculum-based interventions produced a decrease in the severity of problem behavior, thereby substantiating the possibility that positive behavior interventions can reduce maladaptive behaviors.

Adaptive behavior skills are inverse co-variant measurements of the target/maladaptive behavior (Lalli, Kates, & Casey, 1999). As skill levels for the adaptive skills increased, there is a decrease in maladaptive behaviors; the converse is also true (see Figure 2). A study by Dominguez (2010) focused on early intervention training for preschoolers and found that teaching academic behaviors skills will increase educational success and decrease problem behaviors in the classroom.

The co-variance between two variables occurs when variable one is manipulated and variable two is contingent upon the manipulation of that tested variable. As variable one is manipulated, it has a negative correlation with the second variable. Parrish, Cataldo, Kolko, Neef, and Egel (1986) defined response co-variance as “the observation that two or more behaviors vary directly or inversely” (p. 241). Co-variation examined the relationship between appropriate skills and target problem behaviors. Studies by Carr and Durand (1985) and Lalli et

al. (1999) have shown that academic responding and rates of problem behavior are inversely or negatively correlated. As academic behaviors/responding increase, the display of inappropriate behaviors decreases (Ayllon & Roberts, 1974). Further studies by Schieltz et al. (2011) demonstrated that teaching FCT led to a rapid decrease of destructive behavior.

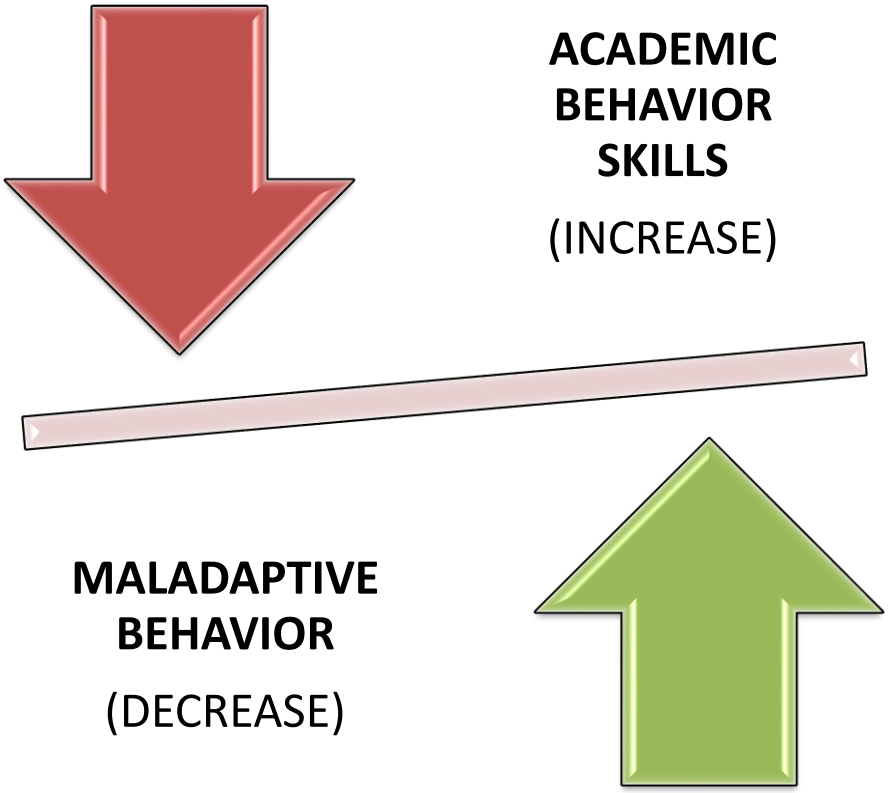

Figure 2. Relationship between adaptive academic behaviors skills and maladaptive behaviors.

Research by Parrish et al. (1986) described the relationship between students exhibiting increased problem behaviors in the classroom and the decrease in adaptive academic behaviors needed for academic success. They also explored the inverse relationship; when adaptive behaviors increase, maladaptive problem behaviors decrease. Dominguez (2010) noted that, regarding the constructs of *learning behavior* or *approaches to learning*, evidence suggests adaptive learning skills, such as competence motivation, initiative, attention, persistence and attitude toward learning, promote school readiness in reading, language, and mathematics.

PBS focuses on the development of positive desired behaviors. Traditionally, the FBA examines the maladaptive target behaviors. Providing an assessment that measures both domains may provide a comprehensive evaluation of the student's strengths and weakness that collaborates with PBS. Watson et al. (2011) focused on students' excesses and deficits, noting that "A teacher's ability to deliver quality instruction begins with reliable and valid information on a student's strength and weakness" (p. 335). True measurements of student's performance are needed for an appropriate analysis, for curricular modifications for scaffolding, and to increase behavior momentum for students' success. Interventions require modification of the curriculum for increased academic success (Kern et al., 1994).

Behavior assessments and data collection. What can be analyzed about student behavior is what is measurable and observable. In order to achieve validity and reliability, one must use tools and research that have been proven to be effective in the educational setting. Tools such as curriculum-based assessments and measurements that benefit and provide key information for students' performance and skill abilities can further assist during the FBA process. The problem-solving component of educational assessments seems to lie in what the assessment is measuring and the purpose for which the data are being scrutinized. Depending on the academic subject and the variables under investigation, different constructs may best be analyzed under various settings, environments, measurements, models, and forms of testing. The measure by which a construct is being investigated is critical for increased validity and reliability in terms of the population for which the findings are relevant. Shapiro and Kratochwill (2000) point out the controversy related to best practices of assessment, noting that. "Psychometrics, decision theories, interpretation and analysis, and research data continues to be debated by researchers and educators over which assessment method is best to interpret students' true

baseline and predictions about educational performance and success" (p. 355). Due to the debate, the eclectic approach may be best to evaluate individual students' skill strengths, behavior weaknesses, and performance levels.

Several researchers have noted that behavior assessments require various methods for accessing data in order to yield a complete and a comprehensive analysis of the student's behavior. "Various authorities (Hendrickson et al., 1996; Salvia & Ysseldyke, 2001; Ysseldyke & Christenson, 2002) recommended the use of multiple approaches to collecting data with which to design an intervention for a target student" (Watson et al., 2011, p. 336). Behavior can be measured in an indirect or a descriptive format, or a combination of the two. Indirect formats use surveys, rating scales, interviews, and questionnaires. Descriptive observation measures the student's behavior in the environment and the assessor collects data regarding the student's behavior and the variables that contributed to the behavior (McIntosh et al., 2008).

What are the phases of assessment for the FBA? According to Cooper et al. (2007), an FBA can be classified into three components: (a) indirect assessment, (b) descriptive assessment, and (c) functional (experimental) analysis. These components can work independently to measure behavior, as well as collectively to provide a more in-depth analysis of the environmental variables that influence the student's behavior.

There are a variety of types of indirect measurements. In the indirect assessment phase of the FBA, the evaluator gathers information from surveys, interviews, documentation of history, and rating scales. Indirect measures can be standardized, allowing them to be generalized and consistent across different settings, people, and events. Other indirect tools, such as interviews, may not have a psychometric standardization component; however, they may rely on the perception of the interviewee and the interpretation of the interviewer. Some tools do have a

format for self-evaluation; however, these are based upon the person's opinion of himself or herself. Perceptions about behavior often take on a qualitative approach to data analysis. Indirect tools assess the respondent's perspective and opinion of his/her behavior, which is a subjective type of measurement (Hofstadter-Duke, 2011).

