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The Effect Changes in the Weather Have on Kindergarten through Third-Grade Students' Behavior

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Dr. Shelly Fransen, Dissertation Chair	8/11/2022 Date
Dr. Laura O'Quinn, Committee Member	8/11/2022 Date
Dr. Travis Kite, Committee Member	8/11/2022 Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Sara Michelle Calderon

Signature:  Date: 8/11/2022

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Abstract

The joking comments throughout the halls of elementary schools between teachers, “it is going to rain soon” or “a storm is brewing,” seemed to be just a hard day’s excuse. The purpose of this mixed methods study was to understand if there was accuracy in these joking comments. Beginning with quality classroom management and understanding student behaviors, this research examined educators’ perspectives on changing weather and the behavior of their students in their classrooms. In order for a comprehensive understanding, quality classroom management was the most important aspect. Classroom management is one of the most difficult aspects of teaching (Gage & MacSuga-Gage, 2017) yet is crucial to effective learning in a classroom (Sieberer-Nagler, 2016). The framework was developed around Sieberer-Nagler’s *Effective Classroom-Management & Positive Teaching* (2016). Originally, data was attempted to be gathered from three Southwestern Missouri School Districts. However, due to the COVID-19 Pandemic, teacher participation was low. Therefore, the study was downgraded to a case study gathering data from one district in the Northeastern Region of Texas. Survey responses were gathered and a panel of three participants in a focus group provided the data for this research. Survey responses were quantitative, and the focus group responses were qualitative. Implications of this study include the significance of educators having adequate classroom management training, classroom management strategies, understanding of student behaviors, and flexibility.

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Chapter One: Introduction

According to DeMonte (2015), the education profession is predicted to add between 1.5 and 3 million new teachers between the years 2015 and 2025 (p. 1). Lew and Nelson (2016) found job satisfaction as one of the greatest concerns in developing new teachers, due to classroom management difficulties. Smith et al. (2015) suggested effective classroom management techniques, including consistent classroom procedures, encouragement of positive student behavior, and the discouragement of poor student behavior, proved to be successful when measuring student learning.

Classroom management was defined as a teacher's ability to maintain a classroom learning atmosphere through structure, student engagement, reinforcement, and consistency without disruption to learning (Fisher et al., 2015; Garwood et al., 2017; Kratochwill et al., 2018). While classroom management was found to be crucial to effective learning in the classroom (Marzano, 2003; Sieberer-Nagler, 2016; Uriegas et al., 2013), many researchers noted classroom management as the most difficult part of teaching for new teachers (Gage & MacSuga-Gage, 2017; Koth, 2016; Sieberer-Nagler, 2016). Thus, when classroom management was not successful, job satisfaction was low (Lew & Nelson, 2016).

Gage and MacSuga-Gage (2017) shared concern with a lack of focus on classroom management skills when preparing new educators to teach, therefore making it harder for teachers to succeed. Garwood et al. (2017) also found new teachers were not fully developed in areas of classroom management and experience, due to a limited number of classroom strategy courses offered or required by accrediting collegiate

institutions. Thus, compounding the difficulty of keeping students on task and learning without disruptions (Gage & MacSuga-Gage, 2017; Yurtseven, 2017).

The failure of classroom management strategies (Lew & Nelson, 2016; Sieberer-Nagler, 2016; Uriegas et al., 2013) and the lack of education and experience (Buchanan et al., 2013; Garwood et al., 2017; Lew & Nelson, 2016; Yurtseven, 2017) was a cause for career dissatisfaction in teachers (Lew & Nelson, 2016). To make that more complicated, the thought of the weather affecting human behavior (Loewen, 2016; Lucas & Lawless, 2013; Marcola, 2016; Szalavitz, 2013; Trang et al., 2016) begged the question of how the weather affected student behavior in the classroom (VanBuskirk & Simpson, 2013). The background of the study and statement of the problem are covered in Chapter One. Further identified are the conceptual framework guiding the study, the purpose of the study, and the research questions. The significance of the study and the definition of key terms are provided. Finally, the delimitations, limitations, and assumptions are detailed.

Background of the Study

According to Kratochwill et al. (2018) and Sieberer-Nagler (2016), an established orderly classroom environment increased meaningful academic learning and facilitated social and emotional growth for students. In 2015, the United States realized the No Child Left Behind Act of 2002, created as a written guide for teachers to assist students with making educational progress, was weak in some areas and required additional support (U.S. Department of Education, 2015). The No Child Left Behind Act of 2002 placed emphasis on student growth regardless of race, income, zip code, disability, home language, or background (U.S. Department of Education, 2015). This act was updated in

2015 when requirements of 100% student achievement were not achieved (U.S. Department of Education, 2015).

The Every Student Succeeds Act was created to address these additional needs (U.S. Department of Education, 2015). Quality classroom management, as described by Kratochwill et al. (2018), was imperative for teachers focused on implementing the new requirements into their classroom. The Every Student Succeeds Act of 2015, as described by the U.S. Department of Education (2015), raised the rigor of concepts taught to a new required success level. Moran (2015) suggested schools and teachers who did not perform successfully to the higher level of rigor over a period of four years risked losing federal funding or the government taking over the school.

Kratochwill et al. (2018) determined the level of rigor required by the Every Student Succeeds Act of 2015 could have been reached with a quality classroom management system. This classroom management system included a well-established orderly environment where students felt success and experienced positive outcomes while in the well managed classroom (Kratochwill et al., 2018). As the teaching profession expands, classroom management continues to be a stressor impacting job satisfaction and the amount of learning achieved in the classroom (DeMonte, 2015; Gage & MacSuga-Gage, 2017; Lew & Nelson, 2016).

Statement of the Problem

For decades, multiple researchers have linked weather and barometric pressure changes to alterations in the moods of human beings (Loewen, 2016; Marcola, 2016; Trang et al., 2016). Changing weather patterns may affect human emotions, feelings, and individual decision-making (Loewen, 2016; Marcola, 2016). Researchers Barber (2020)

and Harley (2018) found when temperatures increased, human beings tended to increase aggressive behaviors toward others and when the temperature was cold for an extended period of time, human beings tended to become sad or depressed.

According to Grohol (2008) and Marcola (2016), people who stayed inside due to prolonged bouts of rain or extreme cold experienced depression or sadness. With the onset of a storm and barometric pressure changes, researchers VanBuskirk and Simpson (2013) found unwanted behaviors in children diagnosed with Autism increased. These unwanted behaviors made classroom management more difficult during the same time period as barometric pressure changes (VanBuskirk & Simpson, 2013). All in all, when the weather changed, emotions became less stable, which increased behavioral issues in the classroom, resulting in decreased learning (Grohol, 2008; Lagace-Seguin & d'Entremont, 2005; Marcola, 2016; VanBuskirk & Simpson, 2013).

Lagace-Seguin and d'Entremont (2005) indicated weather or meteorological conditions could have a negative effect on student behavior, resulting in an undesirable learning environment. Such learning environments inhibited the teacher's classroom management system (VanBuskirk & Simpson, 2013). However, teachers continued to strive for the perfect learning environment with strong classroom management, possibly not understanding changes in the weather could have affected their outcomes (Lagace-Seguin & d'Entremont, 2005).

If educators could predict possible changes in behavior of children within their classrooms, due to the weather, then learning outcomes could be more desirable (Kratochwill et al., 2018). Through quality classroom management, described Sieberer-Nagler (2016), and a plan in place when the weather suddenly changed, the effect would

have been a higher quality learning environment (Kratochwill et al., 2018). This could improve student time on-task, resulting in higher learning levels reflected in increased state test performance scores (Kratochwill et al., 2018; U.S. Department of Education, 2015).

Conceptual Framework

The conceptual framework for this study was based on Sieberer-Nagler's *Effective Classroom-Management & Positive Teaching* (2016). Lew and Nelson (2016) and Sieberer-Nagler (2016) discovered teachers are often faced with unexpected events affecting classroom focus, including, weather changes, classroom interruptions, and unruly students. During these events, teachers rely on their ability to control student behavior using effective classroom management strategies (Gage & MacSuga-Gage 2017).

Sieberer-Nagler (2016) identified the following seven components of classroom management:

1. Effective Classroom Behavior Management: For students, learned behaviors began as early as the first day of school; therefore, it was vital for a teacher to have a behavior management system before student arrival. An established classroom behavior management system enabled consistency throughout the year.
2. The Teacher as a Model: A teacher could have demonstrated self-discipline and desired classroom behavior to students throughout the entire day. Teaching by example included being excited about subject matter and self-disciplined when distractors in the classroom occurred. Students witnessed the teacher's behavior and, in turn, acted with the same type of enthusiasm.

3. Classroom Expectations: Posted classroom expectations consistently followed by students were an essential part of classroom management.

4. Clear Rules: When the rules were clear and consistent, students were naturally more disciplined to following them.

5. Handling Behavior Issues: During a disturbance, the teacher should have been able to deal with that issue while minimizing disruption.

6. Handling Mistakes: Human error was natural. Therefore, the teacher should not have shamed or blamed the students for errors in assignments or judgement for minor behavior incidents.

7. The Teacher as a Motivator: Good teachers not only motivated students to learn but also taught them how to learn in a manner where the learning objective was relevant, meaningful, and memorable. (pp.164-166)

These components were the framework which guided this study.

Lew and Nelson (2016) found classes are usually well managed by most teachers once routines and rules are set and consistent. Effective classroom management can be achieved through clear teacher-student communication with respect to behavioral and academic expectations (Lew & Nelson, 2016; Sieberer-Nagler, 2016). Effective classroom management can also be achieved through the development of a classroom environment conducive to learning (Gage & MacSuga-Gage, 2017; Sieberer-Nagler, 2016). Gage and MacSuga-Gage (2017) suggested teachers should focus more on student engagement to maintain efficient classroom management and optimal learning instead of focusing on fewer classroom disruptions.

Purpose of the Study

The purpose of this study was to determine if weather affected student behavior in the classroom. Optimal learning requires an environment with effective classroom management in place, but unpredictable weather, affecting human behavior, may disrupt classroom management's effectiveness (Essa et al., 1990). Marcola (2016) stated, "The way you feel on any given day may actually be intricately tied to the weather" (para. 1). According to VanBuskirk and Simpson (2013), changes in weather may contribute to negative behavior in some children. Therefore, the purpose of this study was to determine the significance of the relationship between weather patterns and students' behavior.

Research Questions and Hypotheses

The following research questions and hypotheses guided the study:

1. What is the relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather?

$H1_{0:}$ There is no significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather.

$H1_{a}$: There is a significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather.

2. What is the difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather?

$H2_{0:}$ There is no significant difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather.

$H2_a$: There is a significant difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather.

3. What are teachers' perceptions regarding the effect of changes in the weather on students' classroom behavior?

Significance of the Study

Over the last five years, little research has been completed about how weather affected student behavior. However, Lagace-Seguin and d'Entremont (2005) suggested weather affected the behavior and learning abilities of preschool children. VanBuskirk and Simpson (2013) conducted research with children diagnosed with Autism, identifying a relationship between meteorological variables, such as storms, and the children's behavior. This research was significant because it may establish a relationship between weather patterns and student behavior in the classroom.

Relevant source documents and completed surveys by practicing teachers served as evidence to support this research. The result could prove beneficial to many educators teaching the primary grades of kindergarten through third-grade. Further, this research could be relevant to teachers who teach students diagnosed with Autism as well. According to VanBuskirk and Simpson (2013), students diagnosed with Autism are more aware of their environments and, therefore, may be more sensitive when weather changes occur. The outcome of this study may suggest the necessity of the development of appropriate steps that could lead to effective classroom management as changes in weather patterns occur.

Definition of Key Terms

Autism Spectrum Disorder

Autism Spectrum Disorder was defined as a delay in development through impaired communication, social interactions, and behavior in both children and adults (Fitzgerald, 2017; Fukuyama et al., 2017).

Delimitations, Limitations, and Assumptions

The scope of the study was bounded by the following delimitations: time frame, location of the study, sample, and criteria.

Time Frame

The data were collected during the fall semester of the 2021-2022 school year.

Location of the Study

This study was conducted at a school district in the Texas Education Agency Region 9 (Texas Education Agency, 2021). The selection of the school was based on geographic location with population to support three or more classes of each grade level, kindergarten through third-grade (Fraenkel et al., 2019; Texas Education Agency, 2021).

