

EVALUATING THE EFFECT OF SECONDARY SCHOOL SEATING  
ARRANGEMENTS ON ON-TASK BEHAVIORS: AN ANALYSIS OF STUDENT  
BEHAVIOR AND TEACHER MOVEMENT

By

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Abstract: A small-n, reversal design study was conducted to assess student behavior and teacher movement through classroom management practices targeting seating arrangements. Three middle school classrooms were identified in this study to assess student on-task behavior and teacher movement when students are seating in groups when compared to traditional row seating. Classrooms participating in this study were selected from schools implementing Positive Behavior Interventions and Supports (PBIS) to further illustrate the usage of PBIS practices in the classroom as it relates to classroom management practices. Results from the current study depict higher levels of on-task behavior when students are seated in row seating arrangements when compared to groups seating arrangements. Teacher movement showed an increase across all three classrooms when students were seated in a group arrangement. Findings from the current study illustrate seating arrangements alone cannot predict student behavior.

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Table 1

*Interobserver Agreement*

<b>Subject</b>	<b>Teacher Movement Range</b>	<b>Teacher Movement Average</b>	<b>Student On-task Behavior Range</b>	<b>Student On-task Behavior Average</b>
Classroom 1	82-100%	90%	83%-98%	92%
Classroom 2	80-100%	92%	83%-100%	94%
Classroom 3	81-100%	95%	95%-100%	98%

Table 2

*On-task Behavior Results*

<b>Subject</b>	<b>Condition A Range</b>	<b>Condition A Average</b>	<b>Condition B Range</b>	<b>Condition B Average</b>
Classroom 1	10-82%	52%	18-76%	48%
Classroom 2	91-100%	94%	69-93%	74%
Classroom 3	88-100%	96%	66-96%	85%

Table 3

*Teacher Movement Classroom Percentage Results*

<b>Subject</b>	<b>Condition A Range</b>	<b>Condition A Average</b>	<b>Condition B Range</b>	<b>Condition B Average</b>
Classroom 1	50-100%	89%	50-100%	92%
Classroom 2	100%	100%	100%	100%
Classroom 3	0-100%	50%	0-100%	59%

Table 4

*Teacher Movement Frequency Count Results*

<b>Subject</b>	<b>Condition A Range</b>	<b>Condition A Average</b>	<b>Condition B Range</b>	<b>Condition B Average</b>
Classroom 1	4-24	13.333	3-37	18.846
Classroom 2	16-60	31.222	21-64	32.823
Classroom 3	0-34	6.786	0-24	10.500

Table 5

*Social Validity Results*

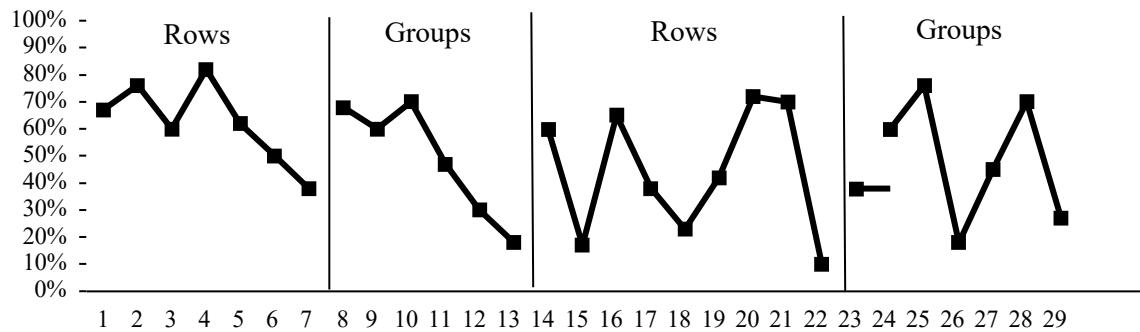
<b>Item</b>	<b>Question</b>	<b>Row Seating <i>M</i> (n=3)</b>	<b>Group Seating <i>M</i> (n=3)</b>
1	How acceptable do you find the intervention to be regarding your concerns about this classroom?	2.67	2
2	How willing are you to carry out this intervention?	2.67	2
3	Given this classroom's behavioral concern, how reasonable do you find the intervention to be?	2.67	2
4	How costly will it be to carry out this intervention?	1.33	1
5	To what extent do you think there might be disadvantages in following this intervention?	1.33	2.67
6	How likely is this intervention to make permanent improvements in this classroom's behavior?	2.67	1.33
7	How much time was needed each day for you to carry out this intervention?	1	1.67
8	How confident are you that this intervention was effective?	2.67	1.33
9	How disruptive will it be to carry out this intervention?	1	2.33
10	How effective is this intervention likely to be for this classroom?	2.67	1.33
11	How affordable is this intervention?	3	3
12	How much do you like the procedures used in the proposed intervention?	2.67	1.67
13	How willing will other staff members be to help carry out this intervention?	2.67	2
14	To what extent are undesirable side effects likely to result from this intervention?	1.33	2.67
15	How much discomfort is this classroom likely to experience during the course of this intervention?	1	2
16	How willing would you be to change your routines to carry out this intervention?	2.67	2
17	How well will carrying out this intervention fit into the existing routine?	2.67	1.67

*Note: Teachers rated all items on a 3-point Likert-type scale (from 1 = 3) with 1 indicating not at all likely and 3 indicating very likely. In all teacher forms, the words "intervention" were replaced with "seating arrangement."*

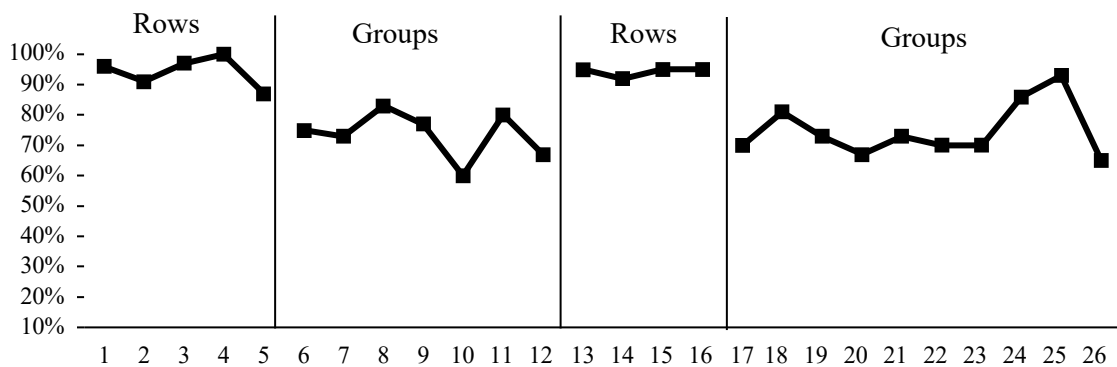


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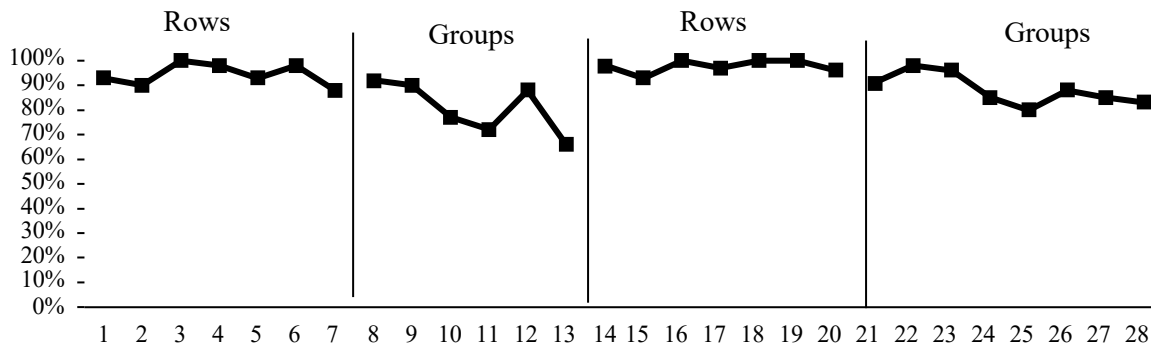
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**Classroom 1**



**Classroom 2**



**Classroom 3**

*Figure 1 Percentage of Student On-Task Behavior*

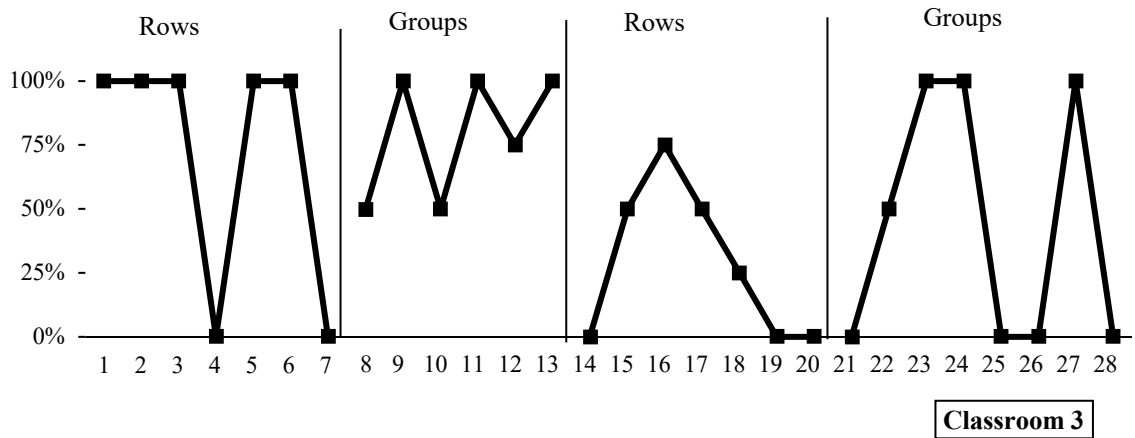
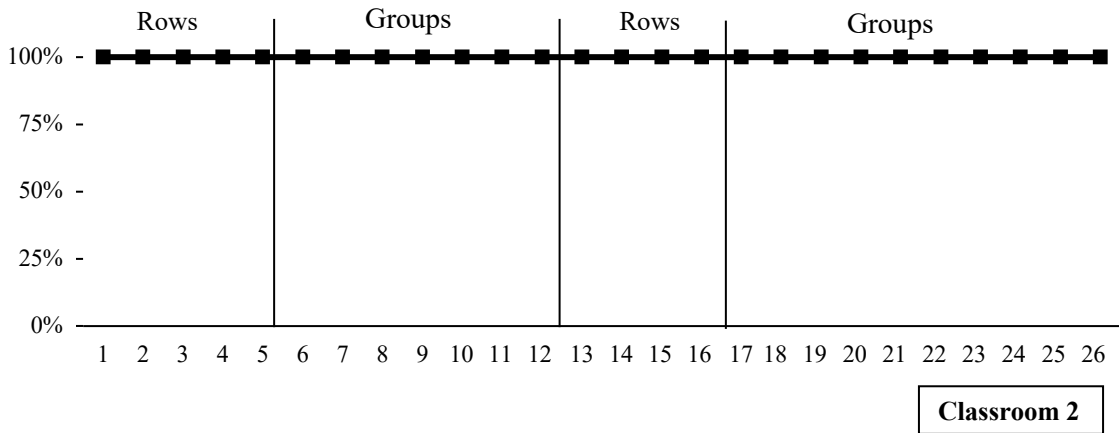
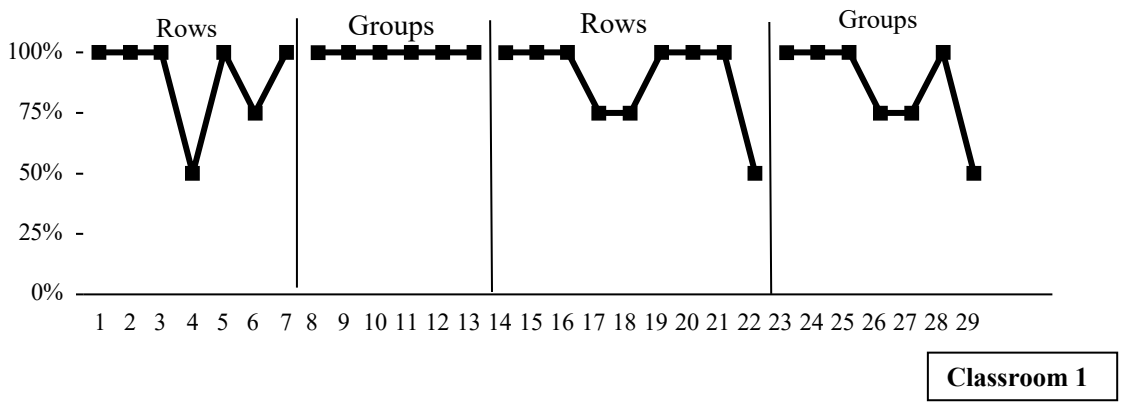