Descriptive observations are direct measurements of a student's behavior. This type of data collection is often both quantitative and qualitative. The type of quantitative measurements used in behavior assessment is used to increase objectivity, such as time samples, event recording, frequency recording, or scatter plots. Quantitative measurements can be graphed and provide a numerical analysis of the behavior observed. According to Cooper et al. (2007), the qualitative component of the descriptive phase is often measured in what is referred to as ABC data. ABC data refers to the antecedent, behavior, and consequence behavior pattern, followed by the hypothesized function of the behavior. This component of the analysis is based upon the assessor's perception and interpretation of the student's behavior as it relates the environment.

In order to increase objectivity during the FBA process, the behavior's hypothesized function can be taken into further evaluation through manipulating conditional variables called the functional analysis (FA). This is the analog or the experimental phase of the assessment, where variables are manipulated and tested to measure the function of the behavior. For the most part, the experimental phase requires an assessor that is highly skilled in manipulating variables and testing the hypothesis. There are four conditions of testing: contingent attention/access condition (positive reinforcement), contingent escape condition (negative reinforcement), play condition (control), and alone condition (automatic reinforcement). FAs are rarely conducted in the school setting due to the lack of controlling variables.

A study by Hofstadter-Duke (2011) examined a FA of behavior excess using academic deficits as replacement behaviors for teaching a new skill. Behavior excess are maladaptive behaviors that a student displays that needs to decrease in frequency and intensity. Two FAs were conducted. In the first participant the discriminated stimulus, or the material given to the student, was unknown to the subject. The data revealed undifferentiated function that was possibly due to the lack of stimulus control the discriminated stimulus had over the behavior. Another participant, the contingency conditions were applied to academic responding and the functions were consistent. The explanation between the participants was the discriminated stimulus had stimulus control, manipulating the conditions produced consistency with the function of behavior.

The results are potentially important findings. The data shows a connection between the maladaptive behavior's function maybe directly tied to the student's academic deficits. The Academic deficits may match and be consistent to the maladaptive behavior function so the identification of the functionally equivalent replacement behavior (FERB) is paired, thus showing the connection between academic deficits and behavior excesses (Hofstadter-Duke, 2011).

What are psychometric properties? Although all components of the FBA process are invaluable, increased standardization, accountability, transparency, and a systematic method of collecting data are key to increasing the validity and reliability (test-retest and internal consistency). Subjective measurements are beneficial during this analysis; however, increased objectivity can provide more consistency and standardization across all assessors instead of relying on subjective perceptions. Measuring the psychometric properties of behavior tools can

augment the classroom educator's direction, insight, reference point, and analysis during the FBA process (Cressey, 2010).

Assessments that are considered standardized have met psychometric properties guidelines and have been measured using many subjects. According to Cressey (2010), Dixon (1985), and King (2011), psychometric properties measure validity, reliability, covariance, item factoring, correlation coefficients, and other statisical equations for cross referencing among many subjects of an identified population. Psychometric properties refer to the study of theory and technique of psychological measurements. Quantitative properties are used to establish the reliability and validity of educational or psychological assessments based on the identified constructs that the assessment is said to test (Cozby, 2006). Related to the measurements of validity and reliability, a variety of different statistical methods will provide a numerical figure for data analysis of the assessment in the methods section.

Summary

Classroom behavior problems can impede students' learning. Some students' problem behaviors are more serious and severe and present challenges to both their and their peers' ability to achieve academically. Federal laws have mandated that when students demonstrate behaviors that interfere with learning, they must receive the opportunity for an extensive behavior assessment through a skilled educator who will conduct an FBA to determine the environmental variables and the purpose the behavior serves. Although the FBA process does show evidence of identifying the student's function of behavior, it requires a skilled practitioner to analyze the complexities of behavior in a classroom setting. In addition, the FBA traditionally examines the problem behavior to obtain information about the behavior's functions, triggers, consequences, and intensity, as well as the student's deficits. Although the analysis of such behavior is important, additional

evaluations in the student's academic behaviors and adaptive behavior skill levels are needed to provide a better comprehensive analysis of the student's strengths and weakness. A more in-depth study on the student's maladaptive behaviors as well as measurements for adaptive skills can better inform the practitioner of skill deficits and skill performance issues that can be identified for teaching the appropriate replacement behavior. Although the FBA is an effective process when used appropriately, further assessment of the student's strengths and abilities may provide better insight into providing the student with PBS with a focus on adaptive academic behaviors as replacement and teaching skills. Decreasing the frequency of inappropriate behavior and increasing the frequency of academic behavior skills will provide an opportunity for academic success.

Chapter Three: Methodology

Overview of Research Design

The purpose of this study was to evaluate the impact, influence, and efficacy of a new behavior assessment tool for classroom educators. This tool translates the teacher's perceptions of the student's behaviors into an objective measurement. This study examined the psychometric properties of an academic behavior assessment tool, the CBCS (Crump, 2011), developed by the researcher, that provided quantitative measurements for maladaptive behaviors and identified adaptive academic behavior skills as replacement behaviors needed for academic success.

Research Design and Methodology

The following sections offer a description of the research design and a secondary analysis of quantitative data collection of a behavior instrument. This study examined The CBCS (Crump, 2011) to answer the following research question: What is the factor structure among the 25 survey items from the academic behavior assessment tool?

Rationale

This study used quantitative methods to examine the impact that CBCS (Crump, 2011) had on helping teachers identify maladaptive classroom behaviors and appropriate replacement skills. The quantitative approach used psychometric properties to measure validity, reliability, co-variance, item-factoring, correlation coefficients, and other mathematical equations to determine if the CBCS measures the behaviors and the skills that are needed for classroom success. This was done using principal components factor analysis, selecting eigenvalues greater than 1.0 and then using a varimax rotation to simplify the factor structure.

Site

This study used secondary data taken from ninety educators that filled out the CBCS over the last 2 years within an urban school district that serves more than 86,283 students. According to the school district's demographic analysis, in 2009-2010, the district had 8,298 students identified receiving Special Education services. The students that have been identified through the special education services are the targeted population that IDEIA and other laws mandating that an FBA is needed for the development of a functionally-based BIP.

The urban district is located in a beach city that is a suburb of a larger metropolitan area. It is responsible for 97 traditional K-12 schools. In the last 10 years, 2004-2014, gentrification of economically challenged areas in the city has been the focus of urban development. The city's development plan has increased the cost of living in areas that have historically been identified as lower income areas. The down-turn of the housing market has also influenced where students live. The traditionally lower income areas have an increase of students. The schools located in these areas experience over-crowding. The more affluent areas of this city are losing school enrollment due to the economic climate of the housing market, causing a decline in population at these schools. To balance out enrollment, the district has encouraged students to attend their school of choice.

Instrumentation

The CBCS (Crump, 2011; see Appendix A), developed by the study's researcher, is a behavior survey instrument that identifies and measures maladaptive behaviors and the academic behaviors skills needed as replacement skills. This instrument's responses were given by a classroom educator, who shared his/her perceptions of student performance based on observations in the classroom environment. This tool helped educators, (n = 90), measure the

maladaptive behaviors and academic behaviors skills needed to enhance classroom performance. The assessment tool translated subjective observations into a quantitative scale. The scale measured the teacher's perception of each student's functioning behavior level in the classroom environment and provided a scaled score.

The demographic variables that were measured were the students' age, grade, class level (general education or special day class), eligibility, and gender. These variables were measured against the 25 items questionnaire of the CBCS (Crump, 2011). The psychometric property calculations of the variables produced the Cronbach alpha reliability score, the eigenvalues, scree plot, regression analysis, analysis of variance (ANOVA), and factor analysis of the 25-item scale. The CBCS measured the variables on a 25-item questionnaire. Each prompt measured the participant's answers on a continuum scale of 0-4, 0 meaning that the student is more likely to display maladaptive behaviors, and 4 meaning that the student displays adaptive academic behaviors that are needed for academic readiness and support. Each number on the scale represents 25% range. The number 0 measures 0%; 1 represents 25%; 2 represents 50%; 3 represents 75%; 4 represents 100% The possible percent score range is 0-100%. The prompts were designed to measure each student's ability to function appropriately in the classroom environment, based upon the presence or absence of the student displaying that item's identified skill or behavior.