Sample

The sample for this research was one school district located in the Texas Education Agency Region 9 (Texas Education Agency, 2021).

Criteria

Qualifying participants were educators with more than one year of teaching experience. Participants also must have taught students in kindergarten through third-grade and been employed by the participating district.

The following limitations were identified in this study:

Sample Demographics

The sample was limited to the one school district in the Texas Education Agency Region 9.

Lack of prior research

Research of the effects of weather on student behavior was scarce within the last five years. Therefore, the foundation for understanding the effects of weather, on student behavior in the classroom, was built with much of the read literature dating back more than five years.

Instrument

The survey and interview questions were limitations because both instruments were created by the researcher based on information gathered from the literature review. Qualitative responses for the focus groups were dependent on participant agreement to complete the focus group interviews. Quantitative responses for the survey were dependent on participant agreement to return a completed survey.

The following assumptions were accepted:

1. The responses of the participants were offered honestly and willingly.
2. The sample was representative of the general population of educators who held teaching certificates from the Texas Department of Education.

Summary

According to studies conducted by Lew and Nelson (2016), student achievement and classroom management is the most difficult challenge to new teachers. Keeping students on task and engaged without distractions is key to a successful classroom management system (Gage & MacSuga-Gage, 2017; Sieberer-Nagler, 2016). Lagace-

Seguin and d'Entremont (2005) indicated weather could be a distraction both physically and mentally to students in the classroom, therefore inhibiting learning.

Chapter One included the background of the study and the statement of the problem. The conceptual framework was introduced. The purpose of the study and the research questions were provided, and the significance of the study was provided. Finally, key terms were identified, and the delimitations, limitations, and assumptions were described.

Chapter Two includes a literature review of Sieberer-Nagler's components of classroom management (2016), as well as opinions and scholarly research written on the topic of weather and student behavior by a variety of researchers. The review of literature includes topics related to common classroom behavior problems in kindergarten through third-grade students, common classroom behavior problems identified in kindergarten through third-grade students with autism, and the effect weather has on student/people's behavior, autism and the weather, classroom management strategies utilized during weather to help students cope.

Chapter Two: Review of Literature

Effective classroom management is the basis of student success (Gage & MacSuga-Gage, 2017). However, Alter and Haydon (2017) described classroom management, also identified as student behavior, as one of the most challenging aspects of teaching. According to VanBuskirk and Simpson (2013), changing weather may have an impact on student behavior. Understanding a potential connection between classroom management and unpredictable weather, may be beneficial to student achievement (Braswell, 2018; Garwood et al., 2017).

Chapter Two was developed to reflect the literature examined and analyzed to understand the possibility of a relationship between weather changes and student behavior. First, a conceptual framework was developed using Sieberer-Nagler's (2016) seven components of classroom management. Second, an understanding of common classroom behaviors that pose problems for teachers was explained through literature studies for students not diagnosed with Autism, as well as students diagnosed with Autism. Next, the effect weather could have on all human beings was synthesized, as well as comparing its effects to those diagnosed with Autism. Finally, classroom management strategies, developed and utilized during weather situations to allow students to cope with the change, was explored.

Conceptual Framework

Choosing the right conceptual framework was important because it served as the guide to exploring and examining the relationship between student behavior and the weather (Shikalepo, 2020). Sieberer-Nagler's (2016) seven components of classroom management for students to be successful was the framework which guided this study.

The seven components include, effective classroom behavior management, the teacher as a model, classroom expectations, clear rules, handling behavior issues, handling mistakes, and the teacher as a motivator (Sieberer-Nagler, 2016).

Researchers agree teachers faced challenges in the area of classroom management each day, due to unexpected events (Alter & Haydon, 2017; Gage & MacSuga-Gage, 2017; Lew & Nelson, 2016; & Sieberer-Nagler, 2016). When unexpected events occurred, such as weather changes, classroom interruptions, or unruly students, it is important for classroom management to be in place for learning to continue (Gage & MacSuga-Gage, 2017). Well managed classrooms have fewer times of disruption during unexpected events (Lew & Nelson, 2016).

Effective Classroom Behavior Management

When developing effective classroom behavior management, Lew and Nelson (2016) and Sieberer-Nagler (2016) found learned behaviors began on the first day of school. Developing a positive student and teacher relationship (Terada, 2019), identifying student motivators (Kratochwill et al., 2018; Sieberer-Nagler, 2016), and setting in place a management system promoting behaviors for success (Kratochwill et al., 2018) are three important pieces for quality behavior management. When a classroom management system is not in place or consistently used, students become more off-task resulting in less time learning and a lower retention of the information presented (Gage et al., 2018; Sieberer-Nagler, 2016). Gage et al. (2018) described the number of disruptions due to classroom behavior management failure, is a predictor of student failure. Lew and Nelson (2016) described classroom management as an indicator of student success; the better the classroom management, the more successful the students were.

According to a study by Terada (2019), teachers who include a positive relationship component to their classroom management style have an increased response to engagement. Kratochwill et al. (2018), found social emotional well-being in students also has a positive response in engagement of academic studies. Teachers who have positive relationships with their students socially have a higher rate of engagement and retention (Burden, 2020; Kratochwill et al., 2018; Terada, 2019). Terada (2019) explained positive relationships begin with a positive greeting at the door into the classroom.

Getting to know students includes identifying student motivators (Garwood et al., 2017; Kratochwill et al., 2018; Sieberer-Nagler, 2016). Part of the effective classroom management behavior system described by Sieberer-Nagler (2016), depends on observing students' behavior and understanding what motivates them to seek more information on a topic and what is a distraction. Incorporating those motivators and avoiding the distractors while developing and implementing a lesson or activity, produces a higher rate of material retention (Garwood et al., 2017; Kratochwill et al., 2018; Sieberer-Nagler, 2016).

Promoting behaviors that lead to success, such as listening and following directions, is imperative to the set-up of a successful effective classroom management system (Garwood et al., 2017; Sieberer-Nagler, 2016). By promoting the wanted behaviors, a study by Terada (2019), found negative behaviors diminish when the attention for those behaviors is less than the attention given to the wanted behaviors. According to Kratochwill et al. (2018), rewarding positive behaviors results in fewer unwanted behaviors, creating an environment where learning and retention of material is

higher than in a classroom where unwanted behaviors are highlighted with discipline. When successful behaviors are established within a classroom, disruptions are less likely to affect the learning outcome (Gage & MacSuga-Gage, 2017; Lew & Nelson, 2016).

The Teacher as a Model

Sieberer-Nagler (2016) describes the Teacher as a Model through teaching by example. Through excitement about the subject matter, reinforcing positive behavior and rewarding correct answers to questions asked with enthusiasm, teachers are able to build stronger relationships with students (Sieberer-Nagler, 2016). Further, teachers have a higher rate of success in creating a respectful learning environment within their classroom when stronger relationships are formed (Terada, 2019). Sieberer-Nagler (2016) found modeling on-task behavior results in students being less distracted during times of unforeseen circumstances.

The teacher being excited about the subject matter creates an atmosphere where students get excited about the presented material (Sieberer-Nagler, 2016). When students are excited about learning, their time on-task increases (Gage et al., (2018). According to Sieberer-Nagler (2016) and Gage et al. (2018), when students have more time on-task, they produce a higher quality of learning and retention of material.

Hamilton (2017) suggested teachers who model appropriate behavior in the classroom, have a better-managed classroom than teachers who do not model appropriate behavior. According to Hamilton (2017), when students observe appropriate behavior from their teachers, such as tidiness, timeliness, consistency, and self-demeanor, the students reflect the behavior of their teacher. Demonstrating wanted behaviors, teachers

are able to promote classroom rules, build relationships, and create a respectful and supportive learning environment (Burden, 2020).

Classroom Expectations

Teachers who post classroom expectations and are persistent to refer to the list have fewer disruptions to learning (Sieberer-Nagler, 2016). Gage and MacSuga-Gage (2017) found when classroom expectations are posted, repetitively taught, reviewed, monitored, and reinforced, teachers have fewer negative behavioral issues, and distractions are minimized. Kratochwill et al. (2018) explained clear classroom expectations for behavior are essential for student growth.

Kratochwill et al. (2018) explained teachers and students need clear expectations. Teachers who consistently reinforce classroom expectations through review, reteaching, and reinforcement have a higher rate of expectation retention, which assists in content retention (Gage & MacSuga-Gage, 2017; Kratochwill et al., 2018; Sieberer-Nagler, 2016). Assuming expectations are already instilled in students upon the first day in the classroom is a common mistake among teachers in their first few years of teaching (Alter & Haydon, 2017; Kratochwill et al., 2018).

Clear Rules

Just like having clear classroom expectations, students are more disciplined when they have clear and consistent rules to follow (Alter & Haydon, 2017; Sieberer-Nagler, 2016). Burden (2020) described rules as, “general codes of conduct that are intended to guide individual behavior in an attempt to promote positive interaction and avoid disruptive behavior” (p. 65). According to Alter and Haydon (2017), clear and simple rules are imperative to the success of classroom management. Not only are clear set rules

important for academic progress, but social behavior, as well (Alter & Haydon, 2017; Kratochwill et al., 2018; Sieberer-Nagler, 2016).

When setting classroom rules, Burden (2020) and Alter and Haydon (2017), explained the importance of including the students in the process by asking for class input during the creation of the rules. According to Burden (2020), these rules give guidelines for appropriate behaviors, which allow for a healthy learning environment. When students participate in creating the rules collaboratively with the teacher, students follow the rules more often than when they did not collaboratively create the rules (Alter & Haydon, 2017).

After rules are created, it is important to focus on implementation and consistency (Alter & Haydon, 2017; Sieberer-Nagler, 2016). Setting rules and being consistent gives the teacher a way to prevent unwanted behaviors before they occur (Alter & Haydon, 2017; Hamilton, 2017). According to Burden (2020 and Sieberer-Nagler (2016), when rules are inconsistent, classroom management is not successful.

Along with rule setting, it is essential for students to understand the consequences for making undesired choices, or breaking the rules (Burden, 2020). When a student breaks a rule, the consequence must go beyond a threat (Alter & Haydon, 2017). According to Alter and Haydon (2017), consequences need to be a logical fit for the rule and posted with the classroom rules in order for students to understand what will happen if they break a rule. Alter and Haydon (2017), Burden (2020), Kratochwill et al. (2018), and Terada (2019) encouraged the use of positive consequences for rules being followed and found a high rate of success with the approach.

Handling Behavior Issues

Sieberer-Nagler (2016) explained the goal in the classroom is to have as few disruptions as possible. However, when there is a disruption, it is important to minimize the issue, so the flow of instruction and learning is not interrupted (Sieberer-Nagler, 2016). According to Burden (2020), an effective way to identify and encourage wanted behaviors, is for the teacher to show gratitude for wanted behaviors through a reward system of praise or a small token of appreciation.

Burden (2020) described one way to handle misbehavior is to reinforce the appropriate behavior by teaching the misbehavior as undesired consistently, whenever it occurs. When the same undesired behavior occurs a second time, a pre-determined consequence should be delivered to the student for the infraction, therefore reinforcing the behavior as undesirable for the classroom environment (Alter & Haydon, 2017; Burden, 2020). Hamilton (2017) found benefit in relocating a disruptive student to another classroom for a previously determined period of time when undesired behaviors disrupt the class.

According to Gage and MacSuga-Gage (2017) and Sieberer-Nagler (2016), one way to prevent disruptions is for the teacher to walk around the classroom and monitor student work on a consistent basis. Further, communicating with the students the expectations of working toward an end product or knowledge base is helpful (Kratochwill et al., 2018; Sieberer-Nagler, 2016). When teachers provided explicit, direct instruction about expectations prior to each lesson or activity, student learning and retention of material is at a higher quality and retention level (Burden, 2020).

Handling Mistakes

According to Sieberer-Nagler (2016), all students make mistakes, and teachers should not shame students or place blame. Shaming or blaming a student after a mistake inhibits the learning process and hinders respect for the teacher (Gage & MacSuga-Gage, 2017; Hamilton, 2017; Sieberer-Nagler, 2016). Approaching disruptive students with compassion and self-control, creates an environment where the teacher is respected and understood (Hamilton, 2017). Hamilton (2017), Alter and Haydon (2017), and Kratochwill et al. (2018), found higher quality content retention when a high standard of respect is evident in a classroom between students and teachers, as well as students and students.