Figure 2 Percentage of Teacher Movement

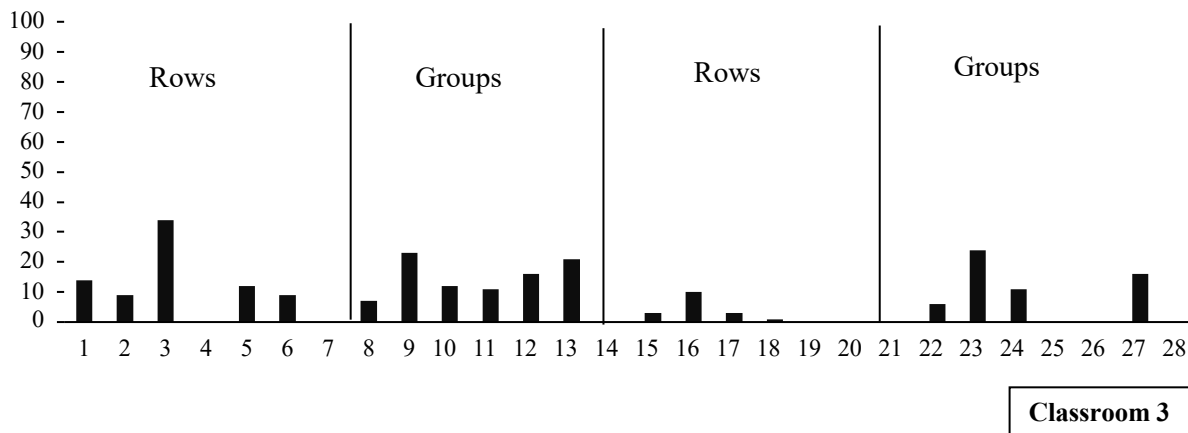
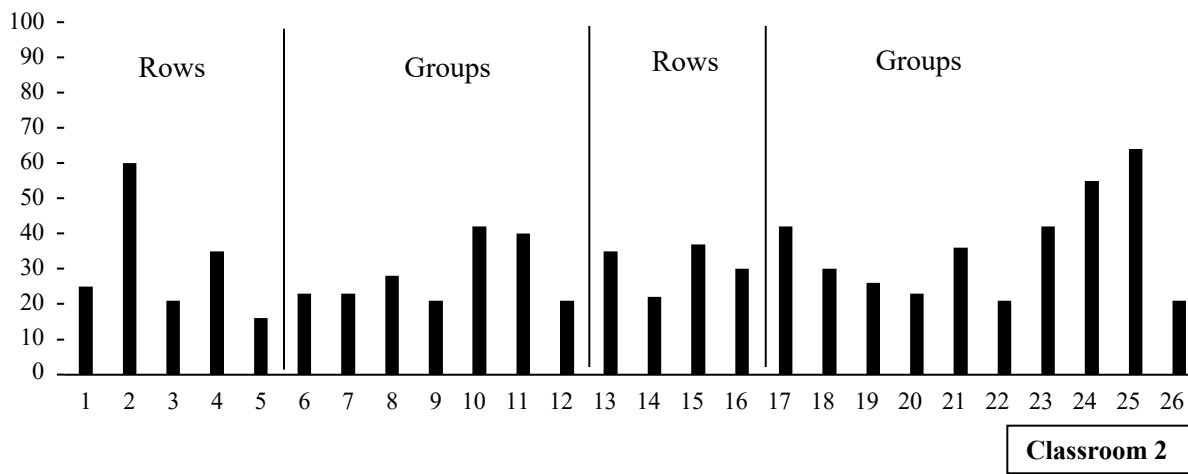
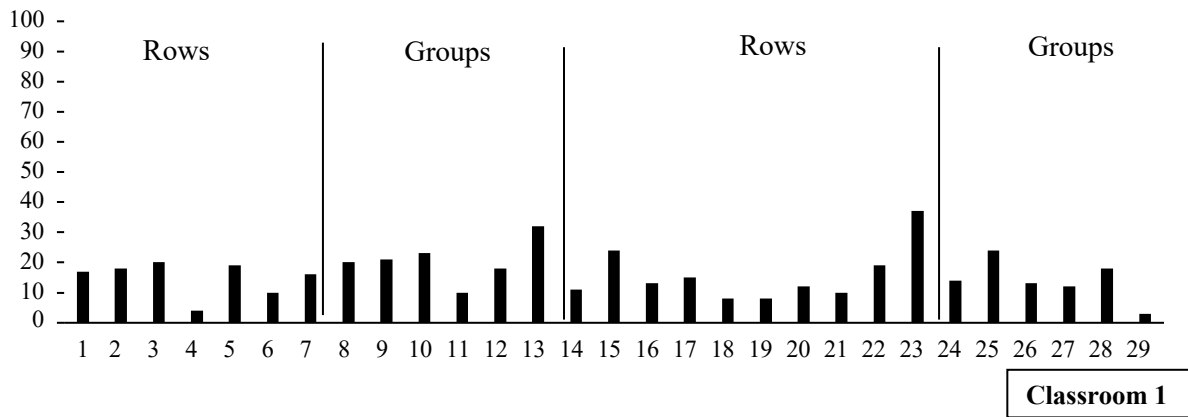


Figure 3 Frequency Count of Teacher Movement

## CHAPTER I

### INTRODUCTION

#### **Applied Behavioral Analysis**

Applied Behavioral Analysis (ABA) is a theoretical framework that focuses on empirical approaches and techniques aligned with the principles of learning to shape and modify behavior to elicit desired outcomes (Baer, Wolf, and Risley 1968). ABA is a scientific approach rooted in the utilization of data to determine the effectiveness of principles and measures applied to prevent, intervene, and reinforce the desired behavioral responses (Cooper, Heron, and Heward 2007). ABA practices are utilized across various settings in conjunction with other practices to predict behavior in order to elicit desired behaviors and provide long term effective practices to shape and modify current behaviors.

Implementation of ABA in schools is often demonstrated to address severe behaviors and disruptive behaviors affiliated to psychopathology such as autism or attention-deficit/hyperactivity disorder as a means for effective intervention practices (DuPaul, Wyandt, and Janusis, 2011). Further, schools implementing school wide behavioral frameworks, often adapt methodology and practices rooted in the principles of

ABA (Reinke, Herman, and Stormont, 2013). While individuals may implement practices of ABA unknowingly, ABA is not commonly taught in teacher training programs or most educational training programs. The principles of ABA are rooted in conditioning responses based upon access to reinforcement for the desired behaviors (Cooper, et al., 2007). These practices can be feasibly implemented in the general classroom setting to decrease off-task behavior and increase the likelihood of desired behaviors to occur through reinforcement.

### **Classroom Management**

Across the nation, a leading deficit in teacher readiness when transitioning from student teaching to becoming a certified teacher is classroom management, specifically addressing problematic behaviors (Guiardino and Fullerton, 2010). Classroom management incorporates a range of skills to shape the classroom environment including, but not limited to room arrangement, corrective consequences, behavior specific praise, and active supervision (Ennis, Rowyer, Lane, Menzies, Oakes, and Schellman, 2018; Gage, Haydon, MacSuga-Gage, Flower and Erdy, 2020). To increase on-task behaviors during instructional periods and independent seatwork, current research asserts teachers must be prepared to address problematic behaviors through preventative and intervention methods (Dicke, Elling, Schmeck and Leutner, 2015). Current literature suggests the most feasible, low-cost way to address classroom management is through seating arrangements (Bicard D., Ervin, Bicard S., and Baylot-Casey, 2012). Seating arrangements provide a feasible preventive strategy towards decreasing the likelihood of problematic behaviors occurring in the classroom. In conjunction with a school wide framework designed to implement effective preventative practices to decrease off-task

behaviors, seating arrangements can further prevent problem behaviors from occurring in the classroom.

### **School Wide Frameworks**

School wide frameworks can take on many forms targeting academic, behavior, or social emotional well-being. The primary focus of school wide frameworks is to bring about system level support for all students and staff to create a positive school climate (Oberle, Doitrovich, Meyers, and Weissberg, 2016). School wide frameworks utilize a proactive approach towards addressing and preventing problematic behaviors and skill deficits amongst students (McIntosh and Goodman 2016). Specifically, school wide frameworks seek to match needs of students and staff in the school to available resources within the school. Upon implementation of a school wide framework, the following measures must be implemented to ensure sustainability: administrator presence, stated policies, practices implemented with fidelity, professional development, and continual evaluation of performance (Mellard, Frey, and Woods, 2012). For purposes of the current study, the primary focus will relate to school wide behavioral frameworks, specifically Positive Behavioral Interventions and Supports (PBIS). PBIS is a tiered approach that focuses on positive reinforcing practice to prevent problem behaviors from occurring in the classroom and support students who need intensified support and interventions. School wide frameworks allow for schools to maximize current resources to promote a positive school climate at the school-wide level. This not only aids in better service delivery, but also resource allocation.

## **Problem Solving Model**

The problem-solving model is a four-step process towards identifying and addressing problems within the classroom (Bergan, 1995). The problem-solving model can be utilized to address academic, behavioral, and social emotional concerns within the classroom. The four steps include: problem identification, problem analysis, intervention implementation, and evaluation of intervention effectiveness (Bergan, 1995). The problem-solving model is often referenced as an approach to address intervention needs; however, at the class wide level the problem-solving model can be utilized to initiate preventive, proactive support before problematic behaviors occur (Ervin, Rowyer, Lane, Menzies, Oakes, and Schelmmann, 2007).

## **Current Study**

There is a growing body of literature supporting the usage of seating arrangements to decrease off-task behavior in the classroom (Bonus and Riordan, 1998). Many studies have assessed the usage of rows, clusters, and U-shaped classrooms to measure effectiveness of student learning under each condition (Gremmen, Van den Berg, Segers, and Cillessen, 2016). However, there is limited research assessing the effectiveness of seating arrangements amongst middle school and high school students. In many secondary public schools, students transition between classes making it challenging for teachers to depict the best seating arrangement for all students in all classes. Therefore, many teachers arrange the classroom in the best way to ensure the variation in the number of students attending class can be seated within the classroom (Wheldall and Bradd, 2013).



The current study seeks to explore the effects of seating arrangement amongst secondary school students. Specifically, this study explored the differential effects of student seating selection to teacher seating selection; levels of on-task behavior when students are seated in rows versus groups; and levels of teacher movement when students are seated in rows versus groups. For purposes of this study, secondary students were defined as students in either middle school or high school grades with participants in grades six to grades twelve. This study not only adds to current literature related to seating arrangements amongst secondary school students, but also informs best practices in usage of seating arrangements in schools implementing PBIS.