Participatory Action Research

The researcher originally developed the behavior tool during her doctoral coursework studies. The tool was the driving force of the Participatory Action Research (PAR) study. The purpose of the PAR project is for educators to identify an issue within their work/school site. The PAR approach emphasizes participation of the researcher and an action plan to resolve the

conflict for resolution. The PAR project seeks change through collaborative inquiry, data collection, and reflections. The PAR research was conducted over two semesters, focusing on practitioners identifying problems in their direct educational influence and providing a solution to those challenging educational issues. The researcher's PAR project focused on teachers reporting that some of their students are not prepared to be taught the academic standards due to a lack of adaptive academic skills and functioning in the classroom environment. Teachers reported witnessing increased maladaptive behaviors in the classroom. Many of these behaviors focused on escaping from challenging assignments and gaining teachers' or peers' attention.

The PAR study examined and identified the challenging behaviors educators observed in the classroom and what skills appeared to be lacking in the students' repertoire. From that information, a academic behavior assessment tool was developed to help educators identify and measure the maladaptive and adaptive academic behaviors skills needed to improve classroom performance. The tool was developed and classroom educators help select and modify the item questions that were appropriate for the behavior tool. The research was conducted during coursework over the year. Each cycle required a research hypothesis and research analysis, followed by *action* of the practitioner/researcher in her educational environment (see Table 1).

Overall PAR Results

Overall, the PAR results demonstrated a need for such an assessment tool to help educators identify classroom behaviors. Educators tend to have few problems reporting the maladaptive behaviors that are impeding their students' academic success; however, they do need assistance identifying the appropriate adaptive replacement skills that need to be taught in order to reduce problem behavior. Maladaptive behaviors are often displayed when the student does not have the appropriate skills for classroom functioning. Adaptive academic skills are co-

variant measurements of the target behavior. As skill levels for the adaptive academic behaviors increase, there is a decrease in maladaptive behaviors; the converse is also true. Problem behaviors negatively influence learning behaviors, which adversely influences students' academic achievement (Dominguez, 2010). If teachers are to change maladaptive behaviors, it is imperative that they identify and teach the appropriate replacement skill needed for academic success.

Table 1

PAR Study Overview

Diagnosis: Questions and Data	Research Studies	Measurements of Actions	What has been learned?
What adaptive skills are needed within the classroom structure for a student's academic success? What are the maladaptive behaviors that impede learning? How to conduct and develop a behavior assessment tool? What was the Education panel perceptions and review of the developed tool? What have others researchers done to developed research assessment tools?	Blair, Fox, & Lentini, 2010 DeVellis, 1991 King, 2011.	1) Interviews 2) Collected and reviewed data from published Journals 3) Interviewed teachers for behaviors that are displayed in the classroom. 4) Interviewed teachers for the Adaptive skills needed for academic success. 5) Developed assessment tool survey. 6) Development of the assessment tool. 7) Educator/Panel review of developed survey questions. 8) Reviewed journal articles and materials related to researcher developed tools.	1) The teachers' perceptions of behaviors. 2) The adaptive skills and maladaptive behaviors. 3) How to develop an assessment tool based upon the identified behaviors that teachers reported in the survey. 4) It is important to make sure that the assessment tool is measuring the variables that researcher believes is being rated or measured. 5) That the researcher is capable of developing an assessment.

Protection of Human Subjects

The protection of human subjects in this research complied with all state and federal rules, guidelines, and laws. Precautions were taken to ensure all participants' identities were protected. All information that could possibly identify participants, school location, or any other personal reference was coded so that no one but the researcher can identify any demographical data of the participants.

Data Collection/Data Management Procedures

During the PAR study, an expert panel validated the survey questions of the CBCS (Crump, 2011) as it related to classroom maladaptive behaviors, academic behaviors, and face validity. The panel was composed of a special education educator, a general education teacher, a school psychologist, a special education administrator, and a behavior analyst.

The data analysis for this study required inferential statistics and descriptive statistics. The mean and standard deviation were calculated to provide the measurements between each response within that domain to show the variability between each measurement.

The inferential statistics were the data on the sample size of the overall population in the study. This was a comparative study between the variables and the 25 items of the survey. Testing the hypothesis on the sample population, inferential statistics allowed for the inference or the prediction that this study's data could be generalized to the population with confirmatory data analysis. The psychometric property calculations of the variables produced the Cronbach alpha reliability score, the eigenvalues, scree plot, regression analysis, ANOVA, and the factor analysis of the 25 items.

Positionality

I am currently an Educational Behavior Specialist and have been working with students on the Autism Spectrum and behaviors for over 25 years. The increased rate of Autism and problem behavior across all eligibilities has caused much attention to be placed on interventions and appropriate analysis in the school system. Students with disabilities often learn differently and the educational system may have difficulty meeting the behavioral demands and accommodations needed for these students. Through my professional journey as an educator focusing on behavior in the school environment, there appears to be a possible disconnect

between the science of behavior/behavior change process and the educational component of learning. Through this experience of analyzing and observing the challenges teachers face when understanding educational behavior, I have developed my own academic behavior assessment tool that helps teachers to independently address and identify behaviors and the replacement skills needed to increase academic success.

Chapter Four: Data Analysis and Findings

The purpose of this study was to measure the factor structure of an academic behavior assessment tool that identified the appropriate replacement skills for behaviors that impede academic success for the development of the BIP during the FBA process. An academic behavior rating scale was used as the experimental instrument from which 25 items were evaluated and measured statistically through the process of refinement. An analytical and empirical approach assisted with the evaluation of the scale with a focus on three basic principles:

1. ABA and positive behavior theories and constructs focused on classroom behavior functioning.
2. The balancing of scale homogeneity variance with generalization.
3. The evaluation of variance structure of set correlation coefficients with eigenvalues.

Behavior/skill domains were used to measure the operational index of the rating scale. Both theoretical and empirical research of classroom academic behavior functioning was used for the operational index. The following 14 characteristics of classroom academic behavior functioning were chosen from research and literary evidence based on the identification of adaptive skills, executive function, and reduction of behaviors needed for academic success:

1. Social Interaction – This domain describes the student's appropriate interactions with other students (Hanley et al., 2007).
2. Functional Communication – This domain describes the student's ability to communicate desires and to get those needs met on a functional level (Hanley et al., 2007; Schieltz et al., 2011).
3. Executive Functioning/Self-Regulation –

   a. Executive Functioning is the mental process that enables planning, focus attention, remembering instructions and multi-tasking (Sasser & Bierman, 2012).
   b. Self-Regulation/Control helps students set priorities and resist impulsive actions or responses for positive behavior and healthy choices. This category describes the student's ability to maintain self-control and not exhibit behaviors that can disrupt the classroom environment (Sasser & Bierman, 2012).

4. Transitions/Activity and Location – This domain describes how the student moves from one location to another or from one activity to another (Angell, Nicholson, Watts, & Blum, 2011).
5. On-Task Performance – This domain describes the student's appropriate academic behavior related to focus and attention during teacher instructed activities (Bennett, Reichow, & Wolery, 2011).
6. Response Latency – This domain describes the length of time that it takes for a student to start a task after the assignment has been given (Angell et al., 2011).
7. Task Completion – This domain describes whether the student completes the class assignment within the given allotted amount of time (Bennett et al., 2011).
8. Asking for Help/Clarification – This domain describes whether the student requests help or asks for clarification in the completion of a task/assignment (Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2003).
9. Following Class Routine – This domain describes the student's ability to follow the flow and structure of the classroom environment (Gobbo & Shmulsky, 2012).