Hamilton (2017 and Sieberer-Nagler (2016) asserted that turning mistakes into teachable moments is an essential skill for teachers. Burden (2020) described building respect with a student is accomplished through understanding mistakes and individual student circumstances behind the mistakes. However, it is important to stick to the pre-determined consequences of the mistake for consistency (Burden, 2020; Hamilton, 2017).

The Teacher as a Motivator

Sieberer-Nagler (2016) stated, “Good teaching need not only motivate the students to learn, but the teacher should teach them how to learn, and to do so in a manner that is relevant, meaningful, and memorable” (p. 166). Motivating students to learn is a developed skill that new teachers may not have possessed when beginning their career (Koth, 2016; Sieberer-Nagler, 2016). Koth (2016) described an effective way to motivate students is to show enthusiasm for the content taught by using engaging lessons tailored for the students in the class. An environment where there is less control by the

teacher and more autonomy for the students creates more desire to learn about subject material (Koth, 2016).

Gage et al. (2018) suggested providing feedback about desired and undesired behaviors allows teachers to teach students classroom expectations, rules, and a framework for desired behaviors. According to Kratochwill et al. (2018), classroom teachers who provided feedback to students have fewer distractions during class time. Burden (2020) described communication of desired behaviors as imperative to the relationship, motivation, and development of students in the classroom. Communication is important before a behavior is identified as desirable or undesirable, as well as feedback after the behavior is identified, in order for the learning process to take place and teacher and student relationships to strengthen (Burden, 2020).

Common Classroom Behavior Problems in Kindergarten Through Third-Grade Students

Teachers at all levels of experience have encountered classroom behavior issues (Sanli, 2019). Teachers with more experience often handle those behavior issues more quickly and more efficiently than newer, less experienced, teachers (Gage et al., 2018). Teachers with more experience have a higher percentage of student success; student success can be predicted due to the efficiency of classroom management (Gage et al., 2018).

New teachers, or teachers with less experience, often have difficulty managing behaviors within their classroom reflecting poor classroom management (Gage & MacSuga-Gage, 2017; Lew & Nelson, 2016). Poor classroom management leads to dissatisfaction in the profession (Alter & Haydon, 2017; Hamilton, 2017; Lew & Nelson,

2016). Teachers who were dissatisfied with teaching left the profession only after a few years (Kratochwill, 2018; Lew & Nelson, 2016).

Common classroom behavior issues with students in kindergarten through third-grade include disruptions that draw the focus away from the teacher and the students in the classroom and off-task behavior (Gage et al., 2018). Alter and Haydon (2017) added verbal disruptions and noncompliance to direction as frequent behavior issues. Sanli (2019) added students complaining about one another, as well as going to the bathroom to avoid class activities, such as distractions and time off-task behaviors.

Lew and Nelson (2016) identified teachers with less experience are more apt to overreact to misbehaviors. The overreaction creates more tension in the classroom which creates more behavioral issues (Lew & Nelson, 2016). Hamilton (2017) determined that teachers who appropriately respond to disruptive students through self-control and compassion have better results in managing the undesired behavior. Further, appropriately responding to a behavioral issue builds stronger relationships with students (Hamilton, 2017; Sanli, 2019).

Recognized by Hamilton (2017), finding the reason why students are causing disruptions is the focus and key to stopping unwanted behavior. After understanding the reason, a student is being disruptive, better classroom management is established, due to the teacher being able to target the undesired behavior through understanding (Hamilton, 2017; Sanli, 2019). Hamilton (2017) explained high frustration with tasks, boredom with tasks, or preference of activities are common reasons for misbehavior in a classroom.

Classroom Readiness/Professional Development

Teachers indicate classroom management is the most difficult aspect of teaching (Alter & Haydon, 2017; Gage & MacSuga-Gage, 2017; Sieberer-Nagler, 2016). Lew and Nelson (2016) recognized classroom management's inclusion in collegiate teacher education courses, but cited teacher feedback of feeling unprepared to apply those skills in the classroom setting. Gage and MacSuga-Gage (2017), Garwood et al. (2017) and Alter and Haydon (2017), discovered teachers receive very little training in classroom management, yet are expected to have high-quality classroom management systems in place the first day they started school.

Garwood et al. (2017) explained the student teaching experience typically has a classroom management program in place prior to receiving a student teacher; therefore, not allowing a student teacher to practice setting one up before starting in their own classroom setting. When classroom management is taught at a university, it is typically book related, with very little opportunity for application of the classroom management described in the books (Alter & Haydon, 2017). Gage and MacSuga-Gage (2017) recognized limited training and demonstration of college level, book learned, classroom management structures.

Once in the classroom, new teachers are expected to have a classroom management structure in place and are evaluated on such a structure (Gage & MacSuga-Gage, 2017; Garwood et al., 2017). However, most are without experience and understanding when implementing a classroom management style (Garwood et al., 2017). Therefore, the need for professional development in the area of classroom management is evident (Garwood et al., 2017; Yurtseven, 2017).

Professional development is a continuous requirement for teachers to meet students' needs and review new and old teaching strategies, while also playing a part in lifelong learning (Garwood et al., 2017; Yurtseven, 2017). When a teacher is new to the profession, Yurtseven (2017) fathomed they continued to learn through hands-on experience, not available during college preparation. Consequently, continuing to attend professional development training is essential to teachers' job satisfaction (Gage & MacSuga-Gage, 2017; Yurtseven, 2017).

Without professional development, teacher growth and proficiency are inhibited (Yurtseven, 2017). Yurtseven (2017) further explained failure to take professional development into consideration, or to ignore it, causes teachers to experience shortfalls in updating their teaching and content knowledge. Consequently, when teachers do not participate in professional development, administrators reflect a lack of development in their evaluations (Lew & Nelson, 2016; Yurtseven, 2017). Poor evaluations result in a sense of dissatisfaction within the teaching profession (Marzano, 2003). Therefore, Marzano (2003) explained it is essential teachers receive support in both professional development and peer collaboration. Both of which, when implemented, lead to the desired level of learning in the classroom (Garwood et al., 2017; Yurtseven, 2017).

Job Dissatisfaction

Isolation is one of the leading causes of job dissatisfaction among many new teachers, second only to classroom management (Garwood et al., 2017; Ostovar-Nameghi & Sheikhahmadi, 2016). Isolation in this context refers to a teacher either being the only educator at a particular grade level or not having collaborative support from peers within a grade level or school setting (Garwood et al., 2017; Ostovar-Nameghi & Sheikhahmadi,

2016). Teacher isolation is difficult for any educator and weakens their teaching ability (Buchanan et al.,2013). This is especially the case when the teacher is new to the profession and in need of peer support (Garwood et al., 2017). Buchanan et al. (2013) ascertained four types of isolation and their effects on new teachers: physical, geographic, professional, and emotional isolation.

The first of the four types of isolation, described by Buchanan et al. (2013) is physical isolation. “Physical isolation was the feeling of being alone in the classroom, without the support of another teacher, or being in the company of colleagues who may have been withholding their encouragement, or who may have had none to give” (Buchanan et al., 2013, p.122). The importance of being able to share ideas and collaborate with another teacher is imperative for the success of the teacher in the classroom (Buchanan et al., 2013; Garwood et al., 2017; Marzano, 2003).

The second of the four types of isolation is Geographic isolation (Buchanan et al., 2013), referring to a rural or remote school. Garwood et al. (2017) explained geographic isolation was most present in rural schools and created significant challenges to teachers, due to limited support and resources. This type of isolation often requires increased travel time to and from work (Buchanan et al., 2013). This could also encompass few opportunities for collegial interaction outside the school (Garwood et al., 2017). Garwood et al. (2017) explained, parents of students residing in rural or remote locations often have differing expectations than those from suburban areas. Those expectations include, tardy forgiveness, incomplete homework assignments, and absences due to morning and evening chores at home, or responsibilities on family farms during peak harvest seasons (Garwood et al., 2017).

Professional isolation occurs in schools or districts lacking the population density to justify multiple teachers for the same grade (Buchanan et al., 2013). Therefore, Buchanan et al. (2013) described collaboration and brainstorming for new ideas as conducted in a vacuum. In this occurrence, the lack of collaboration prohibits teacher and student growth, therefore affecting teacher efficiency (Garwood et al., 2017; Marzano, 2003).

Buchanan et al. (2013) described the fourth type of isolation as emotional isolation. Buchanan et al. (2013) suggested, "Emotional isolation was the feeling of separateness which came with struggling on one's own, not succeeding, and not admitting to needing help avoiding asking for it" (p.123). Emotional isolation led to feelings of failure, found by Buchanan et al. (2013), resulting in poor professional outlook for success.

Further, poor classroom management was identified as the most significant issue when measuring job satisfaction in new teachers and is considered one of the leading causes of job dissatisfaction (Lew & Nelson, 2016). Continuous disruptions, noncompliance and off-task behaviors without the knowledge and experience to keep them under control is one of the most frequent complaints from new teachers (Alter & Haydon, 2017). Classroom management difficulties are one of the leading factors to job dissatisfaction and burnout of new teachers, causing many to leave the profession within the first five years (Alter & Haydon, 2017; Hamilton, 2017; Lew & Nelson, 2016).

Effective classroom management is necessary every day (Burden, 2020; Marzano, 2003). It is important to have procedures in place when an unexpected event occurs to prevent it from causing a disruption as part of the classroom management style (Burden,

2020; Lew & Nelson, 2016). According to Burden (2020), teachers need to always expect the unexpected and have contingency plans in place for such events. When it comes to weather, an unexpected storm may unexpectedly arouse a classroom mood (Barber, 2020). Having procedures in place can prevent distractions that would result in a loss of learning time (Burden, 2020; Lew & Nelson, 2016).

Common Classroom Behavior Problems Identified in Kindergarten Through Third-Grade Students with Autism

According to Fukuyama et al. (2017), students diagnosed with Autism have a hypersensitivity to their environment. Hypersensitivity to the body's neurological system, in students with Autism, was described by Fukuyama et al. (2017) and Williams et al. (2019) as a cause for negative behavioral and social issues. Students diagnosed with Autism often have difficulty with many behaviors, however, a few are communication, focusing and paying attention, making eye contact, and making noises (Rudy, 2019).

Hypersensitivity, in a student diagnosed with Autism, has been found to cause extreme stress on the student (Fukuyama et al., 2017; Williams et al., 2019). Fluorescent lighting, loud noises, schedule changes, and certain textures are only a few possible triggers found to cause hypersensitivity in students diagnosed with Autism (Rudy, 2019; Sarah Dooley Center Admin, 2020). Hypersensitivity can cause several behavioral problems in students diagnosed with Autism, including aggression, noise making, rocking and more, all of which can be distracting to a class full of students (Rudy, 2019; Sarah Dooley Center Admin, 2020).

The Effect Weather has on People's Behavior

In past studies, weather has been considered an indication of people's behavior (Bolton et al., 2020; Harley, 2018). Barber (2020) and Lucas and Lawless (2013) explained a person's thoughts, feelings and behaviors are affected by the weather. Adults and children are affected by changing weather both physically and mentally (Barber, 2020; Braswell, 2018; Harley, 2018; Lucas & Lawless, 2013).

According to Barber (2020) and Bolton et al. (2020), weather affects a person's mood. When the weather is hot people become annoyed at an earlier onset than when the weather is cold (Barber, 2020; Harley, 2018). When the weather is cold, people become sad and depressed (Barber, 2020; Harley, 2018; Lucas & Lawless, 2013).

Braswell (2018) found results indicating hot weather lowers students' ability to learn in places where air conditioning was not an option. Hot weather makes people feel like eating less; therefore, it effects their digestion system, which slows insulin production and ultimately affects memory (Barber, 2020). Harley (2018) described feelings on hot days as being difficult to concentrate, just as on cold winter days with the snow blowing.

A drop in barometric pressure often creates other health-related problems, such as migraine headaches, stiff joints, and confusion (Allarakha, 2021; Carlson, 2019). Described by Allarakha (2021) and Carlson (2019), as the barometer drops or a person goes to a higher elevation, the air pressure decreases, creating a swelling in bodily soft tissues, therefore some subjects have a sense of discomfort. The same situation occurs when a storm is coming into an area and the barometric pressure changes, therefore

affecting some humans in a negative manner (Allarakha, 2021; Bolton et al., 2017; Carlson, 2019; Turrisi et al., 2021).