### **Research Questions**

1. To what degree is student on-task behavior affected when seated in rows versus group clusters amongst secondary students?
2. What effect does group seating versus row seating have on teacher movement in the classroom?

### **Hypothesis**

**Research Question #1.** It is hypothesized on-task behavior will be significantly higher when students are seated in rows.

**Research Question #2.** It is hypothesized teacher frequency of movement will increase when students are seated in groups versus when seated in rows.

## CHAPTER II

### LITERATURE REVIEW

#### **Classroom Management**

Classroom management is one of the leading predictors associated with teacher turnover, student academic achievement, and managing problem behaviors in the classroom (Hammonds, 2017; Evertson and Weinstein, 2006; Ingersoll and Smith, 2003). Classroom management is defined in the literature as preventative practices and actions of a teacher to create a classroom environment conducive to support student academic and social emotional needs while eliciting desired behaviors (Evertson and Weinstein, 2006; Evertson, Emmer, Sanford, and Clements 1983; Lewis and Sugai, 2000). Current literature demonstrates classroom management to incorporate a range of strategies including active supervision, behavior management, praise statements, and room environment (Simonsen, Fairbanks, Briesch, Myers, and Sugai, 2008). While classroom management is not heavily trained upon during one's coursework in higher education, it is a necessary skill teacher must acquire to promote a positive school climate (Hammonds, 2017; Emmer and Stough, 2001). A positive school climate is correlated

with better outcomes for students academically, behaviorally, and socially (Wang and Degol, 2016).

Collier-Meek, Johnson, Sanetti, and Minami (2019) conducted a study to identify leading components for classroom management. In their study, they identified three categories for practices in classroom management which include foundation, prevention, and responsive classroom management components (Collier-Meek, et al., 2019).

Foundational components include room arrangement, routines, and expectations. The room arrangement illustrates the specific physical arrangement of the classroom conducive for feasible transition and promotes positive student interaction with activities (Simonsen, Freeman, Goodman, Mitchell, Swain-Bradway, Flannery, and Putnam 2015).

Routines highlight the regularly occurring activities that are prepared in advance and stated to students to promote student engagement with tasks (Curby, Rimm-Kaugman and Abry, 2013). Expectations are clearly stated rule sand practices that are posted throughout the classroom as a reminder for desired behaviors (Algozzine, Barrett, Eber, George, Horner, Lewis, Putnam, Swain-Bradway, McIntosh, and Sugai, 2014).

Prevention components include active supervision, opportunities to respond, and precorrection strategies to decrease off-task behaviors. Active supervision is the process of teachers actively attending and engaging with students in the classroom (Gage, et al., 2020). Opportunities to respond are student responses to increase academic engagement and decrease problem behaviors (Sutherland, et al., 2003; MacSuga-Gage & Simonsen, 2015; Sutherland & Wehby, 2001). Precorrection is a preventative practice that utilize verbal prompts as a reminder of the expectations before problem behaviors arise (Simonse, Myers and De Luca, 2010). Responsive components are linked to how the

teacher responds based on behaviors demonstrated. Responsive components can reinforce desired behaviors or corrected inappropriate behaviors. Each of these components plays a significant role in classroom management. The current study highlights the preventative practices commonly addressed in PBIS frameworks, and the best practices for foundational methods tied to room arrangement.

### ***Active Supervision***

Active supervision is a preventative strategy to increase positive, desired behaviors amongst students in the classroom (Gage, et al., 2020; Haydon and Kroeger, 2016). Active supervision focuses on teacher behaviors through techniques and strategies to increase the teacher's awareness of all behaviors occurring in the classroom (Allen, Common, Gerner, Lane, Cuckman, Oaks, and Menzie, 2020). Specifically, active supervision focuses on teacher movement, proximity to students, and scanning the classroom (De Pry and Sugai, 2002). Each of these techniques when embedded efficiently into one's daily routines in the classroom can decrease disruptive, off-task behaviors amongst students of all grade levels in the classroom (Gage, et al., 2020; Colvin, Sugai, Good, and Lee, 1997).

**Teacher Movement.** Teacher movement identifies the frequency to which the teacher moves throughout the classroom, while teaching or allowing time for independent seat work. Teacher movement increases student awareness of the teacher's presence in the classroom and decreases off-task behavior (Haydon and Scott, 2008). Current literature asserts teacher movement to be an efficient preventative strategy to decrease student off-task behavior and increase student engagement in the classroom. However, current literature cautions against teacher movement following a repetitive pattern for

which students are able to differentiate when the teacher will move about the classroom. Teacher movement should not only occur when the teacher is facilitating classroom discussion or lecturing, but also when students are testing or working independently in class (Gunter, Shores, Jack, Rasmussen, and Flowers, 1995).

**Proximity.** Proximity refers to how close the teacher is to students in the classroom (Gunter, et al., 1995). Conroy, Asmus, Ladwid, Sellers, and Valcante (2004) conducted a study amongst children with autism to determine the effects of adult proximity to students with autism during seat work. Findings of the study assert adult proximity to the students increased student engagement with academic content in the classroom. Implications of this study indicate proximity to students is likely to decrease the frequency of off-task behaviors in the classroom. In the classroom, proximity to students should not only equate to room arrangement, but also how teachers interact and move throughout the classroom.

**Scanning.** Scanning primarily addresses teacher eye and head movement while teaching and moving throughout the classroom. Scanning has not been frequently assessed in current literature, as it is hard to concretely, determine frequency of teacher scanning. However current literature does assert teacher scanning while moving throughout the classroom and seated at the desk does correlate with student engagement in the classroom (Gage, et al., 2020).

### ***Behavior Specific Praise***

Behavior specific praise is a preventative strategy to increase student engagement and on-task behaviors in the classroom (Markelz and Taylor, 2016). Behavior specific praise includes three core features: identifying who is being praised, providing an

observable behavior to praise, delivering the praise statement (Hayon and Myusti-Rao, 2011). In the classroom, teachers often make general praise statements that do not directly address what is being praised. However, through behavior specific praise students are able to identify what behaviors they are being praised for which increases the likelihood of students to engage in appropriate behaviors in the future. Current literature recommends a 4:1 ratio of praise statements to corrective statements (Pisacreta, Tincani, Connell, and Axelron, 2011; Rathel, Drasgow, Brown, and Marshall, 2014). This is especially encouraged amongst schools implementing a schoolwide behavior system to build consistency.

### **Positive Behavior Interventions and Support**

Behavior concerns are one of the most commonly reported reasons for teacher turnover and student achievement (Guiardino and Fullerton, 2010). Consequently, many practices for addressing problematic behaviors in the school system utilize punitive practices such as detention, suspension, and expulsion (Boneshefski and Runge, 2014). These practices do not teach appropriate behaviors but focus on punishing the wrong behaviors. This not only causes students to miss instructional time in the classroom, but also normalizes punitive practices which perpetuate into society, leading to the school-to-prison pipeline (Boneshefski and Runge, 2014). For these reasons, it is recommended schools adapt a school-wide behavior system to create consistency across settings and clear expectations for student behavior. School wide behavioral systems decrease the likelihood of problem behaviors from occurring by addressing problem behaviors and acknowledging appropriate behavior amongst students. A common school wide behavior system implemented is Positive Behavior Interventions and Support (PBIS). PBIS is a

framework that adapts current school practices to align with a positive approach to reinforce appropriate behaviors and identify consistent measures to address undesired behaviors. PBIS focuses on preventive measures to decrease the likelihood of problem behaviors from occurring, but also offer intervention practices to utilize when problem behaviors do occur.

### ***Systems***

Systems are key to ensuring effective implementation of the PBIS framework. The systems include administrator presence, building a school-wide behavior team, and running effective meetings to assess the effectiveness of PBIS (Childs, Kincaid, George, and Gage, 2016). Administrators will serve as members to identify how the PBIS framework was implemented in the school at the school-wide, class wide, and individual level. The team will serve as support to the administrator and implement the PBIS practices from day-to-day while providing feedback for what is effective. The meetings are designed to provide the team and administrators with the opportunity to evaluate the fidelity and effectiveness of PBIS within the school.

### ***Practices***

Practices include the daily interactions and implementation of PBIS. PBIS is a framework that utilizes a tiered model to match student and teacher needs to available resources. Tier 1 includes 85% to 90% of the student population, Tier 2 includes 10% to 15% of students not responding to Tier 1 supports that are remedied through small groups, and Tier 3 includes 2% to 5% of students who require more individualized one on one supports (McIntosh and Goodman, 2016). When a Tier 1 problem is referenced, it is indicative that supports for the majority of students are ineffective. Therefore, typical

consultative services for Tier 2 and Tier 3 students cannot be efficiently applied without a strong Tier 1 system in place.

PBIS practices focus on teaching appropriate behaviors, reinforcing desired behaviors, and collecting data to monitor student, class, and school wide progress (Farkas, Simonsen, Migdole, Donovan, Clemens, and Cicchese, 2012). Teaching appropriate behaviors includes but is not limited to modeling desired behaviors, practicing these behaviors in the natural setting for which they would occur, and providing feedback when the desired behaviors are not implemented correctly. Reinforcing desired behaviors is a key component of the PBIS framework which includes creating a consistent, school-wide system to reward students for demonstrating desired behaviors across all settings (Nelson, Caldarella, Hansen, Graham, Williams, and Wills, 2018). Lastly, PBIS places strong emphasis on collecting data across all settings to determine the effectiveness of Tier 1 PBIS practices to ensure students' needs are being met (Childs, et al., 2016).

### ***Data***

Data collection is key to the implementation of PBIS. Forms of data collection include office discipline referrals (ODRs), student academic achievement, and frequency of tangible rewards given. A common data collection practice in PBIS is review of ODRs. ODRs allow teachers and administrators to review the frequency of disciplinary practices students have received in a given time period. For this reason, it is imperative for teams to meet consistently and frequently to review current data to inform future practices. Since PBIS utilizes a tiered system, review of data helps schools determine how students segue through the various tiers based on student need and available



resources (Childs, et al., 2016). In order to determine the effectiveness of practices, data must be collected and assessed.

### **Seating Arrangements**

Current literature on classroom management depicts seating arrangements to be one of the leading low-cost methods to prevent problematic behaviors from occurring (Wannarka and Ruhl, 2008; Haghghi and Jusan, 2012). Current literature has specifically explored the benefits of specific seating arrangements amongst students in elementary classrooms. Grubaugh and Houston (1990) assessed current literature to provide practitioners and teachers with evidence-based practices related to classroom environments. A key preventative method proposed is the usage of seating arrangements. Teachers are able to utilize seating arrangements to diminish off-task behavior and provide a feasible way to learn students' names (Grubaugh and Houston, 1990).

### ***Student Selection***

Student selection of seating arrangements ties directly to ABA principles of choice and reinforcement. Operant conditioning illustrates levels of reinforcement obtained from demonstration of specific behaviors. In the realm of classroom management and seating arrangements, student selection of seating arrangements most closely aligns with operant conditioning for positive reinforcement and negative reinforcement.

Positive reinforcement is the application of a desired stimulus when a desired behavioral response is emitted (Cooper, et al., 2007). Students' choice to select a preferred seat results in the application of a desired interaction whether it be seating close to a friend or sitting in a desired region of the classroom. Negative reinforcement is the

removal of an underlying stimulus when a desired response is emitted (Cooper, et al., 2007). Students' choice to select a preferred seat may also result in the removal of an undesirable stimulus whether it be a specific student or undesired location in the classroom.