10. Compliance – This domain describes how well the student complies when class instructions are given (Hanley et al., 2007).
11. Aggression – This domain describes if the student engages in harmful aggressive episodes towards others, self (SIB), or property (Schieltz et al., 2011).
12. Restricted Patterns of Behavior – This domain includes both disruptive and non-disruptive repetitive behaviors that appear to have no external reward. These can include finger tapping, foot swinging, spinning objects, rocking, hand flapping, pacing, humming/singing to self, and staring at others' faces (Bennett et al., 2011; Schieltz et al., 2011).
13. Inappropriate Vocalization – This domain includes disruptive vocal behaviors such as laughing inappropriately, making disruptive noises, screaming, cursing, and speaking out of turn. Inappropriate vocalizations also include engaging others in unrelated conversations (Schieltz et al., 2011).
14. Elopement – This domain is described as student wandering, walking around, or leaving the classroom without permission; and there appears to be no direct purpose or intent associated with the movement. Elopement can also be described as a direct intent to leave the assigned area or the classroom without permission. (Bennett et al., 2011).

A total of 90 teachers (n = 90) filled out the CBCS (Crump, 2011) during the indirect phase of the FBA. The indirect phase is a process of gathering of informational data, such as interviewing, archival information, and survey questionnaires. This phase assists with identifying the student's target behaviors, strengths, and possible reinforcements and contingencies available in the classroom environment.

This study measured the psychometrics and conducted a statistical analysis of the survey assessment tool that was used during the indirect phase of the FBA process. The study measured five variables of the students' demographic data from the teachers' surveys: gender, level of class placement, eligibility, age, and grade of student. There were 25 complete questions taken from the CBCS (Crump, 2011). Both Descriptive Statistics and Statistical Inferences were measured and calculated to determine factor structure and the psychometrics data.

Descriptive Statistics

The educators filled out the survey related to the 90 students on the demographics and frequency counts for selected variables. The students' data and demographics are displayed in Table 1. There were a total of 72 boys (80.0%) and 18 girls (20.0%) in the study. Thirty-two (35.6%) of the students were in a Traditional General Education Class, and 58 (64.4%) were in a Special Day Class. Two-thirds of the students (67.8%) were considered "Autistic-like or on the Spectrum." The ages of the students ranged from 4 to 14 (M = 8.33, SD = 3.27). The grade level of the students ranged from Pre-K to ninth grade (*Mdn* = second grade level). Table 2 provides the percent breakdown of the number of participants (n = 90) related to the variables that were measured in the study.

The 25 items were sorted by ascending means (Table 3). These ratings were given using a 5-point Likert scale: 0 = *Least favorable behavior* to 4 = *Most favorable behavior*. The lowest ranked CBCS item was "Starts Non-Preferred Task within Appropriate Amount of Time" (M = 1.20), which was interpreted as the hardest task for the students to accomplish. The highest rated item was "On-Task with Preferred Activities" (M = 2.71), which was deemed the easiest task for students to perform and execute. Table 3 provides data on the Spearman rank-order of the survey item from the most difficult task to the easiest task for the students to perform.

Table 2

Frequency Counts for Selected Variables

Variable	Category	*n*	%
Gender	Boy	72	80.0
	Girl	18	20.0
Type of Class	Traditional Day Class	32	35.6
	Special Day Class	58	64.4
Type of Eligibility	Autism	61	67.8
	Other	22	24.4
	None	7	7.8
Age [a]	4 to 5	22	24.4
	6 to 8	32	35.6
	9 to 10	9	10.0
	11 to 13	21	23.3
	14	6	6.7
Grade [b]	Pre-K and K	24	26.7
	1st to 3rd	34	37.8
	4th and 5th	5	5.5
	6th to 8th	21	23.3
	9th	6	6.7

Note. $n = 90$, [a] $M = 8.33$, $SD = 3.27$, [b] Grade: *Mdn* = second grade

Table 3

Descriptive Statistics for CBCS Items Sorted by Ascending Means

Item	*M*	*SD*
Starts Non-Preferred Task within Appropriate Amount of Time	1.20	1.22
Appropriate Functional Communication	1.29	1.30
Considered Focused	1.44	1.05
On-Task with Non-Preferred Activities	1.44	1.04
Attempts the Task to Face the Difficult Challenge	1.46	1.27
Completes Non-Preferred Tasks Independently	1.63	1.11
Appropriately Asks for Help	1.72	1.31
Exhibits Impulse and Self Control	1.78	1.18
Compliant when Teacher Gives Verbal Instructions to Whole Class	1.78	1.10
Engaged with Peers	1.79	1.27
Engages and Participates in Class Activity	1.82	1.24
Appropriately Engages with Peers within Close Proximity	1.88	1.18
Displays Appropriate Classroom Behavior	1.89	1.00
Engaged with Peers in Social Interaction	1.95	1.40
Participates Appropriately in Class Routine	2.07	1.16
Appropriate Transitions from Activity to Activity	2.07	1.16
Compliant with Following Class Routine	2.14	1.01
No Repetitive Behavior Observed	2.21	1.43
No Repetitive/Stimming Behavior	2.28	1.47
Appropriately Social Distance in Social Interactions	2.32	1.32

(continued)

Item	*M*	*SD*
Appropriate Transitions from Location to Location	2.35	1.29
Starts Preferred Task within Appropriate Amount of Time	2.38	1.24
No Aggressive Behaviors	2.48	1.22
Verbal	2.66	1.38
On-Task with Preferred Activities	2.71	1.05

Note. $N = 90$. Ratings based on 5-point metric: 0 = *Least favorable behavior* to 4 = *Most favorable behavior*.

Answering the Research Question

The primary research question asked "What is the factor structure among the 25 survey items from the academic behavior assessment tool?" This question was answered using a principal components factor analysis with a varimax rotation on the 25 Likert scale items. The model selected eigenvalues greater than 1.0, which resulted in a four-factor solution that accounted for 69.81% of the variance. Inspection of the factors found large general first factor (eigenvalue = 13.07, 52.26% of the variance) and smaller second (eigenvalue = 2.19, 8.78% of the variance) through fourth (eigenvalue = 1.02, 4.08% of the variance) factors. Given that the first factor was six or more times larger than any of the factors, a decision was made to retain only one factor but retain all 25 items to create a total score. The factor analysis examined the correlations or the relationships between the demographic variables. The overall themes or factors produced from the 25 point scale resulted in one main theme. The behaviors and skills identified in the assessment tool were consistent with academic behaviors. Before conducting this study, the researcher originally ascertained that the assessment tool was measuring three different thematic areas, which included academic behaviors with sub-sets. The implications of one behavioral theme with sub-sets within the classroom environment will be discussed further in the final chapter.

The psychometric characteristics and data are displayed in Table 4. The total score had a mean rating of $M = 1.95$ ($SD = 0.87$) based on the 5-point scale (0 = *Least favorable behavior* to 4 = *Most favorable behavior*). When using an assessment tool it is important that the tool will

consistently yield the same results pertaining to that same student. Otherwise, it can be unethical or can be misleading to include the information in the data collection process. For this study, the Cronbach alpha was used to measure internal consistency reliability. According to Everitt (2002), reliable and respectable Cronbach alpha range from .70-.80 and scores ranging .80-.90 are very good. For the CBCS, internal consistency reliability coefficient measured $r = .96$, suggesting that the new scale had a high level of internal reliability (Cozby, 2006; Everitt, 2002). Table 4 provides data on the reliability (α = Cronbach Alpha Reliability) for the total score of the 25 items.