Autism and the Weather

Students diagnosed with Autism often experience a heightened reaction to simple changes in their environment (Bolton et al., 2020; Fukuyama et al., 2017; Williams et al., 2019). Changes in the weather and environment have a negative effect on classroom behavior for some students diagnosed with Autism in lower elementary grades (VanBuskirk & Simpson, 2013). Thunderstorms, snowstorms, and other weather variances create anxiety more often in children diagnosed with Autism over children not diagnosed with Autism (Hopper, 2019).

According to Bolton et al. (2020), the weather potentially creates a sense of chaos within a person diagnosed with Autism, due to a heightened sensitivity to environmental factors. Sensory overload is common for children diagnosed with Autism (Hopper, 2019). Chaos within a student caused by a drop in barometric pressure, or the static electricity given off by an electrical or thunderstorm could cause a student diagnosed with Autism to exhibit undesired behaviors (Bolton et al., 2018; Bolton et al., 2020; Hopper, 2019).

In a situation where a well-structured classroom is functioning, Bolton et al. (2020) found, that during unpredicted weather situations such as a thunderstorm, a student diagnosed with Autism is more likely to exhibit undesired behaviors not typically seen on a day without a weather change. This undesired behavior during an unpredicted weather situation can be due to a chaotic sensory overload occurring with a student diagnosed with Autism (Bolton et al., 2018; Bolton et al., 2020; Fukuyama et al., 2017). The chaotic sensory overload occurring in a student diagnosed with Autism may create

more difficulty communicating with others not diagnosed with Autism (Bolton et al., 2018; Bolton et al., 2020; Fukuyama et al., 2017).

Classroom Management Strategies Utilized During Weather Events to Help Students Cope

Assisting students to cope with unpredictable situations is helpful for all students (Garwood et al., 2017; Sieberer-Nagler, 2016). Ensuring routines are in place, practiced, and consistent for every situation is imperative for a successful classroom management system with few distractions (Garwood et al., 2017; Sieberer-Nagler, 2016). According to an article in Academic Success (2020), students diagnosed with Autism have more difficulty adjusting to weather changes and unpredicted classroom distractions than students not diagnosed with Autism.

When a thunderstorm is developing, the barometric pressure is dropping, and a student diagnosed with Autism is feeling a case of sensory overload, several steps can be taken to maintain a well-managed classroom (Academic Success, 2020; Hopper, 2019). These steps include, communicating with students, avoiding or reducing further sensory overload, and distracting students from the change (Academic Success, 2020; Hopper, 2019). These strategies prove to be successful in limiting classroom disruptions (Academic Success, 2020; Hopper, 2019).

When a teacher communicates with students diagnosed with Autism during a weather change or a change in the environment, questions are often asked about how the student is feeling (Hopper, 2019). According to Academic Success (2020), students diagnosed with Autism have difficulty expressing their feelings due to a communication breakdown, therefore, an alternative communication system is beneficial. Avoiding

sensory overload during an unpredicted change in the weather or other change in the environment can be achieved by turning off or dimming the lights and reducing noises or other sensory stimuli in the classroom (Academic Success, 2020). By turning off the lights and reducing noises and other sensory stimuli in the classroom, a student diagnosed with Autism is often able to identify their needs and feelings without exhibiting undesired behaviors (Academic Success, 2020; Hopper, 2019).

Distracting students from unpredicted change in the environment or weather, has been found to be beneficial by Hopper (2019). Hopper (2019) identified playing thinking games, using headphones, and giving a student who is having difficulty with the unpredicted change something else of interest to do, is beneficial to distracting them from developing a chaotic inward state. Preparing ahead of time for an unpredicted situation is imperative to success and maintaining classroom management (Academic Success, 2020; Hopper, 2019).

It is crucial for the educator to stay calm and positive, model appropriate behavior, promote a welcoming and positive environment, assist in socialization, and much more in order for classroom management to maintain a productive state (Academic Success, 2020). Sensory overload is reduced when an environment is welcoming and trusted (Hopper, 2019). Providing all students with a well-managed classroom in order to offer an optimal learning environment is found to be most successful (Academic Success, 2020; Hopper, 2019).

COVID-19

In 2019, a pandemic, COVID-19, began in China and affected more than 1.5 billion students in approximately 188 countries over the following two years (Campbell

et al., 2021; Duraku & Hoxha, 2020; Hanno et al., 2022; Lizana & Vega-Fernandez, 2021). COVID-19 is a respiratory disease that spreads from person to person through the air in water droplets created through sneezing, coughing, or talking (Center for Disease Control and Prevention, 2021). In March of 2020, the Center for Disease Control and Prevention recommended schools and businesses close in an effort to reduce the spread of disease (Campbell, 2021). Further recommendations included, staying at home, wearing of masks, frequent hand washing, disinfecting of surfaces, and social distancing (Center for Disease Control and Prevention, 2021).

In-person teaching and learning quickly transitioned to online teaching and distance learning (Hanno et al., 2022; Hoofman & Secord, 2021; Lizana & Vega-Fernadez, 2021; Rabaglietti et al., 2021). During online teaching and distance learning, stress levels of students and teachers, as well as parents, increased (Duraku & Hoxha, 2020; Rabaglietti et al., 2021). Additionally, student negative behaviors in the classroom, increased in occurrences in the home setting which affected the mental health of parents, students, and teachers (Campbell, 2021; Duraku & Hoxha, 2020; Hanno et al., 2022; Hoofman & Secord, 2021).

According to Rabaglietti et al. (2021), teachers spent more time working to figure out how to teach remotely and creating remote lessons than they did before COVID-19, which affected their mental health and well-being. Further, the amount of time spent working, significantly increased due to learning a new form of teaching, keeping students engaged in online learning, and the adjustment of work hours due to home schedules (Lizana & Vega-Fernadez, 2021; Long, 2020; Saenz-Armstrong, 2021). SYKES (2021) asked 1500 teachers about their time spent working, finding on average, teachers worked

about 900 more hours or 37.5 extra days in a year's time, due to COVID-19 and distance learning. Teacher retention significantly dropped due to burnout and lack of compensation from districts throughout the United States (Long, 2020; Saenz-Armstrong, 2021).

As teachers returned to the classroom, self-efficacy had diminished (WeiBenfels et al., 2021). While teachers with a high sense of self-efficacy showed high levels of enthusiasm and excitement for teaching, teachers with a low sense of self-efficacy showed low enthusiasm and low excitement in the classroom (Sieberer-Nagler, 2016; WeiBenfels et al., 2021). Students' academic success was partly influenced by relationships and the modeling of excitement for learning by their teacher (Hamilton, 2017; Sieberer-Nagler, 2016). Without the enthusiasm for learning, demonstrated by the teacher, students had a more difficult time retaining information presented in the classroom (Hamilton, 2017).

Summary

Using the Conceptual Framework described by Sieberer-Nagler's (2016), seven components of classroom management for students to be successful, an identification of common behaviors in kindergarten through third grade students with and without a diagnosis of Autism was achieved through literature review. Next, a comparison of the effects of changing weather on human beings with and without a diagnosis of Autism was analyzed. Finally, classroom management strategies utilized by teachers during weather events to help students cope with the change were discovered through literature review and noted.

Chapter Three introduces the methodology of the research. The purpose, research questions, and hypothesis are described. The design of the research and population sample, the instrumentation and data collection process and analyses, and a description of ethical considerations are detailed.

Chapter Three: Methodology

Chapter Three will discuss the methodology of research. A review of the problem and purpose along with the research questions and hypotheses are provided. The research design using a mixed methods approach is described. The population and sample as well as the instrumentation, data collection process, and data analyses are also detailed. Finally, a description of ethical considerations is provided.

Problem and Purpose Overview

Student behavior and classroom management have been identified as a struggle for teachers (Lew & Nelson, 2016; Sieberer-Nagler, 2016). Effective classroom management is a foundation for optimal student learning (Gage & MacSuga-Gage, 2017; Kratochwill et al., 2018; Lew & Nelson, 2016; Terada, 2019). According to Gage and MacSuga-Gage (2017), teachers who used effective classroom management experience a significant reduction in disruptive behavior and an increase in student achievement.

Unpredictable weather, affecting student behavior may be a factor in the efficiency of classroom management (Essa et al., 1990). According to Bolton et al. (2018), students diagnosed with Autism have increased sensitivity and aggression during periods of time when weather is changing. According to VanBuskirk and Simpson (2013), changes in weather may contribute to negative behavior in some children.

In recent years, research on how weather affects student behavior has been minimal. Understanding the relationship between weather changes and student behavior could be beneficial to classroom management development and student achievement (Braswell, 2018; Garwood et al., 2017). Therefore, the purpose of this study was to

determine the significance of the relationship between weather patterns and students' behavior in the classroom.

Research Questions and Hypotheses

The following research questions and hypotheses guided the study:

1. What is the relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather?

$H1_{0:}$ There is no significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather.

$H1_a$: There is a significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather.

2. What is the difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather?

$H2_{0:}$ There is no significant difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather.

$H2_a$: There is a significant difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather.

3. What are teachers' perceptions regarding the effect of changes in the weather on students' classroom behavior?

Research Design

This study was completed using a mixed-methods approach. Bergin (2018) stated, "mixed methods research allows a researcher to benefit from the advantages that both quantitative and qualitative methods offer" (p. 21). According to Fraenkel et al. (2019), a mixed methods research approach could provide a more rounded understanding of the study. Burkholder et al. (2020) suggested a mixed methods design "is rigorous in terms of justifying and integrating philosophies and theories representing both quantitative and qualitative approaches" (p. 7).

Bergin (2018) pointed out a mixed methods approach was not always appropriate as some data could only be analyzed using either a quantitative or a qualitative approach. However, this study was both quantitative and qualitative and therefore appropriate, due to complex opinions of the subjects (Fraenkel et al., 2019). Both methods utilized together was necessary for clarity (Fraenkel et al., 2019).

The quantitative data were collected via survey while the qualitative data were collected through focus group discussions (Creswell & Creswell, 2018; Fraenkel et al., 2019). Surveys were sent via email, using each school principal as the deliverer, ensuring anonymity (Creswell & Creswell, 2018; Fraenkel et al., 2019). Upon submission of surveys, a Spearman's Rho Test for Research Question One and a Mann-Whitney *U* test for Research Question Two was used for analysis (Bergin, 2018; Coolidge, 2020).

The qualitative data were collected via focus group discussion (Creswell & Creswell, 2018; Fraenkel et al., 2019). Focus group discussion participants were chosen by school principals, ensuring unbiased selection (Creswell & Creswell, 2018; Fraenkel et al., 2019). The focus group was video-recorded and then transcribed.

Qualitative data were analyzed using open and axial coding (Bergin, 2018, Johnson & Christensen, 2020). Open coding involves the identification of any data that might be useful (Bergin, 2018; Johnson & Christensen, 2020). Axial coding was a continuation of the process and involved comparing emergent themes with the collected data set, identifying connections, and making claims regarding teachers' perceptions concerning research-based instructional strategies (Bergin, 2018; Johnson & Christensen, 2020).

Population and Sample

The targeted population for this study was selected due to the geographic location of a district located in the Texas Education Agency Region 9 (Fraenkel et al., 2019; Texas Education Agency, 2021). The chosen district was large enough to support three or more classes of each grade level. According to Fraenkel et al. (2019), time for research was saved, yet still effective, using convenience sampling, by narrowing participants using a sample from the accessible population within the target population. Johnson and Christensen (2020) defined a convenience sample as a group of participants who are "easily recruited and are willing to participate in the research study" (p. 253). The school district was chosen by location within the Texas Education Agency Region 9, as defined by the Texas Education Agency (2021), as the convenience sample for this research due to accessibility and willingness to participate in the study.

For the purpose of this study, classroom teachers were identified as educators currently teaching students in kindergarten through third-grade including regular education teachers, special education teachers, Title I teachers, art, music, and physical education teachers. Qualifying participants were educators with more than one year of

teaching experience. Participants also taught kindergarten through third-grade students and were employed by the chosen district within the Texas Education Agency Region 9 (Texas Education Agency, 2021).