In addition to levels of operant conditioning, student seating selection most closely relates to choice and decision making. Current research has attested the most cost-effective way to address classroom management is through seating arrangements. However, there has been limited research exploring the effects of student choice on seating arrangements to decrease disruptive behavior in the classroom. Bicard and authors (2012) conducted a study to evaluate the effects of student choice in seating arrangements on disruptive behavior amongst fifth grade students. Results of this study attribute to matching law and reinforcement. In that, disruptive behavior increased when students selected their seat due to the nature that students are likely to choose their seat based on individuals they interact with socially (Bicard, et al., 2012). Further, this is a dense schedule of reinforcement. From an ABA perspective, choice is an essential component in delivery of behavioral services (Cooper, et al., 2007). The implications of these principles suggest choice making in relation to seating arrangement amongst students can have a positive effect to decrease off-task behavior when the classroom environment is conducive.

### ***Teacher Selection***

Teacher selection of seating arrangement is often associated with preventative measures to decrease behaviors a teacher may expect amongst students in specific settings. The current literature supporting teacher selection of seating arrangements

specifically addresses the purpose for which the seating arrangement was designed (Grubaugh and Houston, 1990). Classroom seating arrangements serve different purposes to eliminate off-task behavior in the classroom. Current literature demonstrates arrangements such as row are great for independent work, but clusters elicit more on-task behavior when students are discussing or working together in the classroom (Gremmen, et al., 2016). The most commonly assessed types of seating arrangements include traditional rows, small groups/clusters, and U-shaped seating.

A study conducted in 2016, by Gremmen and additional authors found that teacher selection of seating arrangements most closely correlated to activities to be conducted in the classroom. As a preventative measure, teachers are able to use seating arrangements to decrease off-task behaviors and increase student engagement, primarily focusing on alphabetic order, gender, and student academic and behavioral performance (Gremmen, et al., 2016).

### ***Room Arrangement***

Classroom management extends beyond implementation of prosocial behaviors to increase student engagement and decrease off-task behavior (Barth, Dunlap, Dane, Lochman, and Wells, 2004). Classroom management also ties directly into how the room is arranged and the purpose of the room arrangement. Grubaugh and Houston (1990) assessed elements of classroom management that are most practical towards preventing disruptive behaviors. A key component of the classroom environment that attributes to learning is room arrangement, as a positive room arrangement contributes to student-teacher communication and increases student engagement (Grubaugh and Houston, 1990; Downer, Rimm-Kaufman and Pianta, 2007). Many studies have sought to demonstrate

the most effective room arrangements conducive for learning. Specifically, three room arrangements are commonly addressed in the literature which include: U-shape seating arrangements, traditional rows, and group/cluster seating arrangements.

### ***Traditional Rows.***

Traditional row seating arrangements are historically the most common seating arrangement seen in elementary, secondary, and higher education schools. This form of seating arrangement maximizes the amount of seating available in the classroom, but potentially limits teacher movement throughout the classroom (Wheldall, and Lam, 1987). Wannarka and Ruhl (2008) conducted a study to assess current literature and implications for seating arrangements. This particular study found across all studies assessed that seating arrangements utilizing rows were the best predictors of diminishing off-task behaviors (Wannarka and Ruhl, 2008). A current study conducted by Simmons, Carpenter, Crenshaw, and Hinton (2015) explored the usage of various seating arrangements towards student behavior amongst second grade students. Observations during the data collection process specifically focused on student off-task behavior and notated the frequency of off-task behaviors across all seating arrangements. Findings of the study concluded rows were the best seating arrangement to diminish off-task behavior amongst the second-grade students (Simmons, et al., 2015).

### ***U-shape.***

The U-shape classroom seating arrangement places students' seats in an arc shape for which students are able to see one another and the teacher is able to move freely throughout the classroom. U-shape seating arrangements are most conducive for classrooms when frequent discussion occurs between students and the teacher. U-shape

classroom arrangements are not commonly explored in current literature. A study conducted by Ramli, Ahmand, and Masri (2013) assessed teacher perceptions of room arrangements and found U-shape classroom arrangements to be the most ineffective room arrangement according to teachers due to peer distraction.

### ***Groups/Clusters.***

A common, modern day seating arrangement demonstrated in many classrooms is group/cluster seating arrangement. In group/cluster seating arrangements, students are seated amongst themselves in groups of three or four to work collaboratively on assignments. Due to the nature of this seating arrangement, current literature depicts group/cluster seating arrangements to be great for collaborative work but may serve as a distraction during independent seatwork and direct instruction. Rosenfield and Black (1985) conducted a study amongst 5th grade and 6th grade students to determine the best seating arrangement to promote student engagement in group settings. Findings of the study demonstrated students engaged more in circle seating arrangements when compared to rows and were most engaged in cluster seating arrangements when compared to circles (Rosenfield and Black, 1985). Implications of this study illustrate group/cluster settings may be conducive to student engagement.

### **Functional Behavioral Assessment**

A Functional Behavioral Assessment (FBA) is an assessment rooted in the principles of ABA to identify and predict the function of problem behaviors in efforts to manipulate the environment to shape responses to elicit desired behaviors (Sugai, Lewis-Palmer, & Hagan-Burke, 2000). The FBA process includes both descriptive analysis and functional analysis. The descriptive analysis process incorporates assessment methods to

identify and predict the function of the behavior. The functional analysis process is testing of the hypothesis obtained from the descriptive analysis (Wood, Kisinger, Brosh, Fisher, and Muharib, 2018).

### ***Descriptive Analysis***

The descriptive analysis portion of an FBA is the process through which data is collected to hypothesize the function of behavior. Three common assessment methods of the descriptive analysis include the record review, interviews and observations. For the purpose of the current study, descriptive analysis was addressed through measures conducted within a school system.

#### ***Record Review.***

The record review is the portion of the analysis seeking to identify patterns of problem behaviors recorded across time and settings (Barnhill, 2005). In the school system, the record review assesses student and class wide data to determine the presence and prevalence of a problem across multiple classroom settings. Specific records evaluated would include but not be limited to reviewing attendance records, office discipline referrals (ODRs), and academic records.

#### ***Interviews.***

Interviews are the portion of the assessment process which seek to determine what individuals who have daily interactions with students perceive the problem behaviors to be (McIntosh, Borgmeir, Anderson, Horner, Rodriguez, and Tobin, 2008). The interviews allow the examiner the opportunity to notate patterns of behaviors depicted by teachers and school administrators. Interviews will provide the examiner a perspective of things to consider when completing the observation portion of the assessment. Interviews are an

indirect method of data collection to not only gain information related to what the problem is perceived to be, but also increase social validity of proposed intervention plans (McIntosh et al., 2008).

***Observations.***

Observations are a direct method of data collection during the assessment for the examiner to concretely and definitively observe behaviors elicited in the natural environment (Nock & Kurtz, 2005). Through data collected from the record review and interview, the observer now has a knowledge base of expected behaviors to occur, while gaining new insights on all behaviors elicited in the environment during the observation period. Observations play an important role in the descriptive analysis portion of an FBA, as the observations provide substantial evidence to support the hypothesis of the perceived function of the behavior (Lewis, Scott, Wheby, & Wills, 2014).

There are various forms of observational methods one can use during the observation. Common observation methods utilized in class wide observations include antecedent, behavior, consequence (A-B-C) logs; whole interval recording; partial interval recording; and momentary time sampling. Each of these observation methods serve different purposes related to the frequency, latency, and duration of the problem behavior.

A-B-C logs are a narrative observation method that identifies antecedent behaviors occurring in the environment to elicit the behavior and the consequence delivered once the behavior was emitted. Whole interval recording is an observation method that focuses on the presence of a behavior emitted throughout the entire interval for which the observer is recording (Alberto & Troutman, 2012). Whole interval

recordings tend to underestimate the presence of problem behaviors, as the behavior must be elicited for the duration of the entire interval. Therefore, whole interval recording is beneficial for identifying the duration of behaviors. Partial interval recording is an observation method in which behaviors are recorded if they occur at any time throughout the interval (Alberto & Troutman, 2012). Partial interval recording tends to overestimate the occurrence of the behavior. Therefore, partial interval recording is beneficial when determining the frequency of elicited behaviors. Momentary time sampling is an observation method which has the observer only record behaviors observed at a specific time during the interval. Typically, the observer was looking down or elsewhere and once a timer goes off the observer will record on-task or off-task behavior.

### ***Functional Analysis***

The functional analysis is the portion of the FBA in which the hypothesis is tested under necessary conditions. In a general education classroom setting, the functional analysis could also serve as the direct intervention provided. Based on the results of the effectiveness of the intervention, the examiner is able to determine if the hypothesized function holds true under conditions in which the environment is manipulated to elicit a response.

### **Class wide Interventions**

In school-wide behavior frameworks similar to PBIS, class wide interventions are often utilized to prevent and intervene on existing problematic behaviors occurring in the classroom amongst multiple students. This allows teachers the opportunity to support multiple students without expending multiple resources. Class wide interventions



typically utilizes some form of a group contingency in order to elicit desired responses amongst students.

### ***Contingencies***

Contingencies serve a role in classroom management and prevention and intervention techniques. As defined in current literature, a contingency is dependent and/or temporal relations between operant behavior and its controlling variables and reinforcement that is delivered only after the target behavior has occurred (Cooper, et al., 2007). In the PBIS framework, contingencies are heavily utilized as a means to receive a reward. In order for contingencies to be effective there must be clear expectations of what the desired behavior looks like and what is needed in order to obtain a reward.

### ***Group Contingencies***

Group contingencies are embedded in class wide interventions as a means to elicit desired behaviors amongst all students (Willis, Iwaszuk, Kamps, and Shumate, 2014). Group contingencies can be independent, dependent, or interdependent (Cooper, et al., 2007). Independent group contingencies mean each individual student is responsible for their own behavior and is rewarded accordingly. All students in an independent group contingency will have the same expectations and goals towards obtaining a reward. In a dependent group contingency, the reward for all students is contingent upon one student or a group of students. In an interdependent group contingency, the reward for all students is contingent upon all students performing. Meaning all students must meet the set criteria in order for all students to obtain a reward.

### ***Intervention Practices***

Common class-wide interventions demonstrated in current literature include: The Good Behavior Game, Class-wide Function Based Teams Intervention (CW-FIT), and the Color Wheel. Class-wide interventions often stem from group contingencies, meaning consequences for all members within a group are dependent upon the behavior(s) of one individual, a group of individuals or the entire group (Cooper, et al., 2007). A key component embedded within all of these interventions is not only attributed to group contingencies to shape and change student behavior, but also direct consultation to change teacher behavior (Farmer, chen, Hamm, Moates, Mehtaji, Lee, and Huneke, 2016). Changing teacher behavior is a unique consultative skill due to the nature of one's expertise and respecting teachers' pedagogical skills. However, class-wide interventions require positive teacher to student interactions; therefore, shaping teacher behaviors over time.

### **Social Validity**

Social validity refers to the extent in which individuals participating in a preventative or intervention method associate the cost to implement procedures with the benefits and detriments to continue utilizing the methods. Current literature defines social validity as the extent to which a social program is implemented and embraced by the community (Marchant, Heath, and Miramontes, 2013). There are three core features current literature demonstrates as essential components for social validity: "the social significance of identified treatment goals, the social appropriateness of procedures utilized in achieving treatment goals, and the social importance of research effects and outcomes" (Marchant, et al., 2013, p. 223). In the realm of classroom management, social

validity plays an important role in the fidelity of implementation. Social validity also relates to how societal norms and standards identify the severity and importance of presenting problems. As social validity increases, implementation of recommendations increases (Marchant, et al., 2013). Without some levels of social validity, the implementation of desired techniques and strategies is likely to not occur (Marchant, et al., 2013).

During intervention periods many consultants have experienced immediate change and positive growth in the desired direction followed by what appears to be ineffectiveness of the intervention attributed to lack of fidelity of implementation. Many teachers and practitioners desire quick fixes that only address the immediate concern. However, short term solutions cause long term detrimental effects. Therefore, taking measures to increase teacher buy-in from the start of the intervention increases the likelihood of sustainability in the future.