Table 4

Psychometric Characteristics for the Total Score

Scale Score	Number of Items	*M*	*SD*	Low	High	α
Total Score	25	1.95	0.87	0.30	3.92	.96

Note. *N* = 90. Ratings based on a 5-point metric: 0 = *Least favorable behavior* to 4 = *Most favorable behavior.*

Inferential Statistics

Inferential statistics are used to determine if results from a sample data reflect what would happen if we conduct the experiment again with multiple samples (Cozby, 2006). The process of drawing, or inferring, the difference made in a sample means reflects a true difference of the population mean. The inference made from these data can also drive judgments of the population and groups and the ability to generalize the findings generated from the data to other conditions.

Additional Findings

The ANOVA was calculated due to the multiple levels of demographic variables and a factorial design for the number of variables. The data results show the one-way ANOVA comparisons for the total score based on the selected demographic variables. Inspection of the

results found no significant differences in the students' total score based on their gender (p = .12), type of or level of class (p = .19), or eligibility (p = .38). The overall total score was not reflective of the teachers' knowledge or perception of the students' demographic data. Table 5 presents the results of the ANOVA used to measured the significance of the students' total score in relation to the demographic variables.

Table 5

Comparison of Total Score Based on Select Variables: One-Way ANOVA Tests

Variable	Categories	*n*	*M*	*SD*	H	*F*	*p*
Gender					.16	2.44	.12
	Boy	72	1.88	0.79			
	Girl	18	2.23	1.12			
Type of Class					.14	1.79	.19
	Traditional Day Class	32	2.11	0.90			
	Special Day Class	58	1.86	0.85			
Eligibility					.15	0.97	.38
	Autism	61	1.92	0.84			
	Other	22	1.90	0.88			
	None	7	2.39	1.09			

Note. N = 90. Ratings based on a 5-point metric: 0 = *Least favorable behavior* to 4 = *Most favorable behavior.*

A regression analysis is a statistical process for estimating the relationships among the variables. Table 6 displays the results of the multiple regression model that predicted the student's total score based on five demographic variables. The full model was not statistically significant (p = .35) and accounted for 6.3% of the variance in the dependent variable. Inspection of the beta weights and dependent variable found none of the five independent variables to be significantly related to the individual student's total score. Table 6 provides data from the regression model that measures the statistical significance of the relationship between the variables and the individual student's total score.

Table 6

Multiple Regression Model Predicting Total Score Based on Select Variables

Variable	*B*	*SE*	β	*p*
Intercept	2.00	0.52		.001
Age	0.02	0.03	.07	.55
Gender [a]	0.38	0.23	.17	.10
Class [b]	-0.16	0.21	-.09	.44
Autism [c]	-0.40	0.38	-.22	.29
Other [c]	-0.44	0.42	-.22	.30

Note. $N = 90$.
Final Model: F (5, 84) = 1.14, $p = .35$. $R^2 = .063$.
[a] Coding: 1 = *Boy* 2 = *Girl*
[b] Coding: 1 = *Traditional Day Class* 2 = *Special Day Class*
[c] Coding: 0 = *No* 1 = *Yes*

As an additional series of analyses, Spearman rank-ordered correlations were used to compare the total score plus the 25 individual CBCS items with four selected demographic variable: age, gender, type/level of class, and whether the student had autism/autism-like or other eligibility. Spearman rank-ordered correlations were selected over the more common Pearson correlations due to the ordinal ratings given for the 25 individual items. For the resulting 104 correlations, nine were found significant at the $p < .05$ level. Specifically, age was positively correlated with "Appropriate Transitions from Location to Location" ($r_s = .21$, $p = .05$). Female students were given more favorable ratings for "Appropriate Transitions from Activity to Activity" ($r_s = .21$, $p = .04$). Students in traditional classrooms had more favorable ratings for: (a) "Appropriate Functional Communication" ($r_s = -.33$, $p = .002$), (b) "Engaged with Peers" ($r_s = -.25$, $p = .02$), and (c) "No Aggressive Behavior" ($r_s = -.24$, $p = .02$). Non-autistic students were given more favorable ratings for: (a) "verbal" ($r_s = -.34$, $p = .001$), (b) "Engaged with Peers" ($r_s = -.21$, $p = .05$), and "Engaged with Peers in Social Interaction" ($r_s = -.26$, $p = .01$).

However, the identified spectrum students were given more favorable ratings for “Compliant Following Class Routine” ($r_s = .22$, $p = .04$).

In summary, this study used archival data from educators answering 25 survey items on students ($n = 90$) to measure the factor structure of an academic behavior assessment tool that identified the appropriate replacement skills for behaviors that impeded academic success for the development of the BIP during the FBA process. The results of the principal factor structure found the 25 items yielded a single general factor with a high level of internal reliability .96 (see Table 4). Additional correlations found the scale to be largely unrelated to the students’ age, gender, type of class setting, or diagnosis/eligibility. In the final chapter, these findings will be compared to the literature, conclusions and implications will be drawn, and a series of recommendations will be suggested.

Chapter Five: Summary, Conclusion, and Recommendations

This chapter presents a summary of the quantitative study and important themes that emerged, as well as conclusions drawn from the data presented in Chapter Four. It provides a basis for discussion for implications and recommendations for further research to provide the academic behavior foundation students require to perform successfully in the classroom environment and in life.

Summary

Statement of problem. During the FBA process, assessment tools and analysis often require the assessor to possess specialized credentials or training in behavior analysis to address problem behaviors effectively. Unfortunately, the limited behavioral training and knowledge that most classroom educators have received leaves them struggling to address behavior needs in the classroom environment. Many educators lack the guidance of a comprehensive FBA process for developing a quality BIP. Many educators do not have any training in behavior analysis prior to teaching and are required to develop and implement behavior plans without the skills needed for changing behavior (Browning-Wright et al., 2007). For a quality BIP to be developed, the educator must identify the (a) maladaptive behavior, (b) the function of that behavior, (c) the FERB, (d) and the intervention. The lack of systematic identification of problem behavior and evaluating the success of interventions can render the teacher ineffective in teaching FERBs and maintaining classroom management.

Empirical research and practices are necessary to resolve the discrepancy between what is mandated by law and the implementation of a technical process. This discrepancy poses a challenge to the classroom educator who may be limited in skills, knowledge, and training in how to execute a behavior change process in the classroom environment. Without proper

guidance and tools that are in-line with both federal mandates and practical classroom application for behavior change, educators must continue to use default methods that are contrary to and out of compliance with ABA, PBS, and IDEA.

Statement of purpose. The purpose of this study was to measure the factor structure of an academic behavior assessment tool that identified the appropriate replacement skills for behaviors that impede academic success for the development of the BIP during the FBA process. The purpose is to provide educators with a reliable and valid measuring tool for replacement skills.

Research methodology. A quantitative approach was used in this study, which allowed the researcher to understand the psychometrics of the academic behavior assessment tool. A classroom educator answered the 25 question survey, each item of which was scored on a continuum scale. The classroom teacher evaluated 90 students, resulting in 90 (n = 90) behavior assessment surveys. The demographics of the students were 72 boys (80%) and 18 girls (20%). Thirty-two (35%) students were in the General Educational class, and 58 (64%) were in the Special Day Class. For eligibility, 61 (67%) were Autistic/Autistic-Like, and 22 (24%) were classified as "Other." The ages of the students were 4-5 (24%), 6-8 (24%), 9-10 (10%), 11-13 (23%), and 14 (6%).

The academic behavior tool is an indirect assessment instrument designed to measure the academic behavioral level of both adaptive skills and maladaptive classroom behaviors. This tool measures academic behaviors in the areas of social interaction, functional communication, self-regulation, transitions, on-task performance, response latency, task completion, requesting help/clarification, following class routine, and compliance. The maladaptive behaviors identified and measured were aggression/SIBs, restricted patterns of behavior, inappropriate vocalizations,

and elopement. This assessment tool can be utilized as a screening tool or during the descriptive phase of the FBA in which the assessor hypothesizes the function of the maladaptive behavior.