This study's quantitative sample included a census sample of all kindergarten through third grade classroom teachers in the participating school district that was invited to participate in an online survey. This study's qualitative sample included a purposive sample of each participating building's classroom teachers. Burkholder et al. (2020) identified a purposive sample as "a sample based on a particular purpose that meets the needs of the study" (p. 63). Survey participation was voluntary. The research information sheet was attached to the survey, and if participants did not agree, they did not take the survey (Creswell & Creswell, 2018).

The study's qualitative portion included one focus group discussion including participants from a district located in the Texas Education Agency Region 9 area, as defined by the Texas Education Agency (2021). According to Bergin (2018), four to six participants is a sufficient number to conduct a valid focus group discussion. Furthermore, Johnson and Christensen (2020) suggested six to 12 participants who are purposively selected allowing the researcher to gather more opinions on the topic. The participating building principals were initially asked to purposively select two focus group participants from their building to participate in the focus group discussion. However, if participants chosen by the principal were unable or unwilling to participate, an open invitation was sent by the principal to all eligible staff to participate. The criteria for the selection were classroom teachers with one or more years of classroom teaching experience, with at least one teacher having or having had a student diagnosed with

Autism in their classroom. Participants were actively teaching students in kindergarten through third-grade.

Multiple educators working together were able to share similar ideas and experiences, therefore, validating their opinions (Asiamah et al., 2017). Educators with shared experiences and characteristics were best qualified to report their opinions on this study (Etikan et al., 2016). To ensure participation in the focus group was voluntary, the informed consent form for focus group participants was reviewed prior to the focus group discussion, and participants were asked if they consented to participate before the discussion group began (Creswell & Creswell, 2018).

Sample Adjustment Made During the Study

Between the timeframe of March 2019 and June 2020, the COVID-19 pandemic had greatly affected schools across the United States and the world (Alvarez-Alonso et al., 2022). Originally, this study focused on three school districts in another state. Due to a lack of interest from the original three school districts asked to participate, this study was altered to a case study focused in one district and three elementary schools. The research design remained the same while the population and sample was modified.

One alternate school district was chosen, within the Texas Education Agency Region 9, as the convenience sample (Texas Education Agency, 2021). Three elementary schools in the district were eligible to participate with educators teaching kindergarten through third-grade students. All three agreed to participate.

The study's quantitative sample included 31 voluntary and anonymous survey submissions. These submissions were collected using Lindenwood University's *Qualtrics* data collection online survey tool, over a two-week period. The study's qualitative

sample included three out of four voluntary participants who indicated interest in participating with a focus group discussion during the survey. The focus group was held after the regular school day and lasted for approximately 30 minutes.

Instrumentation

The survey questions, statements, and focus group discussion questions were researcher-created using the conceptual framework described in Chapter Two, the review of literature, and the research questions. The survey was developed to answer research questions one and two and included three sections. Section one contained both questions with multiple choice answers to gather demographic information and Likert-type scale statements. Section one was developed for demographics to ensure qualifications and validity.

Section one of the survey included questions one through five which were created to gather data regarding teacher demographics in order to define and ensure validity with the target population (Asiamah et al., 2017). Answers for this portion of the survey were multiple choice with a final answer option being "other," in case the participant's choice was not offered. The rest of the survey statements were used to gather data about the research questions using the Likert-type statements with five choices: strongly agree, agree, neutral, disagree, strongly disagree (Fraenkel et al., 2019).

Sections two and three were survey statements, using a Likert-type scale, encompassing the research questions. Section two of the survey was created to gather information about the general population of students and the weather. Nine Likert-type statements were created to gather data regarding general student behavior during both pleasant weather and when the weather was considered bad or changing (Fraenkel et al.,

2019). Research suggested behavior of students in the classroom is impacted by weather changes (Essa et al., 1990; Lagace-Seguin & d'Entremont, 2005; VanBuskirk & Simpson, 2013).

Section three of the survey was created to gather information about students diagnosed with Autism and the weather. Six Likert-type statements were created to gather data regarding students diagnosed with Autism and their behavior when the weather was considered bad or changing compared to students not diagnosed with Autism. VanBuskirk and Simpson (2013) found students diagnosed with Autism have a heightened sensitivity to their environmental surroundings. Studies by Bolton et al. (2018) and Bolton et al. (2020) suggested the weather creates chaos within the mind of a student diagnosed with Autism, therefore, creating erratic behaviors when weather changes are occurring.

Finally, the focus group questions were open-ended and split into two sections. Section one of the focus group consisted of five open-ended questions to identify demographic boundaries (Asiamah et al., 2017). These boundaries ensured the population sample for the focus group was appropriate and valid for the study (Fraenkel et al., 2019). It also introduced the content that would be discussed in the next section of questions for the focus group (Fraenkel et al., 2019).

Section two of the focus group consisted of eight open-ended questions to guide discussion for research questions one and two (Fraenkel et al., 2019). Questions in section two of the focus group were created around the framework set by research from Sieberer-Nagler (2016), "Effective Classroom-Management and Positive Teaching." The focus group discussion questions were developed to answer research question three.

According to Gage and MacSuga-Gage (2017) and Kratochwill et al. (2018), most teachers consider effective classroom management to be the most challenging part of their job. The focus group discussion was guided by open-ended questions related to teachers' experiences with classroom management (Fraenkel et al., 2019), then followed up with questions about their experiences regarding classroom management when the weather changed.

Reliability and Validity

According to Creswell and Creswell (2018), reliability "refers to the consistency or repeatability of an instrument" (p. 154). Boudah (2020) suggested field testing the instrument with a group similar to the sample of a proposed study to gain feedback on the instrument and to determine if the instrument was user-friendly and understandable. The survey was field tested by a group of teachers not participating in the study and concerns were addressed.

Mertens (2020) stated, "The conventional definition of the validity of an instrument was the extent to which it measures what it was intended to measure" (p. 422). The validation rubric for the focus group was created to measure face, construct, and content validity. A small group of teachers not participating in the study were asked to review the focus group discussion questions using the validation rubric for expert panel to ensure the reliability and validity of the questions prior to the start of the study (Fraenkel et al., 2019; Mertens, 2020). After the first validation rubric was submitted, the same rubric and discussion questions were analyzed again by the same small group of teachers not participating in the study, a process referred to by Fraenkel et al. (2019) as the "Test-Retest Method" (p.156). Answers came back within the margin of variability

therefore the questions were considered to be valid (Fraenkel et al., 2019; Mertens, 2020). Following the focus group discussion, the responses were transcribed. The transcription from the focus group discussion was shared with individuals from the focus group to ensure accuracy of statements. This process was called member checking and ensures validity (Creswell & Creswell, 2018; Fraenkel et al., 2019).

Data Collection

Once permission was received from the participating district (see Appendix A), and the Lindenwood Institutional Review Board granted permission to conduct the study, an email (see appendix B) was sent to building principals from the selected districts. The survey was open for two weeks for teacher response and submission.

The email explained the study and requested the building principal forward the attached letter of survey participation (see Appendix C), a copy of the research information sheet (see Appendix D), and the survey (see Appendix E) link to all classroom teachers currently teaching students in kindergarten through third grade.

During the first week, one of the three elementary schools agreed to a presentation during their faculty meeting about the study. During the presentation, teachers received a private invitation to participate in the survey. At that time, a survey link was presented. Teachers were given an opportunity to complete the survey during the faculty meeting by their leadership. The other two buildings did not provide a time for an individual presentation, so the information was provided to the building principal and forwarded to classroom teachers on staff.

Each building principal was also asked to purposively select two focus group participants, one of which had or has had a student diagnosed with Autism in their

classroom. If chosen participants were unable or unwilling to participate, an open invitation was sent out to the school staff of educators. Participants were required to currently be teaching students in kindergarten through third grade. The principals were requested to provide each selected teacher with a copy of the focus group participation letter (see Appendix F) through email, a copy of the informed consent (see Appendix G), and a copy of the focus group discussion questions (see Appendix H). These forms were also provided prior to the focus group meeting. Four participants responded to the request for participation. Three of the four participants were present for the focus group discussion.

The focus group was conducted via electronic discussion during a time convenient to all participants. The focus group discussion was audio- and video- recorded and then transcribed. In conclusion of the focus group discussion, the transcript was shared with individuals from the focus group to allow for revisions to ensure accuracy of statements made. This process is called member checking and ensures validity (Creswell & Creswell, 2018; Fraenkel et al., 2019; Mertens, 2020).

Data Analysis

Upon completion of the survey and focus group, both quantitative and qualitative data were interpreted and utilized to answer the research questions (Creswell & Creswell, 2018). Survey data, for research question one, were analyzed using a Spearman's Rho *t* Test. According to Stangroom (2022), "Spearman's Rho was a non-parametric test used to measure the strength of association between two variables" (para. 1). The Spearman's Rho was used to analyze if a significant relationship existed between the two variables in research question one. The Mann-Whitney *U* test was used to analyze whether a

significant difference existed between the two variables in research question two. Coolidge (2020) stated, “The Mann-Whitney *U* was the nonparametric equivalent of a test for independent groups” (p. 427).

Open and axial coding was used to analyze the qualitative data. Open coding involved the identification of any data that may have been useful and was the beginning of the coding process (Bergin, 2018; Johnson & Christensen, 2020). Axial coding was a continuation of the process and involved comparing emergent themes with the collected data set, identifying connections, and making claims regarding teachers' perceptions regarding research-based instructional strategies (Bergin, 2018; Johnson & Christensen, 2020).

Ethical Considerations

Potential risks in this research were minimal. According to the Lindenwood Office of Institutional Review Board (2018), risks should be identified and minimized prior to research. Understanding the possibility of participants being identifiable, the research for this dissertation was completely anonymous, therefore eliminating unnecessary identifying factors and only asking questions regarding number of years a teacher has taught, using a broad range (Lindenwood Office of Institutional Review Board, 2018).

Each participant was provided an informed consent form, which informed participants of the purpose, possible risks, and the opportunity to opt-out at any time of the study (Fraenkel et al., 2019). The survey portion of this study had a research information sheet attached to the invitation email, including the link to the survey. To

access the survey, participants had to select the survey link, which doubled as an agreement to use the information provided in the published dissertation.

To ensure the privacy of all subjects participating in the focus group and the survey, alphanumeric codes were used in place of the school district and participants' names (Creswell & Creswell, 2018; Fraenkel et al., 2019, Lindenwood Office of Institutional Review Board, 2018). The focus group was conducted virtually with a secure link. The form was reviewed before the focus group discussion, and participants verbally agreed or disagreed to participate in the focus group.

Summary

With classroom management being the basis for student success (Gage & MacSuga-Gage, 2017), and changing weather possibly having an impact on student behavior (VanBuskirk & Simpson, 2013), posed research questions and hypotheses were developed to guide this research and understand the concept. Using a mixed methods approach, a convenience sample described by Fraenkel et al. (2019) was utilized. Survey questions were developed, then validity-checked with a sample group of teachers for reliability (Boudah, 2020).

Data were collected through survey and focus group, then analyzed using Spearman's Rho, the Mann-Whitney *U* (Bergin, 2018; Coolidge, 2020), as well as open and axial coding (Bergin, 2018; Johnson & Christensen, 2020). The participants were volunteers, and the names of participants were not collected. Focus group participants were assigned alphanumeric codes to ensure anonymity for the study.

Chapter Four includes a presentation of the data. The results of the survey are presented using tables and figures. The results of the focus group discussion are detailed using portions of the transcript significant to answering research question three.

Chapter Four: Results and Findings

The purpose of this study was to examine the effects, if any, the weather has on student behavior in grades kindergarten through third. It further examined if students diagnosed with Autism were affected differently than students not diagnosed with Autism. Subsequently, it examined how prepared teachers felt for appropriate and effective classroom management. Presented in Chapter Four are the quantitative and qualitative data gathered during this study.

Mixed Methods

This study was completed using a mixed methods approach. Using a mixed methods approach provided multiple avenues of data collection and a more rounded understanding (Bergin, 2018; Fraenkel et al., 2019). The quantitative portion of the study was completed via survey (Creswell & Creswell, 2018) and collected through *Qualtrics*, an online survey tool (Qualtrics, 2022). The qualitative data were collected from a focus group discussion.