Effective classroom management practices do not rely solely on the relationship teachers have with their students, but also teacher understanding of how behavior works in the classroom (Reupert and Woodcock, 2010). For consultants it is imperative to understand why group contingencies and class-wide interventions are effective from a behavioral perspective in order to guide teachers towards understanding corrective consequences and utilization of positive behavior practice to increase student on-task behavior and decrease disruptive student behavior.

## CHAPTER III

### METHODOLOGY

#### **Participants and Settings**

Three middle school classrooms were selected from schools in a rural district in Oklahoma. Class size varied across each classroom ranging from a minimum of 10 students to a maximum of 27 students. Observation sessions lasted fifteen minutes during designated periods. Baseline and treatment conditions were conducted independent from each other.

#### **Materials**

Materials utilized in this study included a timer, cellular application, excel spreadsheet, an iPad, and a laptop. The timer was used for each time observations are collected to measure student off-task behavior and teacher movement. A cellular application was utilized to calculate interobserver agreement amongst secondary investigators. The excel spreadsheet was utilized to record observation data across each classroom. The iPad was used to video record observations occurring during the designated observation periods. A password protected laptop was used to store and analyze all observations.

### **Independent Variable**

The independent variables included the classroom room arrangement (2 levels). Classroom room arrangement was defined as group/cluster seating versus traditional row arrangement. Group cluster seating was defined as 2 to 4 students seated facing one another around a table or desks clusters. Traditional row seating was defined as all students facing the same direction seated in rows vertically.

### **Dependent Variable**

The dependent variables were on-task behaviors exhibited by students in each classroom and teacher movement. Teacher movement was assessed by a frequency count of teachers moving throughout the classroom into four quadrants students are actively seated in, and a percentage of overall quadrants moved into during the observation session. Student behaviors were defined in congruence with the school's school wide PBIS system already in place. On-task behavior was defined as "actively participating in the designated activity by (a) being oriented toward the teacher or task, (b) having necessary materials, (c) following teacher directions, and (d) listening through verbal (e.g., asking questions) and nonverbal (e.g., nodding head or eye contact) means" (Allday, Bush, Ticknor, and Walker, 2011, p. 394). To collect and analyze the presence of on-task behavior at the class wide level, a momentary time sampling protocol was utilized.

Student behavior was assessed through Planned Activity Check (PLACHECK). PLACHECK is an observation protocol commonly used to assess student behavior at the class wide level (Ledford and Gast, 2014). PLACHECK utilizes a version of momentary time sampling recording for on-task or off-task behaviors respectively. PLACHECK

identifies the number of students on-task and off-task during a set interval. While PLACHECK often identifies a target student to compare to the class, a target student will not be identified for this study.

Teacher movement in the classroom was assessed through a frequency count. The classroom was divided into four quadrants for which students are actively seated and investigators will collect a frequency count to determine teacher movement across each quadrant and overall frequency of teacher movement in the classroom. When assessing teacher movement to each quadrant, the researchers calculated movement for each time the teacher moved into a new quadrant. The researchers did not calculate teacher movement within each quadrant.

A social validity measure was utilized to gather teacher perceptions of seating arrangements. The Treatment Acceptability Rating Form-Revised (TARF-R) was utilized in conjunction with questions the primary investigator will add, to account for social validity. The TARF-R is a social validity survey with questions addressing reasonableness, effectiveness, and acceptance of the treatment/interventions provided.

### **Experimental Design**

This study utilized a reversal A, B, A, B design. Condition A was row seating arrangements and Condition B was group/cluster seating arrangements. Across all conditions, data was collected a minimum of four data points and a maximum of eight data points, aligned with the school week. Room arrangements were set each week to aid in feasibility of teachers being able to set up the classroom conducive to the seating arrangement. Due to the nature of the school's calendars two out of three of the classrooms attended school in person four days a week, with one day set aside for virtual

instruction. The criteria of four to eight days were set to ensure participants were not in one condition extensively when a stable trend was not met. Further, if procedural integrity was not met during a condition, the condition was extended past the eight-day maximum criteria.

### **Interobserver Agreement**

Interobserver agreement (IOA) amongst secondary investigators was measured by a team of school psychology graduate students attending Oklahoma State University. The primary investigator utilized video recordings and direct observations to establish interobserver reliability amongst secondary investigators. When reliability is established all investigators participated in the collection of data through in person and video observations.

IOA was established amongst the primary and secondary investigators prior to implementation of the baseline and treatment phases. IOA amongst observers was established when agreement was at 90% or greater. Once all observers established IOA prior to the baseline and treatment phase, IOA was collected 20% of the time for each condition. As recommended by current literature, IOA was collected a minimum 20% of the time for Condition A and Condition B (Ledford and Gast, 2014).

### **Procedural Integrity**

The primary investigator assessed procedural fidelity during all phases and sessions of the study. Procedural integrity refers to adherence to implementation of the intervention proposed (Ledford and Gast, 2014). This includes but is not limited to addressing the proper implementation of the seating arrangement methods according to each condition.

### **Baseline Phase (Condition A)**

Baseline data was collected by the primary investigator amongst all participating classrooms. The primary investigator completed descriptive analysis prior to collecting baseline data to ensure classrooms selected are suitable for completion of the study. For purposes of the current study, the baseline phase was Condition A, as all classrooms were utilizing a row seating arrangement prior to the start of the study. During Condition A, data was collected to identify current levels of student on-task behavior and teacher movement in the classroom. When Condition A was collected and a stable trend of four or more data points was achieved, the treatment phase (Condition B) was conducted.

### **Treatment Phase (Condition B)**

The treatment phase was Condition B and implemented following Condition A to assess student on-task behavior and teacher movement in the classroom when students were placed in group seating arrangements. Both the baseline and treatment phase focused on the physical seating arrangements in the classroom. When Condition B was implemented, Classroom 1 and Classroom 3 utilized desks clustered together for group seating, while Classroom 2 utilized tables for group seating.

### **Data Analysis**

All data collected was assessed through visual analysis. Matriculation through each phase was determined based upon the stable level and trend of each phase and condition conducted (Mercer and Sterling, 2012). The stability of the trend and level was assessed by analyzing the variability amongst data points. Stability of the level was established when 80% of the data points fall within 25% of the median range (Ledford and Gast, 2014). Trend was assessed utilizing the split-middle method. The split-middle



method divides each condition in half and takes the middle data point of both halves to establish a trend line (Ledford and Gast, 2014).

## CHAPTER IV

### FINDINGS

#### **Procedural Integrity**

Procedural integrity was 98% (100% for 83 session and 71% for 6 sessions). During the 6 sessions when procedural integrity was not met with 100%, the data was removed from the results.

#### **Interrater Reliability**

Table 1 illustrates the interobserver agreement results for each classroom.

For student on-task behavior, mean agreement was 92% for Classroom 1 (ranging from 83% to 98%), 94% (ranging from 83% to 100%) for Classroom 2, and 98% for Classroom 3 (ranging from 95% to 100%). Interrater reliability for student on-task behavior was collected 45% of the observation sessions with total mean agreement for student on-task behavior across all three classrooms was 92%. For teacher movement, mean agreement was 90% for Classroom 1 (ranging from 82% to 100%), 92% for Classroom 2 (ranging from 80% to 100%), and 95% for Classroom 3 (ranging from 81% to 100%). Interrater reliability for teacher movement was collected 35% of the

observation sessions with total mean agreement across all three classrooms for teacher movement was 91%.

### **Student On-task Behavior**

Table 2 in conjunction with Figure 1 illustrates the student on-task behavior results for each classroom.

**Classroom 1.** Visual analysis indicates Classroom 1's on-task student behavior was downward trending during initial condition of row seating (Conditions A-1) with a mean of 62% student on-task behavior. When seated in group seating, student behavior initially increased from the previous condition (Condition A-1) and was downward trending throughout the remaining group seating observation sessions (Condition B-1) with a mean of 49% student on-task behavior. Return to Condition A of row seating yielded an initial increase in on-task behavior with significant variability across remaining observations (Condition A-2) with a mean of 44% student on-task behavior. During implementation of group seating (Condition B-2), student behavior slightly increased from the previous conditions and was variable across remaining observations sessions with a mean of 48% student on-task behavior.

**Classroom 2.** Visual analysis indicates Classroom 2's on-task student behavior was stable during the initial condition of row seating (Condition A-1) with a mean of 94% student on-task behavior. When seated in group seating, student behavior decreased from the previous condition (Condition A-1) with a mean of 74% student on-task behavior during group seating (Condition B-1). Reversal back to row seating (Condition A) yielded an increase in student behavior with a mean of 94% student on-task behavior

(Condition A-2). When seated in groups, student on-task behavior decreased with a mean of 75% student on-task behavior (Condition B-2).

**Classroom 3.** Visual analysis indicates Classroom 3's on-task student behavior was stable during the initial condition of row seating (Condition A-1) with a mean of 94% student on-task behavior. When seated in group seating, student behavior decreased from the previous condition (Condition A-1) with a mean of 81% student on-task behavior during group seating (Condition B-1). Reversal back to row seating (Condition A) yielded an increase in student on-task behavior with a 98% student on-task behavior (Condition A-2). When seated in groups, student on-task behavior decreased with a mean of 88% student on-task behavior (Condition B-2).

### **Teacher Movement**

Table 3 in conjunction with Figure 2 and Figure 3 illustrate the teacher movement results for each classroom.

**Classroom 1.** Visual analysis indicates teacher movement was variable during row seating (Condition A-1) with a mean of 89% teacher movement across the classroom where students were actively seated. A frequency count yielded teacher movement across the classroom of 104 times during row seating (Condition A-1). When seated in groups, teacher movement remained stable with 100% of teacher movement across the classroom where students were actively seated. A frequency count yielded teacher movement across the classroom of 124 times during row seating (Condition B-1). Reversal back to row seating yielded initial stability in teacher movement with increased variability with a mean of 89% teacher movement across the classroom where students were actively seated for remaining observations of row seating (Condition A-2). A frequency count

yielded teacher movement across the classroom of 120 times during row seating (Condition A-2). When seated in groups (Condition B-2), teacher movement demonstrated variability with a mean of 86% teacher movement across the classroom where students were actively seated for remaining observations of group seating (Condition B-2). A frequency count yielded teacher movement across the classroom of 121 times during row seating (Condition B-2).

**Classroom 2.** Visual analysis indicates teacher movement was stable across all conditions (A-1, B-1, A-2, B-2), with a mean of 100% teacher movement across the classroom where students were actively seated. A frequency count across conditions yielded variably in the frequency of teacher movement across conditions. A frequency count yielded teacher movement across the classroom of 157 times during row seating (Condition A-1). When seated in groups a frequency count yielded teacher movement across the classroom of 198 times during row seating (Condition B-1). Reversal back to row seating (Condition A-2) yielded A frequency count yielded teacher movement across the classroom of 124. For the final condition of group seating (Condition B-2), frequency count yielded the teacher movement across the classroom 360 times.

**Classroom 3.** Visual analysis indicates teacher movement was variable during row seating (Condition A-1) with a mean of 71% teacher movement across the classroom where students were actively seated. A frequency count yielded teacher movement across the classroom of 78 times during row seating (Condition A-1). When seated in groups, teacher movement was variable with a mean of 79% of teacher movement across the classroom where students were actively seated (Condition B-1). A frequency count yielded teacher movement across the classroom of 90 times during row seating

(Condition B-1). Reversal back to row seating yielded initial stability in teacher movement with continued variability with a mean of 29% teacher movement across the classroom where students were actively seated for remaining observations of row seating (Condition A-2). A frequency count yielded teacher movement across the classroom of 17 times during row seating (Condition A-2). When seated in groups (Condition B-2), teacher movement was remained variable with a mean of 44% teacher movement across the classroom where students were actively seated for remaining observations of group seating (Condition B-2). A frequency count yielded teacher movement across the classroom of 57 times during group seating (Condition B-2).