Major Findings

Through this study, the researcher developed a deeper understanding of the statistical analysis and psychometrics of the CBCS (Crump, 2011). The objective of this study was to answer the research question, What is the factor structure among the 25 survey items from the academic behavior assessment tool? In an analysis of the data related to the CBCS, both the descriptive and inferential statistics support the finding that educators using a tool that identifies academic behaviors in the classroom setting, can benefit students with identifying the skills that are needed to replace maladaptive behaviors. The tool's Cronbach alpha reliability measured at .96.

No significant correlation was found between the identification of demographic variables and the statistical analysis of the individual items. The importance of this finding is that the CBCS is focused on the identification of target behaviors and appropriate replacement academic behavior skills as a source of behaviors. This finding shows that the tool is consistent with the purpose of the development of the assessment tool, to be used to only measure target behaviors and academic behavior skills, regardless of the student's eligibility, age, gender, level of class placement, or grade level.

These statistical findings are consistent with identifying one thematic area described as academic behavior skills. With the eigenvalue focused on one main theme, the 25 items were related to the first common factor and was six or more times larger than any of the factors. Therefore, a decision was made to retain only one factor and retain all 25 items to create a total score. The eigenvalue gives the variance of linear function of the variables (Everitt, 2002),

providing the theme components of a set of variables. The theme was consistent among all the 25 items on the continuum. The overall theme related to the questions was academic behavior skill functioning for classroom success. Due to the one eigenvalue main factor, all 25 items of the survey were retained as a measure for academic behavior skills and school readiness performance.

Theoretical implications. The theoretical foundations of this study were based in PBS/RtI and ABA. Both theories are addressed and woven within federal and state mandates to help educators provide behavioral support to students that display behaviors that impede learning. These foundational theories emphasize proactive interventions and teaching socially appropriate skills, asserting that the best way to stop a behavior is to stop the behavior before it starts.

Originally, the CBCS behavior assessment tool was designed to help educators during the Secondary and Tertiary/third level of the RtI model when students were engaging in extreme behaviors. At the higher levels of the RtI model, the FBA was conducted for the development of the behavior plan that had FERBs; However, after inspecting the statistical analysis and psychometrics of the data, theoretically, the tool may have more impact on student behavior if it is used as a screening tool or as a survey to identify academic behavior strengths and weaknesses and possible executive functioning skills at the RtI/Universal Level. Early detection of academic behavior deficits that may increase problems behaviors in the future may provide the classroom educator with a proactive comprehensive behavior management system and lesson plans for differentiated instruction.

School/academic readiness implications. The National Center for Education Statistics (Denton, 2000) reported that children that do lack necessary pro-social/ adaptive skills upon

entering kindergarten demonstrate increased aggression and display behaviors such as fighting, yelling, and poor social skills and peer interactions. The children can potentially have increased academic difficulties and have a harder time adjusting to school routines and tasks. Before entering kindergarten, pre-schools are the main structure that is designed to prepare students for the classroom and academic readiness. If the children are transitioning into kindergarten without school-readiness skills, one wonders if these skills are even being taught in the pre-school setting.

A study by Blair (2002) investigated the neurobiological development of children's functioning as related to school readiness when entering or transitioning into kindergarten. Due to executive functioning abilities and academic and social competency in the school environment, pre-school programs should expand program curriculum to focus on the instruction of self-regulatory, social, and emotional competency. The focus of early intervention/education programs can increase students' self-regulation and attention skills pertaining to emotions. The prefrontal cortex is associated with higher order cognition, emotional control and is responsible for executive functioning skills that is needed for school readiness. Executive functioning is associated with attention, memory, inhibitory control, and problem solving and behavior. Early education programs that focus on school readiness also have an effect on reducing grade retention during elementary school years. The key to such programs is the gradual development of abilities that facilitate learning, such as being able to sit quietly, focus on work, pay attention, and to directions. Although maturity of the student may play a role with appropriate functioning, the neurobiological and behavioral theoretical approaches focus on the child's characteristics and skills that can be taught and nurtured for establishing school readiness and school achievement. Interestingly, the interventions associated with proven behavior change models are also the same

interventions that can increase executive functioning levels, problem-solving skills, and academic behavior skills.

As students develop and acquire readiness skills for learning, having a fundamental understanding of all students' strengths and deficits and their baseline measurements is necessary to ensure high functioning in all domains of the educational process. Assessments of baseline performance on academic task are needed for appropriate skill building and scaffolding. The same can be said for maladaptive behavior, adaptive academic behaviors, and executive functioning skills. Without the proper identification and evaluation of these skills, students' academic achievement will suffer, even under the RtI model. Students will be expected to access the curriculum without the needed tools required to self-regulate, stay on-task, follow instructions, and complete tasks (Filter & Horner, 2009; Hanley et al., 2007; Cressey, 2010; Dominguez, 2010).

Appropriate assessments under the RtI model that provide the link among maladaptive behaviors, academic performance, executive functioning process, and academic behavior skills are needed for a comprehensive evaluation of students' abilities. An assessment tool such as the CBCS (Crump, 2011) is needed for the identification of and marriage among academic performance, target behaviors, and academic behavior skills.

Educational programs and initiatives: Future research The research related to academic behavior skills, executive functioning, school readiness and behavior problems could be applied for success with students that have been identified as disadvantage. The disadvantage students range from low socio-economic, learning impaired, culturally at a disadvantage, gender-bias, drug exposure, criminal activity, and the location of where the student lives. Various educational and initiative programs across the nation target high-risk youths, primarily young

men/boys of color. These programs are focused on enhancing academic and behavioral success during the students' educational journey. Disadvantaged youths that are not given early intervention and do not receive academic and behavioral support are more likely to be suspended or expelled, or to drop out of school, turning students toward the judicial system. Programs such as Head Start My Brother's Keeper have made a concerted effort to improve the academic, behavioral, and social outcomes of boys and young men of color, as well as combat issues such as the school-to-prison pipeline and addressing the third grade *Learning-to-Read and Reading-to-Learn* that students face when they are not accessing the curriculum and learning the standards needed to succeed.

Head Start is a federally funded education program that promotes the school readiness of young children from low-income families. The program supports the mental, social, and emotional development of children from birth to age 5. Head Start prepares pre-school aged children to transition to kindergarten. The Head Start framework focuses on five child development and early learning goals: language and literacy, cognition and general knowledge, approach to learning, physical development and health, and social and emotional development (Office of Head Start, 2014)

The Office of Planning, Research, and Evaluation (Morris et al., 2014) and the Office of Head Start (2014) conducted a study of the impacts of three enhancements to Head Start CARES (Classroom-based Approaches and Research for Emotional and Social skill promotion). This national evaluation of three program approaches to improving Head Start students' social and emotional competence explored the impact these enhancements/programs have on preparing preschoolers to transition into kindergarten. The primary foci of CARES were: (a) teachers' practices; (b) the climate of the classroom; (c) children's behavior regulation, executive function

skills, knowledge and understanding of emotions (*emotion knowledge*), and social problem-solving skills; and (d) children's learning behaviors and social behaviors (Morris et al., 2014).

The three enhancement programs of CARES were the Incredible Years, Preschool PATHS, and Tools of the Mind. The programs focused on teacher development for classroom instruction, behavior management, and the social and emotional development needed for students to be academically successful in the preschool environment and later in elementary school (Morris et al., 2014).

The results of the study demonstrated that two of the three enhancements of the CARES program did address and improve student and teacher performance in the domains of teacher practice, classroom climate, emotional knowledge and problem-solving, learning, and social behaviors. However, none of the enhancements focused on executive functioning or problem behaviors (see Figure 3). Further results show that the enhancements did not produce consistent impacts on pre-academic skills/academic behaviors during the pre-school Head Start year. No consistent evidence was found that these enhancements improved children's pre-academic skills during preschool or during the transition into kindergarten (Morris et al., 2014).