Quantitative Data Collection

The quantitative data is presented in frequencies and percentages using descriptions, graphs, and charts (Creswell & Creswell, 2018). The sample included 31, but only 28 volunteer teachers currently teaching students in kindergarten through third-grade completed the survey. Participating teachers came from three different elementary campuses within a school district located in the Northeastern Region of Texas. Survey data were collected through the Lindenwood University's online *Qualtrics* tool (Qualtrics, 2022) over a two-week period of time.

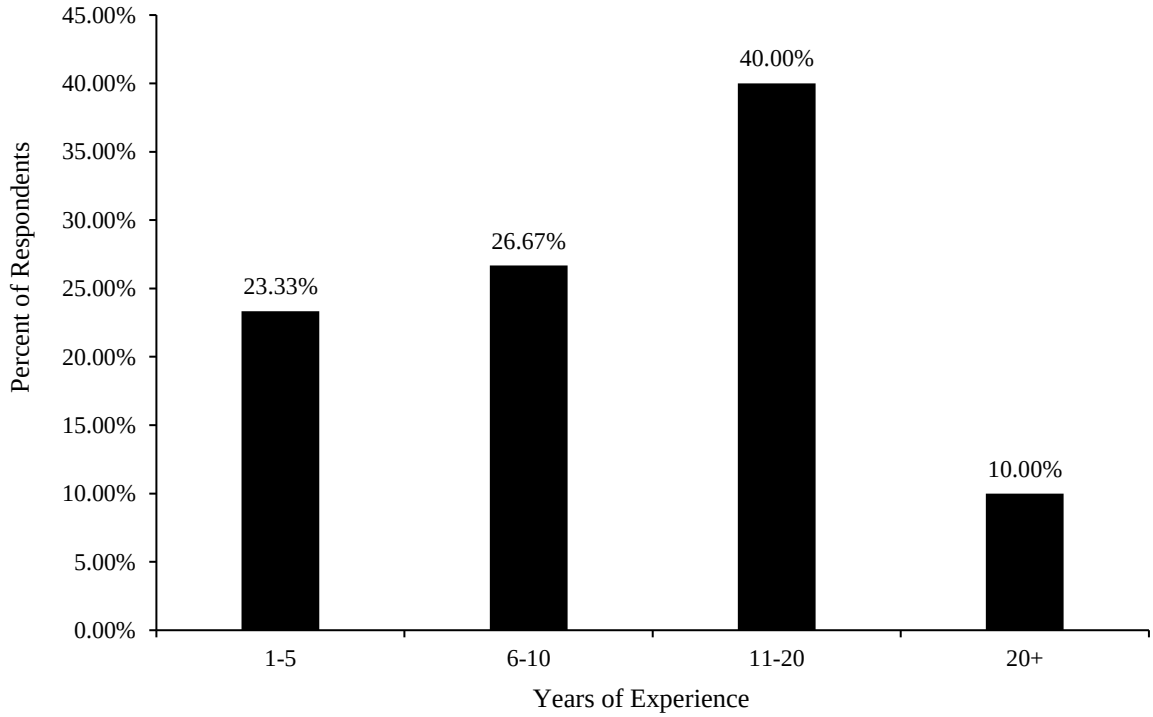
Demographic Data

Gaining demographic information ensures participants are qualified to give an insightful opinion in order for data to be validated (Asiamah et al., 2017). Survey participants were asked demographic questions with multiple choice answers as well as an open-ended, other, option. This allowed the survey to eliminate participants who were not qualified as defined in the population and sample section of this dissertation.

Survey Demographic Question 1. As shown in Figure 1, participants had between 1 and 20+ years of experience, 23.33% of participants had 1 to 5 years of experience, 26.67% of participants had 6 to 10 years of experience, 40.00% of participants had 11 to 20 years of experience, and 10.00% of participants had 20+ years of experience.

Figure 1

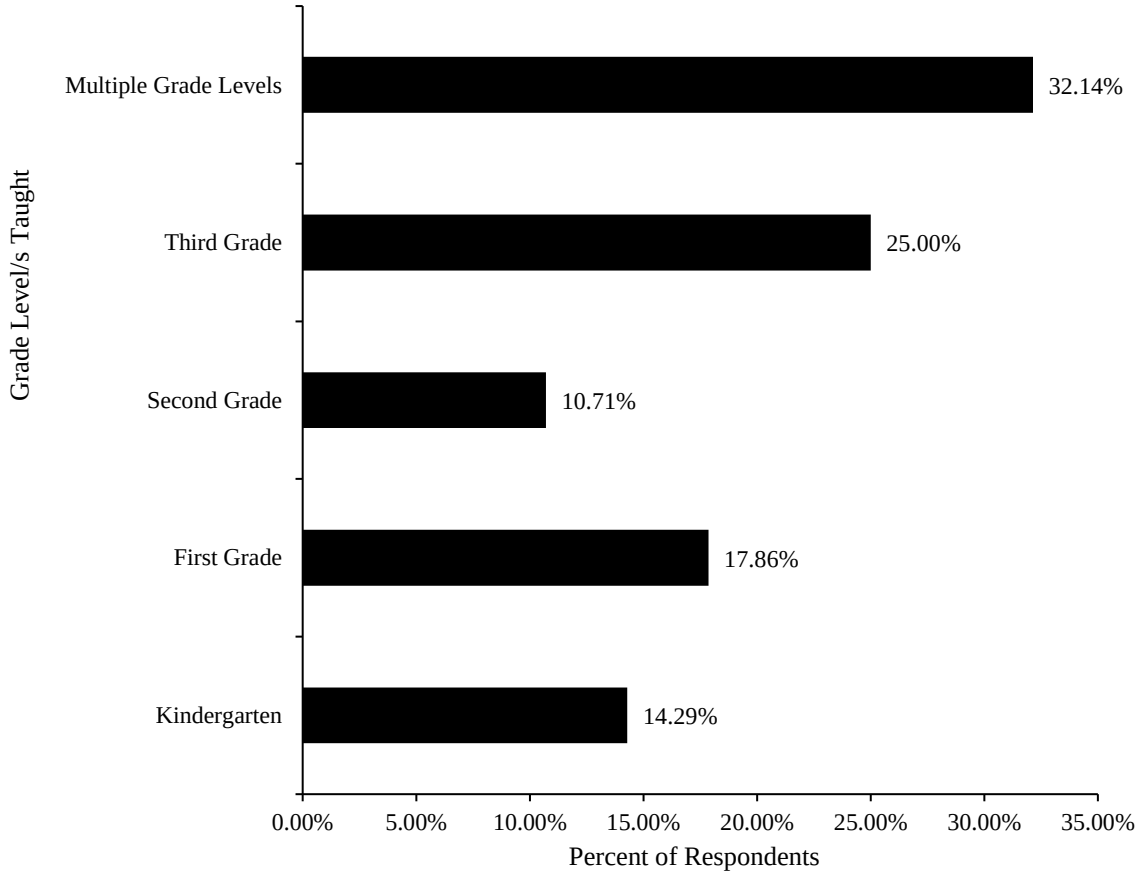
Years of Experience for Survey Participants



Survey Demographic Question 2. Survey participants taught a variety of grade levels. All participants taught students in one or multiple grade levels ranging from kindergarten to third-grade. As shown in Figure 2, 14.29% of participants taught kindergarten, 17.86% of participants taught first grade, and 10.71% of participants taught second grade. Third-grade teachers made up 25% of the participants and 32.14% of participants taught multiple grade levels.

Figure 2

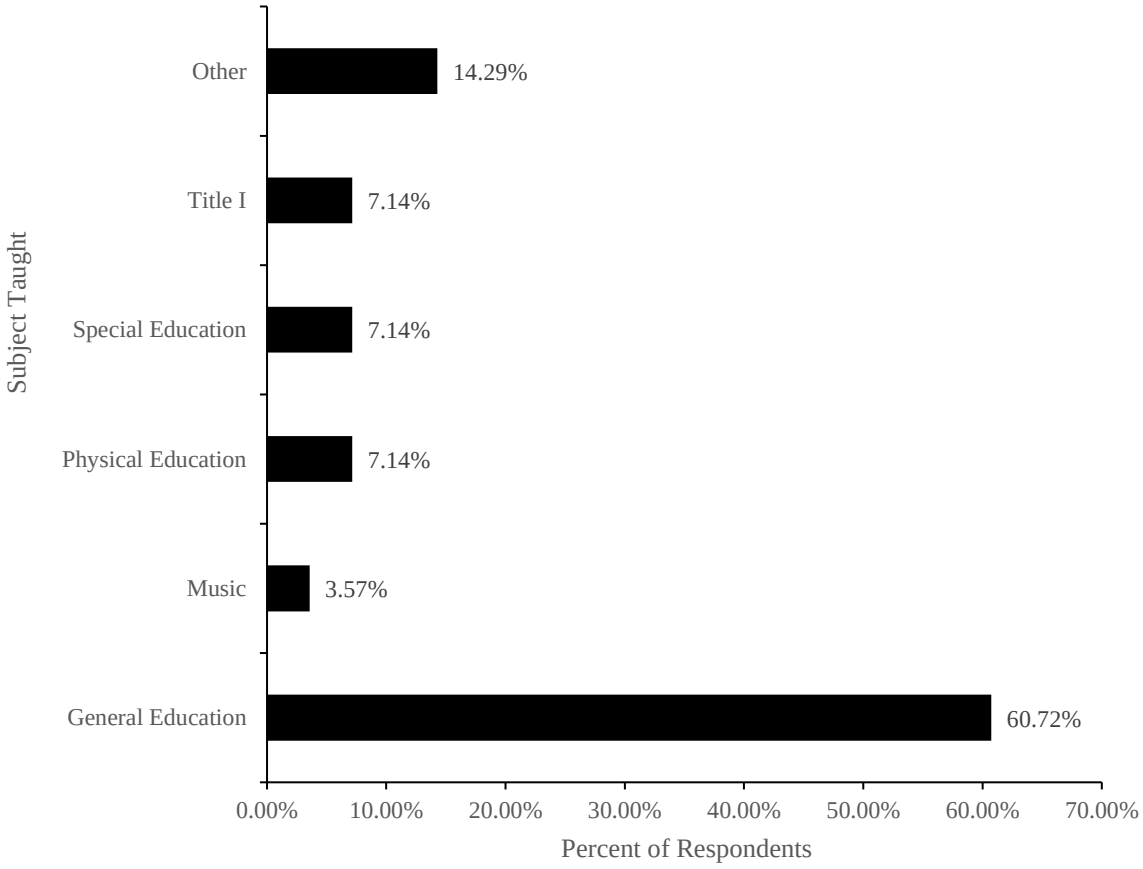
Grade Levels Taught by Participants



Survey Demographic Question 3. Participants in the survey taught a variety of subjects. As shown in Figure 3, 60.72% of participants taught in the general education classroom, 3.75% of participants taught music, 7.14% of participants taught physical education, 7.14% of participants taught special education, 7.14% of participants taught Title I, and 14.29% of participants responded they taught other subjects.

Figure 3

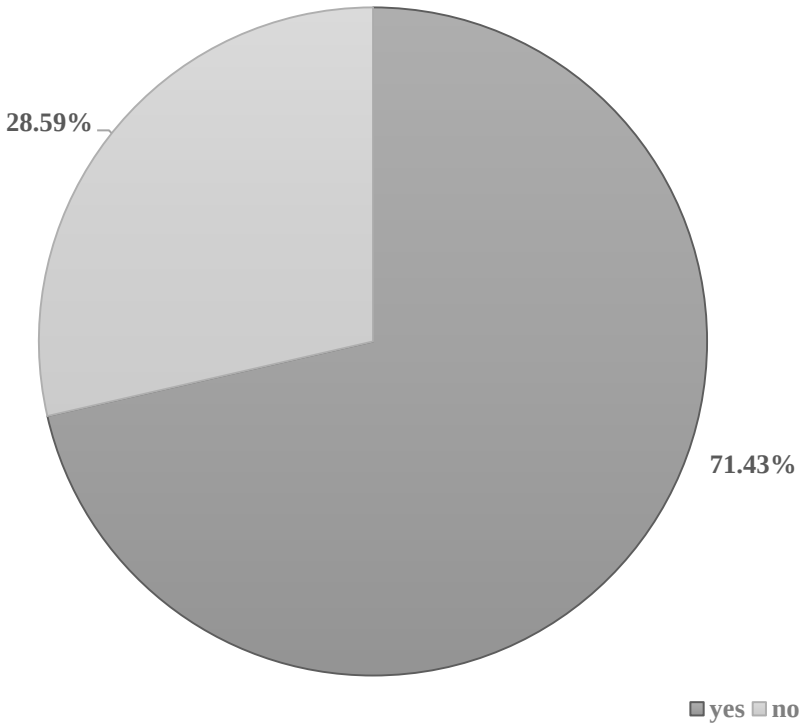
Subject Areas Taught by Survey Participants



Survey Demographic Question 4. Participants were asked if they have or have had students in their classroom diagnosed with Autism. As shown in Figure 4, 71.43% of participants currently have at least one student in their class diagnosed with Autism and, 28.59% of participants currently do not have at least one student in their class diagnosed with Autism.