## CHAPTER V

### CONCLUSIONS

Across all three classrooms, there were higher levels of student on-task behavior were seated in row seating arrangements when compared to groups seating arrangements. While row seating arrangements illustrated higher averages of student on-task behavior, in Classroom 2 and Classroom 3, the decrease in student on-task behavior still yielded an average of on-task behavior above 70%. Throughout literature 80% class wide student engagement is desired (Ling, Hawkins, and Weber, 2011). In 2008, Wannarka and Ruhl conducted a review of studies comparing seating arrangements to academic outcomes and student behavior. Results from this study yielded teachers should utilize row seating to increase on-task behavior (Wannarka and Ruhl, 2008). An additional study conducted in 2015 by Simmons and additional authors found while row seating yields higher levels of on-task behavior, classroom seating arrangements should be linked to instructional practices (Simmons, et al., 2015). The current study illustrated variability in student on-task behavior when assessing row versus group seating, suggesting classroom seating arrangements amongst middle school students should be based upon lesson agendas and instructional practices (Simmons, et al., 2015; Wannarka and Ruhl, 2008).

In Classroom 1, student behavior was variable indicating on-task behavior was not affected by the seating arrangement, but rather external variables not assessed in the

current study (i.e., lesson agenda, proximity to peers). While Classroom 1 illustrated higher averages of on-task behavior when seated in rows, both condition averages fell well below the 80% criteria of class wide student engagement desired amongst schools implementing PBIS. In Classroom 2, student behavior decreased when seated in group seating with a mean of 74% student on-task behavior. Classroom 2 evidenced a change in student on-task behavior when comparing row and group seating, illustrating within Classroom 2 row seating yields higher levels of on-task behavior. In Classroom 3, student on-task behavior decreased when seated in group seating; however, the decrease in student behavior still averaged to 85% on-task student behavior which meets the 80% criteria as defined in literature. This data is consistent with previous findings illustrating effective Tier 1 practices are not solely based upon seating arrangements.

Across all three classrooms, teacher movement increased when students were seated in groups. However, the increase in teacher movement did not illustrate and increase in student on-task behavior. In 2020, a meta-analysis was conducted by Gage and authors depicting the effects of active supervision on student behavior across multiple studies. Results from the meta-analysis illustrate a significant gap in current literature assessing active supervision. Further, active supervision was measured in these studies across multiple settings (i.e., classroom instruction, recess, and transition periods). Results highlight core components of active supervision to include teacher movement, scanning, precorrection, and reinforcement for desired behaviors (Gage, et al., 2020). The current study measured one component of active supervision being teacher movement. While additional factors of active supervision were not assessed, current literature illustrates effective classroom management strategies within PBIS schools utilize



prevention strategies in conjunction with effective reinforcement measures to provide feedback to students and elicit desired behaviors (Gage, et al., 2020). The overall frequency and averages of each teacher movement across each condition yielded evidence of an increase in teacher movement when students were seated in groups in comparison to row seating. While there was an increase in teacher movement, the increase in teacher movement did not directly impact student-on task behavior.

### **Social Validity**

The Treatment Acceptability Rating Form-Revised (TARF-R) social validity survey was utilized to assess teacher satisfaction across each condition of the current study (Condition A: row seating; Condition B: group seating). Findings from this measure illustrate teachers prefer row seating when compared to group seating, and teachers acknowledge group seating lends itself to more off-task behaviors. Specifically, teachers' ratings illustrate rows are more acceptable than group seating, teachers are more willing to utilize rows when compared to group seating, group seating presents more disadvantages, and row seating is more likely to improve student behavior. This data is consistent with previous findings as illustrated in current literature suggesting teachers prefer row seating in comparison to group seating to better manage student behaviors (Bicard, et al., 2013).

### **Implications for Practice**

Current literature suggests seating arrangements should be linked to classroom lesson agendas, as illustrated in previous studies assessing seating arrangements comparing rows, clusters, and horseshoe seating (Wannarka and Ruhl, 2008; Simmons, et al., 2015). The current study evidenced no significant change in student on-task behavior when students were seated in rows with a comparison to on-task behavior when student

were seated in groups. These findings suggest student on-task behavior is linked to additional classroom management practices as evidenced through current literature. Within schools implementing PBIS, effective Tier 1 practices need to be established to ensure student on-task behavior is maintained while preventing opportunities for student off-task behavior. Tier 1 classroom management practices include but are not limited to stating desired expectations, consistent practices for responding to undesired behaviors, and effective active supervision techniques. While teacher movement did not play a significant role in increasing student on-task behavior, previous research attests that in conjunction with additional effective classroom management practices, teacher movement increases student engagement (Gunter, et al., 1995; Gage et al., 2020).

### **Limitations**

The current study presented a few limitations. The sample size included three classrooms in rural districts of Oklahoma. Class size was variable across the three classrooms ranging from ten students enrolled in the classroom to twenty-seven students enrolled in the classroom. With the variability in class size, some observation sessions were conducted when students were absent from school. Further, due to COVID-19, there were extended breaks in the data collection process. Across all three classrooms, group seating was frequently the preferred seating amongst students; however, teachers were not required to maintain group seating arrangements once the observation period was completed. Therefore, teachers created their own contingency where continuing group seating could be earned if students remained on-task. While the current data does not suggest group seating increased on-task behavior, students were aware in order to stay in group seating they were to meet the behavioral expectations of the teacher. Further, this study measured on-task behavior as defined as “actively participating in the designated

activity by (a) being oriented toward the teacher or task, (b) having necessary materials, (c) following teacher directions, and (d) listening through verbal (e.g., asking questions) and nonverbal (e.g., nodding head or eye contact) means” (Allday, Bush, Ticknor, and Walker, 2011, p. 394). This definition did not account for student on-task behavior related to technology usage. In two of the three classes, student actively utilized chrome books throughout many of the observation sessions. The observers were unable to actively assess if students were completing assignments on their chrome books.

Considering these limitations, the current study still provides evidence suggesting seating arrangements alone cannot predict student on-task behavior amongst middle school students. In conjunction with additional classroom management practices associated with active supervision, seating arrangements may increase student engagement when paired appropriately with instruction and classroom activities.

### **Future Directions**

Future studies should continue to assess the effects of classroom management strategies amongst middle school students. While the current study evidenced no significant differences in student on-task behavior when observed in group seating to row seating comparisons, future research should measure the effects of seating arrangements amongst middle school students when matched to appropriate lesson agendas. A key component which should be further assessed is the link between middle school seating arrangements when seated in arrangements most conducive to the instructional planning for the designated classroom. Specifically, future studies should consider the effects of seating arrangements amongst students completing independent seatwork, lecture style instruction, and collaborative projects.

The current study focused data collection amongst smaller rural districts. Future studies should consider evaluating the effects of seating arrangements amongst larger school districts with larger class sizes. Specifically, future studies should evaluate the effects of seating arrangements amongst schools implementing PBIS in comparison to school districts not implementing PBIS. Core components of the PBIS target effective preventative classroom management practices towards increasing desired on-task behaviors. Future studies should assess the effects of PBIS implementation when evaluating seating arrangements. Additionally, while all participants of the current study were in school districts implementing PBIS, future studies should consider assessing the fidelity of PBIS implementation in relation to classroom management practices.

## REFERENCES

- Alberto, P. & Troutman, A.C. (2012). *Applied Behavior Analysis for Teachers*, (9<sup>th</sup> ed.). Columbus, Ohio: Pearson.
- Algozzine, B., Barrett, S., Eber, L., George, H., Horner, R., Lewis, T., Putnam, B., Swain-Bradway, J., McIntosh, K., & Sugai, G (2014). Schoolwide PBIS Tiered Fidelity Inventory. OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports. Retrieved from [https://www.pbisapps.org/Resources/SWIS%20Publications/SWPBIS%20Tiered%20Fidelity%20Inventory%20\(TFI\).pdf](https://www.pbisapps.org/Resources/SWIS%20Publications/SWPBIS%20Tiered%20Fidelity%20Inventory%20(TFI).pdf)
- Allday, R. A., Bush, M., Ticknor, N., & Walker, L. (2011). Using teacher greetings to increase speed to task engagement. *Journal of Applied Behavior Analysis*, 44(2), 393-396.
- Allen, G. E., Common, E. A., Germer, K. A., Lane, K. L., Buckman, M. M., Oakes, W. P., & Menzies, H. M. (2020). A Systematic Review of the Evidence Base for Active Supervision in Pre-K–12 Settings. *Behavioral Disorders*, 45(3), 167-182.
- Anderson, C. M., & Borgmeier, C. (2010). Tier II interventions within the framework of school-wide positive behavior support: Essential features for design, implementation, and maintenance. *Behavior analysis in practice*, 3(1), 33-45.

- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of applied behavior analysis*, 1(1), 91.
- Barnhill, G.P. (2005). Functional behavioral assessment in schools. *Intervention in School and Clinic*, 40(3), 131-143.
- Barth, J. M., Dunlap, S. T., Dane, H., Lochman, J. E., & Wells, K. C. (2004). Classroom environment influences on aggression, peer relations, and academic focus. *Journal of School Psychology*, 42, 115–133. doi:10.1016/j.jsp.2003.11.004.
- Bergan, J. R. (1995). Evolution of a problem-solving model of consultation. *Journal of Educational and Psychological Consultation*, 6(2), 111-123.
- Berliner, D. C. (1986). In pursuit of the expert pedagogue. *Educational Researcher*, 15, 5-13.
- Bicard, D. F., Ervin, A., Bicard, S. C., & Baylot-Casey, L. (2012). Differential effects of seating arrangements on disruptive behavior of fifth grade students during independent seatwork. *Journal of applied behavior analysis*, 45(2), 407-411.
- Boneshefski, M. J., & Runge, T. J. (2014). Addressing disproportionate discipline practices within a school-wide positive behavioral interventions and supports framework: A practical guide for calculating and using disproportionality rates. *Journal of Positive Behavior Interventions*, 16(3), 149-158.
- Bonus, M., & Riordan, L. (1998). Increasing Student On-Task Behavior through the Use of Specific Seating Arrangements.

- Bradshaw, C. P., Koth, C. W., Bevans, K. B., Ialongo, N., & Leaf, P. J. (2008). The impact of school-wide positive behavioral interventions and supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly*, 23(4), 462.
- Brouwers, A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education*, 16(2), 239-253.
- Chaffee, R. K., Briesch, A. M., Johnson, A. H., & Volpe, R. J. (2017). A meta-analysis of class-wide interventions for supporting student behavior. *School Psychology Review*, 46, 149–164. doi:10.17105/SPR-2017-0015.V46-2
- Cheryan, S., Ziegler, S. A., Plaut, V. C., & Meltzoff, A. N. (2014). Designing classrooms to maximize student achievement. *Policy Insights from the Behavioral and Brain Sciences*, 1(1), 4-12.
- Childs, K. E., Kincaid, D., George, H. P., & Gage, N. A. (2016). The relationship between school-wide implementation of positive behavior intervention and supports and student discipline outcomes. *Journal of Positive Behavior Interventions*, 18(2), 89-99.
- Collier-Meek, M. A., Johnson, A. H., Sanetti, L. H., & Minami, T. (2019). Identifying Critical Components of Classroom Management Implementation. *School Psychology Review*, 48(4), 348-361.