The data from this study suggest that the CARES Head Start program may increase the emotional and social competencies needed for student development in the school setting. However, the program did not increase or even address skill development in the areas of executive functioning and problem behaviors. Further results show that pre-academic skills did not produce consistent impacts in the classroom environment. The implications of a federal and national educational program such as Head Start not addressing these critical areas of executive functioning, self-regulation, behavior, and academic behavior skills may potentially have huge ramifications on students' ability to access the curriculum for academic success.

Outcome	The Incredible Years Trains teachers to create an organized classroom climate that supports children's behavior regulation in the context of positive teacher-child relationships	Preschool PATHS Trains teachers to use clearly outlined lessons to improve children's ability to recognize and regulate emotions, define problems, and consider the consequences of various choices	Tools of the Mind-Play Trains teachers to use adult-supported make-believe play and other activities to strengthen children's self-regulation
Teacher practice (observational assessment)			
Classroom management	X		
Social-emotional instruction	X	X	
Scaffolding			X
Classroom climate (observational assessment)			
Classroom organization			
Emotional support			
Instructional support		X	
Literacy			X
Executive function and behavior regulation[a]			
Executive function			
Behavior problems			
Emotion knowledge and social problem-solving skills (direct assessments)			
Emotion knowledge	X	X	X
Social problem-solving skills	X	X	
Learning and social behaviors (teacher reports)			
Learning behaviors	X	X	
Social behaviors	X	X	

NOTES: In each cell, "X" indicates that there was a statistically significant impact on that outcome. The dark gray cells represent primary targeted outcomes for the enhancement; the light gray cells represent secondary targeted outcomes.

[a]Executive function was measured using direct assessments. Behavior problems were measured using teacher reports.

Figure 3. Head Start CARES demonstration: Primary and secondary targeted outcomes in preschool, by enhancement. Reprinted from *Impact Findings from the Head Start CARES Demonstration: National Evaluation of Three Approaches to Improving Preschoolers' Social and Emotional Competence*, p. ES-7, by P. Morris, S. K. Mattera, N. Castells, M. Bangser, K. Bierman, & C. Raver, 2014, Retrieved from http://www.mdrc.org/sites/default/files /HSCares%20Impact_ExecSummary%20MDRC.pdf. Copyright 2014 by the Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Reprinted with permission.

My Brother's Keeper is a national initiative started by President Obama on February 27, 2014. On this date, President Obama announced that a task force would oversee and address the persistent opportunity gaps faced by boys and young men of color and ensure that all young people can reach their full potential. On May 30, 2014, the task force released a 90-day updated report including key indicators that would facilitate a comprehensive view of the environment and outcomes for boys and young men of color. The six areas of focus of the Task Force are:

entering school ready to learn, reading at grade level by third grade, graduating from high school ready for college and career, completing post-secondary education or training, entering the workforce, and reducing violence and providing a second chance (My Brother's Keeper Task Force to the President, 2014).

My Brother's Keeper's first two areas of focus are entering school ready to learn and reading at grade level by third grade. Both of these areas are centered on early intervention and what is needed to prepare students for a successful academic career. These goals are achieved by ensuring students enter school prepared to learn. By age 3, all students should have access to and attend high-quality preschools and early learning programs that train teachers in behavioral management strategies (My Brother's Keeper Task Force to the President, 2014.)

Reading at grade level by third grade also requires that students have skill sets that are rooted both in instructional and behavioral evidenced intervention for success. My Brother's Keeper suggests using evidenced based instructional practices that implement (a) universal screening for literacy; (b) routine progress monitoring; (c) multi-tiered, differentiated instruction using evidence-based reading strategies; (d) multi-tiered behavioral frameworks and evidence-based social and emotional supports; and (e) strong collaboration between general education and special education. (My Brother's Keeper Task Force to the President, 2014).

Most school systems across the nation have implemented a zero tolerance policy for behavioral infractions. This often pushes the offending students outside the classroom, exposing them to the criminal justice system in a phenomenon known as the school-to-prison pipeline. In an attempt to overcome the school-to-prison pipeline, a study by Gonsoulin, Zablocki, and Leone (2012) focused on a new approach to staff development that creates positive school communities/culture, yielding a system that supports youth development and minimizes punitive

consequences to problem behavior. This system is also based on the three-tiered behavior system and best practices. Gonsoulin et al.'s study found that this system resulted in a 60% reduction of police tickets given to youth and 66% less fights. A focus on prevention, guidance, and early intervention can lead to improved behavior and better outcomes for the community.

Future research with programs and initiatives such as Head Start, My Brother's Keeper, and the issue with the school-to-prison pipeline highlight the importance of early identification, early interventions, academic readiness for school, and supporting students' academic and behavior success. However, if these criteria are not implemented functionally and applicably by a system that addresses students' strengths and deficits, students' assessment scores, academic achievement and classroom functioning levels will continue to suffer. Without the appropriate academic behavior skills and tools for learning, students may be placed at risk, exposing them to increased behavioral academic escape function and resulting in school suspensions, expulsions, and possible criminal activity (Gonsoulin et al., 2012; My Brother's Keeper Task Force to the President, 2014; Office of Head Start, 2014).

Common core: Future research. The goal of the Common Core is to prepare students for college, career, and life by implementing a set of high-quality academic standards in mathematics and English language arts. The Common Core establishes a set of standards that students at each grade level need to achieve in order to advance to the next grade. Common Core is also in alignment with the social and emotional competencies associated with meeting the standards needed to be successful in school. In order for students to meet the Common Core standards for each given grade level, they must possess a mastery of behavior, self-regulation, peer interaction, and overall social and emotional learning skills.

> School-based social and emotional learning programs improve students' classroom behavior, reduce bullying and other conduct problems, and deepen connections between

> students and teachers…Schools that incorporated a social and emotional learning also showed gains in student academic achievement, gained 11% points. (Adams, 2013, p. 1)

Recommendations

The CBCS (Crump, 2011) was developed for the purpose of facilitating the FBA process, specifically during the indirect, data gathering phase of the FBA process. The researcher used the tool as a guide to establish protocols while collecting information about students. The researcher was also able to use it as a guide to help identify the deficient replacement skills that possibly led to the student engaging in maladaptive behaviors.

Since the tool became such a vital instrument during the indirect phase of the FBA process, the researcher decided that a psychometric and statistical analysis of the tool were needed. With the positive data results of the statistical analysis, the researcher explored in what further ways the tool can be useful.

The implications of the tool's theoretical foundations are now broadened to look at the screening and early intervention models of RtI. The CBCS (Crump, 2011) can be used as a screening tool during the Universal Tier 1/Classroom Management and Tier 2. Using the CBCS as a screening tool can teach students academic behaviors skills before maladaptive behaviors escalate, increase, and are reinforced. The assessment tool may possibly have a bigger impact if used as a screening tool for implementing proactive and teaching strategies as part of a classroom behavior management system. Early identification and intervention can prevent problem behaviors from escalating, thereby reducing the opportunity for intense intervention at Tier 3 of RtI.

For the pre-school level, the CBCS (Crump, 2011) can be implemented as a pre-assessment/screening tool to identify skills for school readiness. The CBCS identifies the academic behaviors/pre-academic skills, problem behavior that hinder success, and replacement

skills that are needed for success. These skills are critical for student successful performance. Hopefully, a national federally funded program, such as Head Start, can further enhance its educational program by using the CBCS and other resources that address the programs educational skill deficits so young students can transition into kindergarten and beyond successfully.