Figure 4

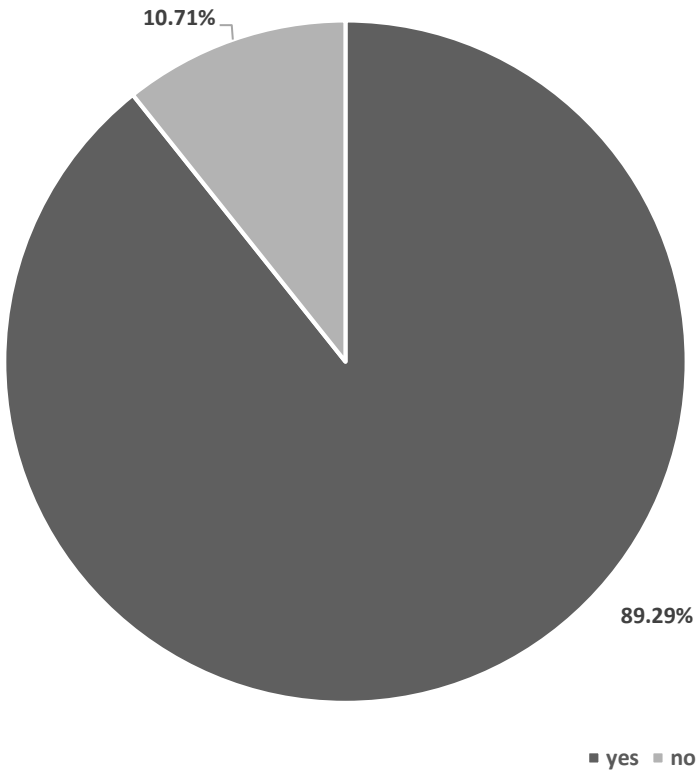
Percent of Participants Who Currently Teach Students Diagnosed with Autism



Survey Demographic Question 5. As shown in Figure 5, 89.29% of participants have taught at least one student in past years diagnosed with Autism and 10.71% of participants have never taught a student diagnosed with Autism.

Figure 5

Percent of Participants That Have Had At Least One Student Diagnosed with Autism in Past Years



Survey Data Analysis

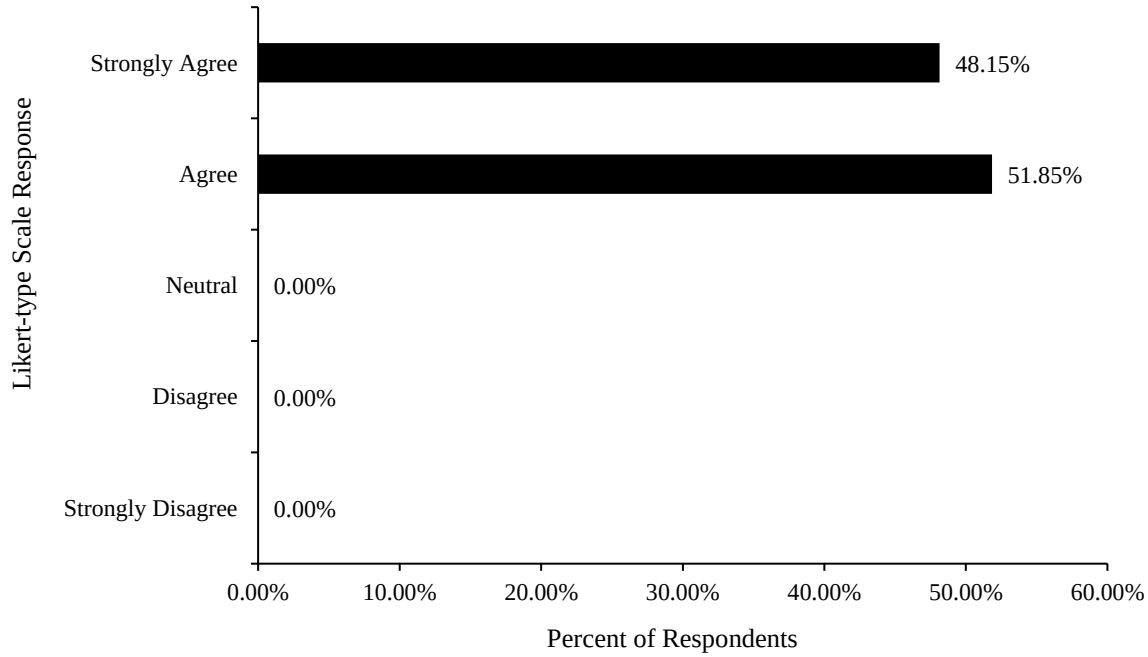
Research statements for part one of the survey asked teachers to rate their thoughts on a variety of statements in regard to the teachers' classroom management such as, preparedness, classroom behaviors with and without significant weather changes. Using a Likert-type scale, participants rated the following statements between one and five: 1 *strongly disagree*, 2 *disagree*, 3 *neutral*, 4 *agree*, and 5 *strongly agree*.

Survey Statement 1.1

Statement 1.1 asked teachers to rate how well they felt their classrooms were managed as shown in Figure 6. Survey results show 51.85% of teachers agreed their classrooms were well managed. Fewer teachers, 48.15%, strongly agreed their classrooms were well managed.

Figure 6

My Classroom is Well-Managed

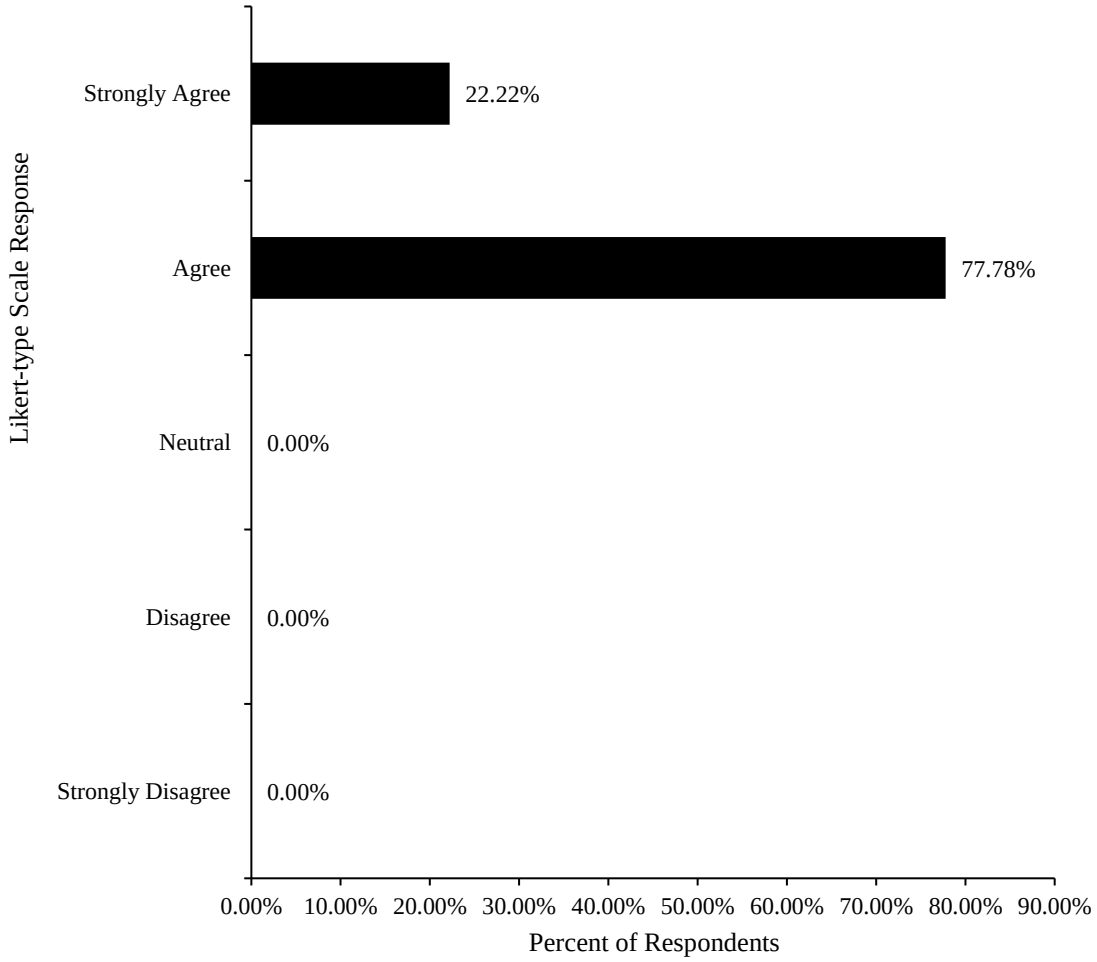


Survey Statement 1.2

As shown in Figure 7, participants were asked to respond to how well-behaved they felt their students were on a typical day at school. Responses showed 77.78% of teachers agreed their students are well-behaved on a typical day at school. While 22.22% of teachers strongly agreed their students are well-behaved on a typical day at school.

Figure 7

On a Typical Day, My Students Are Well-Behaved

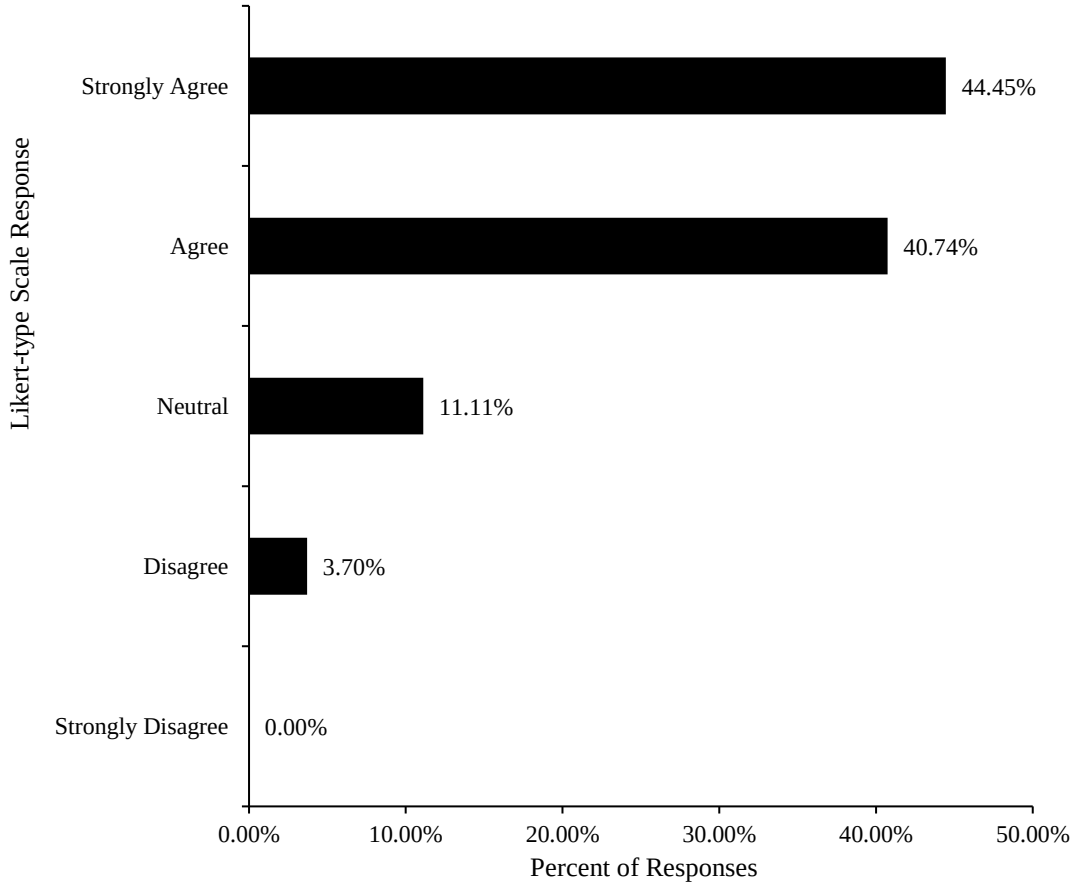


Survey Statement 1.3

Participants were asked to respond to the statement, “I attended college courses or professional development that taught about classroom management.” As shown in Figure 8, 3.70% responded they disagreed with the statement, 11.11% responded neutral, 40.74% responded agree, and 44.45% responded strongly agree.