- Colvin, G.; Sugai, G.; Good, R.; & Lee, Y. (1997) Using Active Supervision and Precorrection to Improve Transition Behaviors in an Elementary School
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). Applied behavior analysis.
- Conroy, M. A., Asmus, J. M., Ladwig, C. N., Sellers, J. A., & Valcante, G. (2004). The effects of proximity on the classroom behaviors of students with autism in general education settings. *Behavioral Disorders, 29*, 119–129. doi:10.1177/019874290402900201
- Curby, T. W., Rimm-Kaufman, S. E., & Abry, T. (2013). Do emotional support and classroom organization earlier in the year set the stage for higher quality instruction? *Journal of School Psychology, 51*, 557–569. doi:10.1016/j.jsp.2013.06.001
- De Pry, R. & Sugai, G. (2002) The Effect of Active Supervision and Pre-correction on Minor Behavioral Incidents in a Sixth Grade General Education Classroom
- Dicke, T., Elling, J., Schmeck, A., & Leutner, D. (2015). Reducing reality shock: The effects of classroom management skills training on beginning teachers. *Teaching and Teacher Education, 48*, 1–12.
- Downer, J. T., Rimm-Kaufman, S. E., & Pianta, R. C. (2007). How do classroom conditions and children's risk for school problems contribute to children's behavioral engagement in learning? *School Psychology Review, 36*, 413–432.
- DuPaul, G. J., Weyandt, L. L., & Janusis, G. M. (2011). ADHD in the classroom: Effective intervention strategies. *Theory into practice, 50*(1), 35-42.



- Emmer, E. T., & Stough, L. M. (2001). Classroom management: A critical part of educational psychology, with implications for teacher education. *Educational Psychologist*, 36(2), 103–112. doi:10.1207/S15326985EP3602\_5.
- Ennis, R. P., Royer, D. J., Lane, K. L., Menzies, H. M., Oakes, W. P., & Schellman, L. E. (2018). Behavior-specific praise: An effective, efficient, low-intensity strategy to support student success. *Beyond Behavior*, 27(3), 134-139.
- Espin, C. A., & Yell, M. L. (1994). Critical indicators of effective teaching for preservice teachers: Relationships between teaching behaviors and ratings of effectiveness. *Teacher Education and Special Education*, 17, 154-169.
- Ervin, R. A., Schaughency, E., Matthews, A., Goodman, S. D., & McGlinchey, M. T. (2007). Primary and secondary prevention of behavior difficulties: Developing a data-informed problem-solving model to guide decision making at a school-wide level. *Psychology in the Schools*, 44(1), 7-18.
- Evertson, C. M., Emmer, E. T., Sanford, J. P., & Clements, B. S. (1983). Improving classroom management: An experiment in elementary classrooms. *The Elementary School Journal*, 84, 172-188.
- Evertson C. M., & Weinstein, C. (2006). Classroom management as a field of inquiry. In C. M. Evertson & C. Weinstein (Eds.), *Handbook of Classroom Management: Research, practice, and contemporary issues* (pp. 3-15). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

- Farmer, T. W., Chen, C. C., Hamm, J. V., Moates, M. M., Mehtaji, M., Lee, D., & Huneke, M. R. (2016). Supporting teachers' management of middle school social dynamics: The scouting report process. *Intervention in School and Clinic, 52*(2), 67-76.
- Farkas, M. S., Simonsen, B., Migdole, S., Donovan, M. E., Clemens, K., & Cicchese, V. (2012). Schoolwide positive behavior support in an alternative school setting: An evaluation of fidelity, outcomes, and social validity of tier 1 implementation. *Journal of Emotional and Behavioral Disorders, 20*(4), 275-288.
- Gage, N. A., Scott, T., Hirn, R., & MacSuga-Gage, A. S. (2018). The relationship between teachers' implementation of classroom management practices and student behavior in elementary school. *Behavioral Disorders, 43*(2), 302-315.
- Gage, N. A., Haydon, T., MacSuga-Gage, A. S., Flowers, E., & Erdy, L. (2020). An Evidence-Based Review and Meta-Analysis of Active Supervision. *Behavioral Disorders, 0198742919851021*.
- Goodman, G., & Pendergrass, R. A. (2001). Competence in the management of classroom behavior: An eclectic approach. *Education, 96*, 297-301.
- Gremmen, M. C., Van den Berg, Y. H., Segers, E., & Cillessen, A. H. (2016). Considerations for classroom seating arrangements and the role of teacher characteristics and beliefs. *Social Psychology of Education, 19*(4), 749-774.

- Grubaugh, S., & Houston, R. (1990). Establishing a classroom environment that promotes interaction and improved student behavior. *The Clearing House*, 63(8), 375-378.
- Guardino, C. A., & Fullerton, E. (2010). Changing behaviors by changing the classroom environment. *Teaching exceptional children*, 42(6), 8-13.
- Guardino, C., & Antia, S. D. (2012). Modifying the classroom environment to increase engagement and decrease disruption with students who are deaf or hard of hearing. *Journal of Deaf Studies and Deaf Education*, 17(4), 518-533.
- Gunter, P. L., Shores, R. E., Jack, S. L., Rasmussen, S. K., & Flowers, J. (1995). On the move using teacher/student proximity to improve students' behavior. *Teaching Exceptional Children*, 28(1), 12-14.
- Haghighi, M. M., & Jusan, M. M. (2012). Exploring students behavior on seating arrangements in learning environment: a review. *Procedia-Social and Behavioral Sciences*, 36, 287-294.
- Hammonds, T. (2017). High Teacher Turnover: Strategies School Leaders Implement to Retain Teachers in Urban Elementary Schools. *National Teacher Education Journal*, 10(2).
- Haydon, T., DeGreg, J., Maheady, L., & Hunter, W. (2012). Using active supervision and precorrection to improve transition behaviors in a middle school classroom. *Journal of Evidence-Based Practices for Schools*, 13, 81–97.

- Haydon, T., & Kroeger, S. D. (2016). Active supervision, precorrection, and explicit timing: A high school case study on classroom behavior. *Preventing School Failure: Alternative Education for Children and Youth, 60*(1), 70-78.
- Haydon, T. & Musti-Rao, S. (2011) Effective Use of Behavior Specific Praise: A middle school case study
- Haydon, T., & Scott, T. M. (2008). Using common sense in common settings: Active supervision and precorrection in the morning gym. *Intervention in School and Clinic, 43*, 283–290. doi:10.1177/1053451208314491
- Hunter, W. C., & Haydon, T. (2019). Implementing a classroom management package in an urban middle school: A case study. *Preventing School Failure: Alternative Education for Children and Youth, 63*(1), 68-76.
- Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational leadership, 60*(8), 30-33.
- Johnson-Gros, K. N., Lyons, E. A., & Griffin, J. R. (2008). Active supervision: An intervention to reduce high school tardiness. *Education and Treatment of Children, 31*, 39–53.
- Killu, K., Weber, K. P., Derby, K. M., & Barretto, A. (2006). Behavior intervention planning and implementation of positive behavioral support plans: An examination of states' adherence to standards for practice. *Journal of Positive Behavior Interventions, 8*(4), 195-200.

- Kohler, F. W., & Strain, P. S. (1992). Applied behavior analysis and the movement to restructure schools: Compatibilities and opportunities for collaboration. *Journal of Behavioral Education, 2*(4), 367-390.
- Korpershoek, H., Harms, T., de Boer, H., van Kuijk, M., & Doolaard, S. (2016). A meta-analysis of the effects of classroom management strategies and classroom management programs on students' academic, behavioral, emotional, and motivational outcomes. *Review of Educational Research, 86*(3), 643-680.
- Ledford, J. R., & Gast, D. L. (Eds.). (2014). Single case research methodology: Applications in special education and behavioral sciences.
- Lewis, T. J., Colvin, G., & Sugai, G. (2000). The effects of pre-correction and active supervision on the recess behavior of elementary students. *Education and Treatment of Children, 23*, 109–121.
- Lewis, T.J, Scott, T.M., Wehby, J.H., & Wills, H.P. (2014). Direct observation of teacher and student behavior in school settings: Trends, Issues, and Future Directions. *Behavioral Disorders, 39*, 190-200.
- Ling, S., Hawkins, R. O., & Weber, D. (2011). Effects of a classwide interdependent group contingency designed to improve the behavior of an at-risk student. *Journal of Behavioral Education, 20*(2), 103-116.
- MacSuga-Gage, A. S., & Simonsen, B. (2015). Examining the effects of teacher-directed opportunities to respond on student outcomes: A systematic review of the

literature. *Education and Treatment of Children*, 38, 211–239.

doi:10.1353/etc.2015.0009

Maggin, D. M., Johnson, A. H., Chafouleas, S. M., Ruberto, L. M., & Berggren, M. L.

(2012). A systematic evidence review of school-based group contingency

interventions for students with challenging behavior. *Journal of School*

*Psychology*, 50, 625–654. doi:10.1016/j.jsp.2012.06.001

Marchant, M., Heath, M. A., & Miramontes, N. Y. (2013). Merging empiricism and

humanism: Role of social validity in the school-wide positive behavior support

model. *Journal of Positive Behavior Interventions*, 15(4), 221-230.

Markelz, M. & Taylor, J. (2016) Effects of Teacher Praise on Attending Behaviors and

Academic Achievement of Students with Emotional and Behavioral Disabilities

Mathews, S., McIntosh, K., Frank, J. L., & May, S. L. (2014). Critical features predicting

sustained implementation of school-wide positive behavioral interventions and

supports. *Journal of Positive Behavior Interventions*, 16(3), 168-178.

McCorskey, J. C., & McVetta, R. W. (1978). Classroom seating arrangements:

Instructional communication theory versus student preferences. *Communication*

*Education*, 27, 99–111. doi:10. 1080/03634527809378281.

McIntosh, K., Borgmeir, C., Anderson, C.M., Horner, R.H., Rodriguez, B.J., & Tobin,

T.J. (2008). Technical adequacy of the functional assessment checklist: Teachers

and staff (FACTS) FBA interview measure. *Journal of Positive Behavior*

*Interventions*, 10, 33-45.

- McIntosh, K., & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS*. Guilford Publications.
- McIntosh, K., Mercer, S. H., Nese, R. N., & Ghemraoui, A. (2016). Identifying and predicting distinct patterns of implementation in a school-wide behavior support framework. *Prevention Science, 17*(8), 992-1001.
- McKeown, S., Stringer, M., & Cairns, E. (2015). Classroom segregation: Where do students sit and how is this related to group relations? *British Educational Research Journal, 42*(1), 40–55. doi:10.1002/berj.3200.
- Mellard, D. F., Frey, B. B., & Woods, K. L. (2012). School-wide Student Outcomes of Response to Intervention Frameworks. *Learning Disabilities--A Contemporary Journal, 10*(2).
- Mercer, S. H., & Sterling, H. E. (2012). The impact of baseline trend control on visual analysis of single-case data. *Journal of school psychology, 50*(3), 403-419.
- Mills, G. E., & Gay, L. R. (2016). *Educational research: Competencies for analysis and applications*. Pearson. One Lake Street, Upper Saddle River, New Jersey 07458.
- Mitchell, B. S., Hirn, R. G., & Lewis, T. J. (2017). Enhancing effective classroom management in schools: Structures for changing teacher behavior. *Teacher Education and Special Education, 40*(2), 140-153.
- Nelson, M. A., Caldarella, P., Hansen, B. D., Graham, M. A., Williams, L., & Wills, H. P. (2018). Improving student behavior in art classrooms: An exploratory study of CW-FIT Tier 1. *Journal of Positive Behavior Interventions, 20*(4), 227-238.