National initiatives such as My Brother's Keeper also consider school readiness at the pre-school and early elementary school level along with reading by the third grade to be essential qualities for later academic success. The academic behaviors and school readiness skills needed to be successful at all three levels of the RtI model are also found in the CBCS. Based on the psychometric measurements of the CBCS (Crump, 2011), it is recommended to be used as a screening tool for early interventions and during the FBA process for a comprehensive evaluation of students' skills and deficits. Results have shown that the survey is valid and reliable, and produces needed results, allowing it to serve as an added behavior tool for the classroom educator and appropriate skill building.

Future Direction

The study presented a statistical analysis of the CBCS (Crump, 2011). The results show that the need for such tool can be beneficial for individual students and for the environmental behavior management of the classroom. The tool was developed for students that display challenging behaviors; however, the tool may be able help educators in the screening process level identify the academic behaviors skills needed to be taught, reducing the opportunities for students to display maladaptive behaviors. The use of such an assessment tool at the pre-school and early academic stages of learning even before students start to display challenging behaviors may help educators teach academic behaviors and school readiness skills in preparation for

academic learning. These skills are vital to students' success and development in the educational setting.

Although the CBCS (Crump, 2011) can assist with the identification of academic behavior strengths and deficits as well as maladaptive behaviors on a continuum scale, what the scale does not provide is a curriculum or set of interventions for the classroom educator. Further research is need for the development and program design of appropriate interventions. The CBCS is a multi-functional screening/assessment tool that can address students' behavior needs and help the classroom educator identify of academic behavioral strengths and deficits for executing lesson plans for differentiated instruction.

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APPENDIX A

Classroom Behavior Continuum Scale

CLASSROOM BEHAVIOR CONTINUUM SCALE

Student: _____ Age/Grade: _____Date:_____
Teacher: _____ Respondent's Name: _____

1. **During Non-preferred activities, the student is:**

OFF-TASK				ON-TASK
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

2. **During social interaction with peers, the student is:**

DESPONDANT				ENGAGED
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

3. **Following class routine, the student is:**

NON-COMPLIANT				COMPLIANT
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

4. **When the teacher gives verbal instructions to the whole class, the student is:**

NON-COMPLIANT				COMPLIANT
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

5. **When the student protests, the student most likely engages in:**

INAPPROPRIATE VERBAL PROTESTS				APPROPRIATE FUNCTIONAL COMMUNICATION
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

6. **The student is:**

NON-VERBAL				VERBAL
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

CLASSROOM BEHAVIOR CONTINUUM SCALE

7. The student is considered:

IMPULSIVE				FOCUSED
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

8. The student transitions from location to location:

ELOPES/NON-COMPLIANT			APPROPRIATE TRANSITIONS	
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

9. The student transitions from activity to another activity:

ELOPES/NON-COMPLIANT			APPROPRIATE TRANSITIONS	
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

10. The student engages in repetitive/stimming behavior

STIMS				NONE OBSERVED
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

11. During Preferred activities, the student is:

OFF-TASK				ON-TASK
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

12. During Non-preferred activities, the student:

DOES NOT COMPLETE TASKS				COMPLETES TASKS INDEPENDENTLY
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

13. During difficult activities, the student:

IS DISRUPTIVE and/or DOES NOT COMPLETE TASKS				ATTEMPTS THE TASK/ FACES THE CHALLENGE
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

CLASSROOM BEHAVIOR CONTINUUM SCALE

14. During class time, the student engages in:

DISRUPTIVE BEHAVIOR				DISPLAYS APPROPRIATE CLASSROOM BEHAVIOR
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

15. During class participation, the student:

DOES NOT ENGAGE IN ACTIVITY				ENGAGES/ PARTICIPATES IN ACTIVITY
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

16. When the student needs help:

DOES NOT ASK FOR ASSISTANCE				APPROPRIATELY ASKS FOR HELP
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

17. Given an non-preferred assignment, the student:

WAITS FOR PROMPTS TO START ACTIVITY OR DOES NOT START ACTIVITY				STARTS TASK WITHIN APPROPRIATE AMOUNT OF TIME
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

18. Given a preferred assignment, the student:

WAITS FOR PROMPTS TO START ACTIVITY OR DOES NOT START ACTIVITY				STARTS TASK WITHIN APPROPRIATE AMOUNT OF TIME
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

CLASSROOM BEHAVIOR CONTINUUM SCALE

19. During social interaction, the student is/will:

WITHDRAWN OR APPEARS TO BE ISOLATED				ENGAGED WITH PEERS
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

20. When student is in close proximity to peers:

INAPPROPRIATELY ENGAGES WITH PEERS				APPROPRIATELY ENGAGES WITH PEERS
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

21. Student exhibits:

IMPULSIVE BEHAVIOR and/or INTOLERANT TO SITUATIONS AND PEOPLE				DISPLAYS IMPULSE CONTROL SELF-CONTROL
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

22. The student engages in:

PERSEVERATIONS or REPETITIVE BEHAVIORS				NO REPETITIVE BEHAVIORS OBSERVED
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

23. The student engages in:

AGGRESSIVE BEHAVIORS				NON-AGGRESSIVE BEHAVIORS
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

24. During classroom instruction/class routine, the student:

DOES NOT PARTICIPATES IN CLASS ROUTINE				PARTICIPATES APPROPRIATELY IN CLASS ROUTINE
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

CLASSROOM BEHAVIOR CONTINUUM SCALE

25. During social interactions, the student:

INAPPROPRIATELY TOUCHES PEERS OR INVADES SOCIAL DISTANCE				APPROPRIATE SOCIAL DISTANCE
0	1	2	3	4
ALWAYS	USUALLY	SOMETIMES	USUALLY	ALWAYS

Please add up the total number: _____

APPENDIX B

IRB Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

September 30, 2014

Sharlyn Crump

Protocol #: E0914D01
Project Title: The Efficacy of Academic Behavior Assessment Tool for the Functional Behavioral Assessment Process

Dear Ms. Crump:

Thank you for submitting your application, *The Efficacy of Academic Behavior Assessment Tool for the Functional Behavioral Assessment Process,* for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Barner, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b) (4) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> **Category (4) of 45 CFR 46.101**, Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact Kevin Collins, Manager of the Institutional Review Board (IRB) at gpsirb@peppderdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

Thema Bryant-Davis, Ph.D.
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Mr. Brett Leach, Compliance Attorney
Dr. Robert Barner, Faculty Advisor

APPENDIX C

Permission to use Figure 1

DATE: May 21, 2015
Sharlyn Crump,
RE: Permission to use information from www.pbis.org for educational citations:
This letter gives permission to use the following images as well as content for the purposes of dissertation, review of literature, professional development, or other related non-profit endeavors:

- PBIS Tools
- PBIS Triangle or Pyramid- Continuum of Services for School-Wide PBS
- PBIS Circles- 4 PBS Elements
- Flow Chart for Leadership Team (State and District)
- Implementation Levels
- School-wide Systems Circles
- General Implementation Process Flow-Chart
- Behavior Support Elements
- Sustainable Implementation & Durable Results Through Continuous Regeneration

Caveats for using the above images are as follows:

- For research, academic, and professional development purposes
- Not to be used for profit, monetary gain, or other activities that might represent conflict of interest

Not to be altered or given authorship to anyone other than indicated original authors. If authorship not stated specifically, credit and source should be cited as the "OSEP Technical Assistance Center for Positive Behavioral Interventions and Support."
For clarifications, questions, or additional information, please contact Project Directors
Rob Horner, robh@uoregon.edu; George Sugai, George.sugai@uconn.edu).

Sincerely,
Dr. Rob Horner and Dr. George Sugai
Technical Assistance Center on Positive Behavioral Interventions and Supports
1235 University of Oregon
Eugene, Oregon 97403-1235
www.pbis.org
Co-Directors of the Technical Assistance Center for Positive Behavioral Interventions and Supports