- Newton, J. S., Algozzine, B., Algozzine, K., Horner, R. H., & Todd, A. W. (2011). Building local capacity for training and coaching data-based problem solving with positive behavior intervention and support teams. *Journal of Applied School Psychology, 27*(3), 228-245.
- Nock, M.K., & Kurtz, S.M.S. (2005). Direct behavioral observations in school settings: Brining science to practice. *Cognitive and Behavioral Practice, 12*, 359-370. doi: 1077-7229/05/359-370
- Nordquist, V. M., & Twardosz, S. (1990). Preventing behavior problems in early childhood special education classrooms through environmental organization. *Education and Treatment of Children, 27*(4), 274-287.
- Oberle, E., Domitrovich, C. E., Meyers, D. C., & Weissberg, R. P. (2016). Establishing systemic social and emotional learning approaches in schools: A framework for schoolwide implementation. *Cambridge Journal of Education, 46*(3), 277-297.
- Oliver, R. M., Wehby, J. H., & Reschly, D. J. (2011). Teacher classroom management practices: Effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews, 7*(1), 1-55.
- Pisacreta, J., Tincani, M., Connell, J. E., & Axelrod, S. (2011). Increasing teachers' use of a 1: 1 praise-to-behavior correction ratio to decrease student disruption in general education classrooms. *Behavioral Interventions, 26*(4), 243-260.



- Ramli, N. H., Ahmad, S., & Masri, M. H. (2013). Improving the classroom physical environment: Classroom users' perception. *Procedia-Social and Behavioral Sciences, 101*, 221-229.
- Rathel, J. M., Drasgow, E., Brown, W. H., & Marshall, K. J. (2014). Increasing induction-level teachers' positive-to-negative communication ratio and use of behavior-specific praise through e-mailed performance feedback and its effect on students' task engagement. *Journal of Positive Behavior Interventions, 16*(4), 219-233.
- Reinke, W. M., Herman, K. C., & Stormont, M. (2013). Classroom-level positive behavior supports in schools implementing SW-PBIS: Identifying areas for enhancement. *Journal of Positive Behavior Interventions, 15*(1), 39-50.
- Reupert, A., & Woodcock, S. (2010). Success and near misses: Pre-service teachers' use, confidence and success in various classroom management strategies. *Teaching and Teacher Education, 26*(6), 1261-1268.
- Rose, L. C., & Gallup, A. M. (2005). The 37th annual Phi Delta Kappa/Gallup poll of the public's attitudes toward the public schools. *Phi Delta Kappan, 87*(1), 41-57.
- Rosenfield, P., Lambert, N. M., & Black, A. (1985). Desk arrangement effects on pupil classroom behavior. *Journal of educational psychology, 77*(1), 101.
- Sieberer-Nagler, K. (2016). Effective Classroom-Management & Positive Teaching. *English Language Teaching, 9*(1), 163-172.

- Simmons, K., Carpenter, L., Crenshaw, S., & Hinton, V. M. (2015). Exploration of classroom seating arrangement and student behavior in a second-grade classroom. *Georgia Educational Researcher, 12*(1), 51-68.
- Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children, 35*(1), 351-380.
- Simonsen, B., Freeman, J., Goodman, S., Mitchell, B., Swain-Bradway, J., Flannery, B., Putnam, B. (2015). Supporting and responding to student behavior: Evidence-based classroom strategies for teachers. OSEP Technical Assistance Brief. Retrieved from [https://osepideasthatwork.org/sites/default/files/ClassroomPBIS\\_508.pdf](https://osepideasthatwork.org/sites/default/files/ClassroomPBIS_508.pdf)
- Simonsen, B., Myers, D., & DeLuca, C. (2010). Teaching teachers to use prompts, opportunities to respond, and specific praise. *Teacher Education in Special Education, 33*(4), 300–318. doi:10.1177/0888406409359905
- Smith, D. L., & Smith, B. J. (2006). Perceptions of violence: The views of teachers who left urban schools. *The High School Journal, 89*, 34-42.
- Spriggs, A. D., Lane, J. D., & Gast, D. L. (2014). Visual representation of data.
- Stichter, J.P., Sasso, G.M., & Jolivette, K. (2004). Structural analysis and intervention in a school setting: Effects on problem behavior for a student with an emotional/behavioral disorder. *Journal of Positive Behavior Interventions, 6*(3), 166-177.

- Stichter, J. P., Lewis, T. J., Whittaker, T. A., Richter, M., Johnson, N. W., & Trussell, R. P. (2009). Assessing teacher use of opportunities to respond and effective classroom management strategies: Comparisons among high-and low-risk elementary schools. *Journal of Positive Behavior Interventions, 11*(2), 68-81.
- Sugai, G., Lewis-Palmer, T., & Hagan-Burke, S. (2010). Overview of the functional behavioral assessment process. *Exceptionality, 8*(3), 149-160. doi: 10.1207/S15327035EX08032
- Sugai, G., & Horner, R. H. (2020). Sustaining and scaling positive behavioral interventions and supports: Implementation drivers, outcomes, and considerations. *Exceptional Children, 86*(2), 120-136.
- Sutherland, K. S., & Wehby, J. H. (2001). Exploring the relationship between increased opportunities to respond to academic requests and the academic and behavioral outcomes of students with EBD: A review. *Remedial and Special Education, 22*, 113–121. doi:10.1177/074193250102200205
- Van den Berg, Y. H., & Cillessen, A. H. (2015). Peer status and classroom seating arrangements: A social relations analysis. *Journal of Experimental Child Psychology, 130*, 19-34.
- Van den Berg, Y. H. M., & Stoltz, S. E. M. J. (2018). Enhancing social inclusion of children with externalizing problems through classroom seating arrangements: A randomized controlled trial. *Journal of Emotional and Behavioral Disorders, 26*(1), 31-41.

- Wang, M. T., & Degol, J. L. (2016). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*, 28(2), 315-352.
- Wannarka, R., & Ruhl, K. (2008). Seating arrangements that promote positive academic and behavioural outcomes: A review of empirical research. *Support for Learning*, 23, 89–93.
- Wheldall, K., & Bradd, L. (2013). Classroom seating arrangements and classroom behaviour. *Developments in educational psychology*, 181-195.
- Wheldall, K., & Lam, Y. (1987). Rows versus tables: II. The effects of two classroom seating arrangements on classroom disruption rate, on-task behaviour and teacher behaviour in three special school classes. *Educational Psychology*, 7, 303–312.
- Wills, H. P., Iwazuk, W. M., Kamps, D., & Shumate, E. (2014). CW-FIT: Group contingency effects across the day. *Education and Treatment of Children*, 37(2), 191-210.
- Wood, C.L., Kisinger, K.W., Brosh, C.R., Fisher, L.B., & Muharib, R. (2018). Stopping behavior before it starts: Antecedent interventions for challenging behavior. *Teaching Exceptional Children*, 50(6), 356-363.

## APPENDICES

### Appendix A: PLACHECK Protocol

#### Planned Activity Check (PLACHECK) for Classroom Observations

Observers name: \_\_\_\_\_ Date: \_\_\_\_\_

Classroom/Teacher: \_\_\_\_\_ Number of students: \_\_\_\_\_

Location of the observation: \_\_\_\_\_ Start time: \_\_\_\_\_ End time: \_\_\_\_\_

#### Directions:

1. At the beginning of the observation, note the total number of students present within the location where the observation is being.
2. Set the timer to your designated interval (e.g. **15 seconds**, 20 seconds, 30 seconds, 1 minute, etc.)
3. Start the timer
4. Scan the room slowly from left to right.
  - a. While scanning, count number of students who are off task and record on chart below.
5. When the timer goes off at the designated interval repeat steps 3 and 4 until **sixty** data points are obtained.

Minute	Interval	# Students on task	#Students off task	80% on?
<b>1.</b>	<b>1.</b>			
	<b>2.</b>			
	<b>3.</b>			
	<b>4.</b>			
<b>2.</b>	<b>5.</b>			
	<b>6.</b>			
	<b>7.</b>			
	<b>8.</b>			
<b>3.</b>	<b>9.</b>			
	<b>10.</b>			
	<b>11.</b>			

4.	12.			
5.	13.			
	14.			
	15.			
	16.			
6.	17.			
	18.			
	19.			
	20.			
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	22.			
	23.			
	24.			
8.	25.			
	26.			
	27.			
	28.			
9.	29.			
	30.			
	31.			
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10.	33.			
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	35.			
	36.			
11.	37.			
	38.			
	39.			
	40.			
12.	41.			
	42.			
	43.			
	44.			
13.	45.			
	46.			
	47.			
	48.			
14.	49.			
	50.			

15.	51.			
	52.			
16.	53.			
	54.			
	55.			
	56.			
17.	57.			
	58.			
	59.			
	60.			

Use the following to calculate on- task and off-task percentages by hand.

**# Of Students to Meet 80% Criteria:  $.80 \times (\# \text{ of students in class}) =$**

\_\_\_\_\_

**# Of Intervals to Meet 80% Criteria:  $.80 \times (\# \text{ of intervals}) =$**

\_\_\_\_\_

**Percentage of intervals in which 80% or more of the class is on task:**

\_\_\_\_\_

*(Find percentage of intervals by dividing the total number of intervals in which 80% or more*

*of the class is on task by 10 and then multiplying by 100)*

**Appendix B: Treatment Integrity Protocol**

- Seating arrangement aligns with current condition being assessed. (i.e. seats are in rows or groups as permitted by condition).
- Video recording is started when observer begins timer.
- Observer utilized timer to measure intervals.
- Number of students was counted at beginning of observation.
- 60 data points were obtained on the PLACHECK protocol for the observation period.
- Observer divided room into quadrants where students are actively seated.
- Teacher movement frequency count was recorded during the same observation on-task behavior was recorded. *Video recording was permissible to obtain teacher movement protocol when each video is directly linked to an observation.*

**Notes for primary investigator:**

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## Appendix C: TARF-R Social Validity Protocol

ADAPTED: TREATMENT ACCEPTABILITY RATING FORM – REVISED (TARF-R)

© (Reimers, T., Wacker, D., Cooper, L., & DeRaad, A., 1992)

\*Please complete the items listed below by circling the answer that best indicates how you feel about the intervention. \*

**How acceptable do you find the seating arrangement to be regarding your concerns about this classroom?**

1	2	3
not at all acceptable	neutral	very acceptable

**How willing are you to carry out this seating arrangement?**

1	2	3
not at all willing	neutral	very willing

**Given this classroom's behavioral concern, how reasonable do you find the seating arrangement to be?**

1	2	3
not at all reasonable	neutral	very reasonable

**How costly will it be to carry out this intervention?**

1	2	3
not at all costly	neutral	very costly

**To what extent do you think there might be disadvantages in following this intervention?**

1	2	3
not at all likely	neutral	very likely

**How likely is this intervention to make permanent improvements in this classroom's behavior?**

1	2	3
not at all likely	neutral	very likely

**How much time was needed each day for you to carry out this intervention?**

1	2	3
No time at all	neutral	a lot of time

**How confident are you that this intervention was effective?**

1	2	3
not at all confident	neutral	very confident

**How disruptive will it be to carry out this intervention?**

1	2	3
not at all disruptive	neutral	very disruptive

**How effective is this intervention likely to be for this classroom?**

1	2	3
not at all effective	neutral	very effective

**How affordable is this intervention?**

1	2	3
not at all affordable	neutral	very affordable

**How much do you like the procedures used in the proposed intervention?**

1	2	3
do not like at all	neutral	like a lot

**How willing will other staff members be to help carry out this intervention?**

1	2	3
not at all willing	neutral	very willing

**To what extent are undesirable side effects likely to result from this intervention?**

1	2	3
not at all likely	neutral	very likely

**How much discomfort is this classroom likely to experience during the course of this intervention?**

1	2	3
not at all likely	neutral	very likely

**How willing would you be to change your routines to carry out this intervention?**

1	2	3
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not at all willing

neutral

very willing

**How well will carrying out this intervention fit into the existing routine?**

1  
not at all fitting

2  
neutral

3  
very fitting

## VITA

Elizabeth Banks

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Doctor of Philosophy

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