Figure 8

I Attended College Courses or Professional Development that Taught Me About Classroom Management

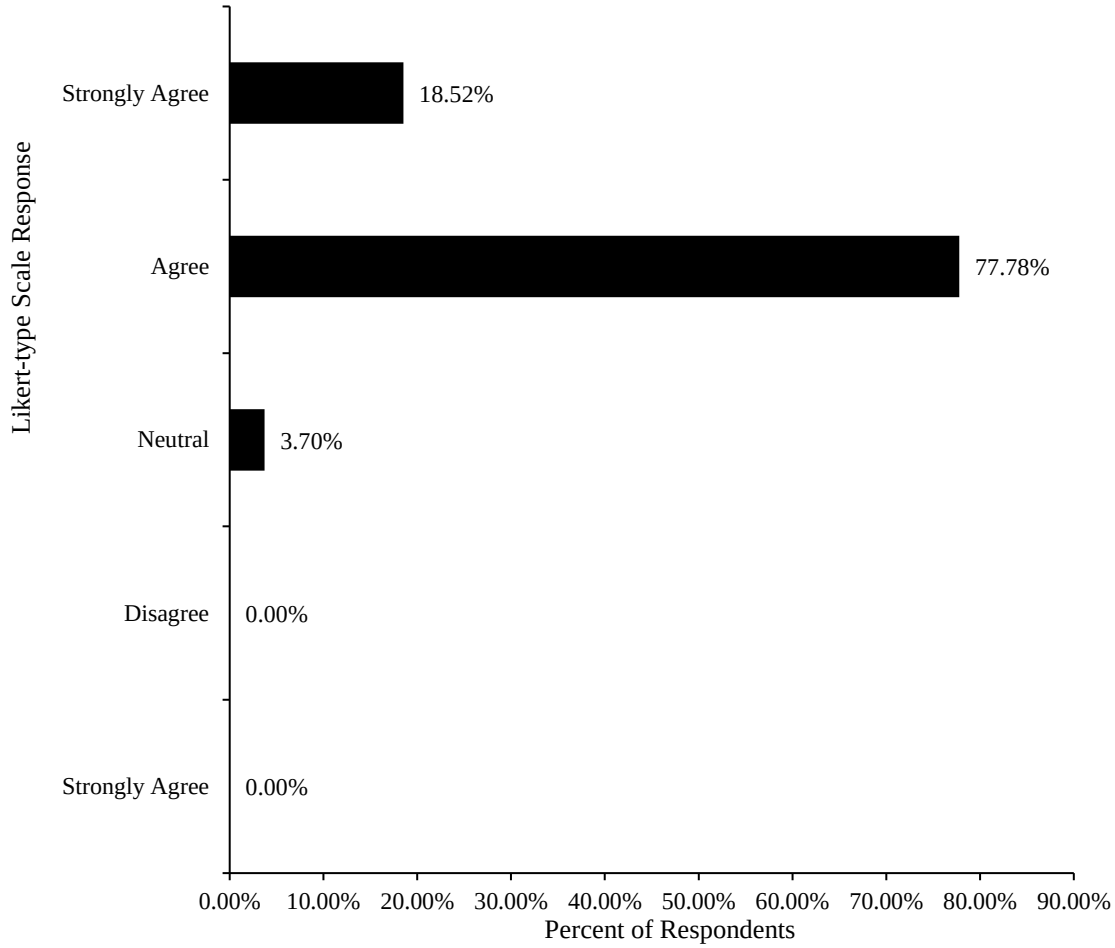


Survey Statement 1.4

Teachers were asked to respond to the statement, “I learned how to manage my classroom on my own with a hands-on approach.” Most respondents agreed with this statement. As shown in Figure 9, 77.78% responded agree, 18.52% responded strongly agree, and 3.70% of participants responded neutral.

Figure 9

I Learned How to Manage My Classroom on My Own with a Hands-On Approach

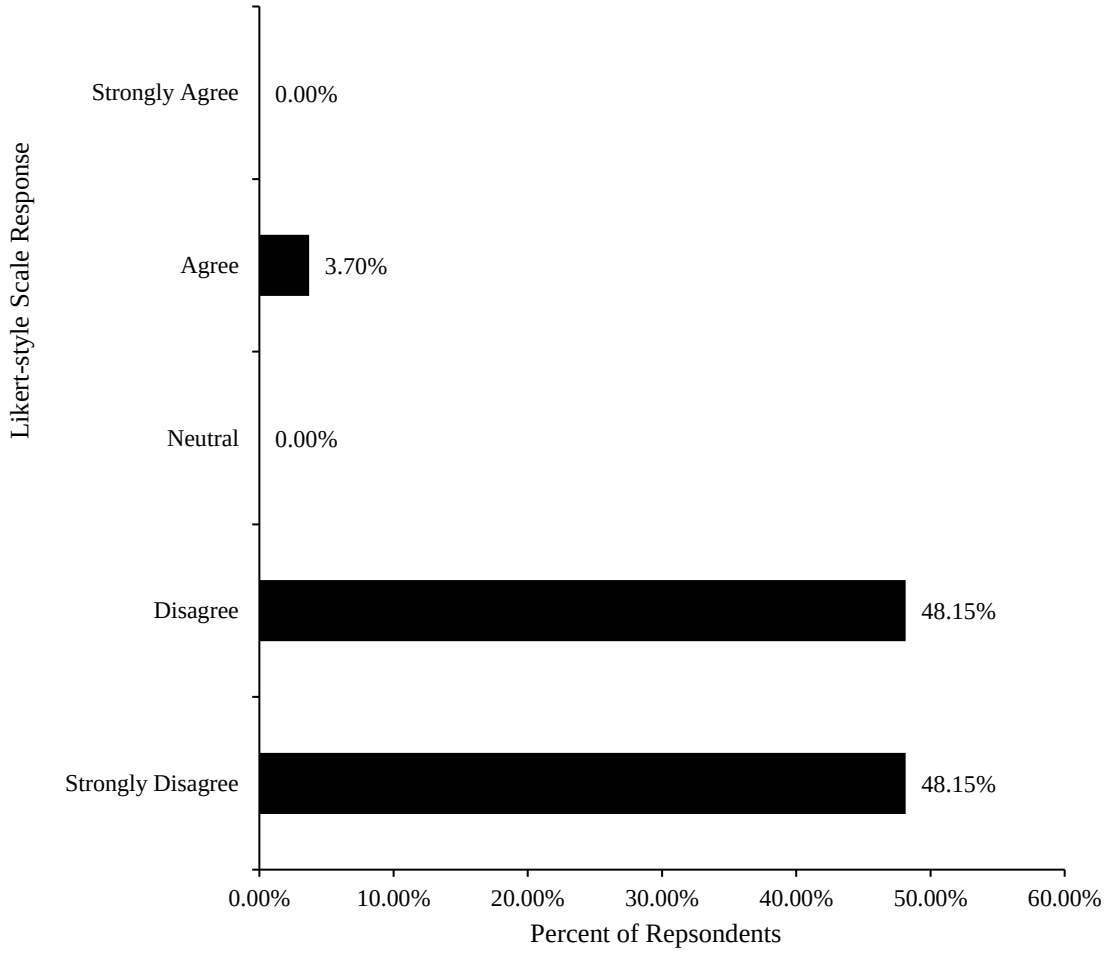


Survey Statement 1.5.

Participants were asked to respond to the following statement, “Changes in the weather do not have an effect on student behaviors in my classroom.” As shown in Figure 10, few participants, 3.70%, agreed with this statement. In contrast to 48.15% of participants who responded disagree and 48.15% responded strongly disagree.

Figure 10

Changes in the Weather Do Not Have an Effect on Student Behaviors in My Classroom

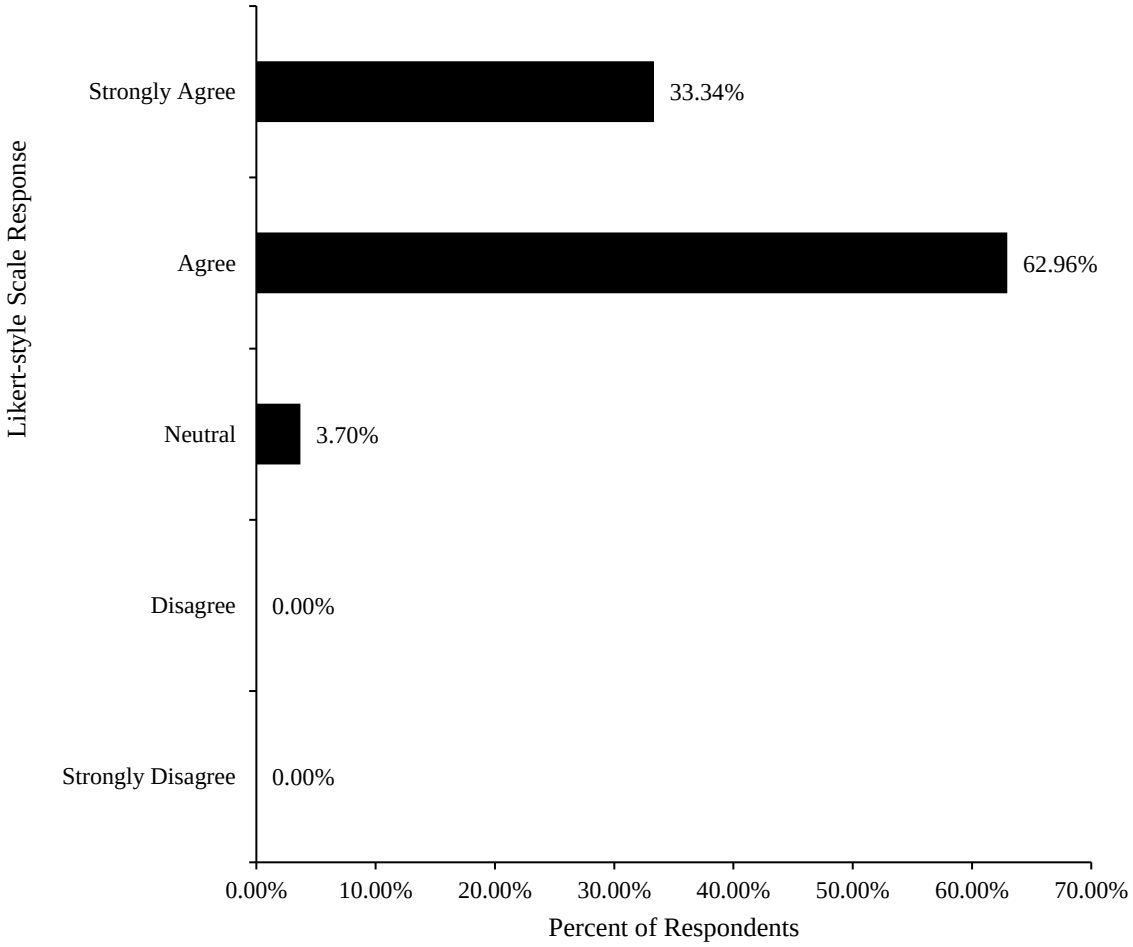


Survey Statement 1.6

Participants were asked to respond to whether they felt their classroom discipline issues increased during days of inclement weather. As shown in Figure 11, the majority of participants, 62.96%, responded agree, while 33.34% of participants responded strongly agree, and 3.70% of participants responded neutral.

Figure 11

My Students Have More Discipline Issues on Days When a Thunderstorm, Winter Storm, or Other Inclement Weather Occurs

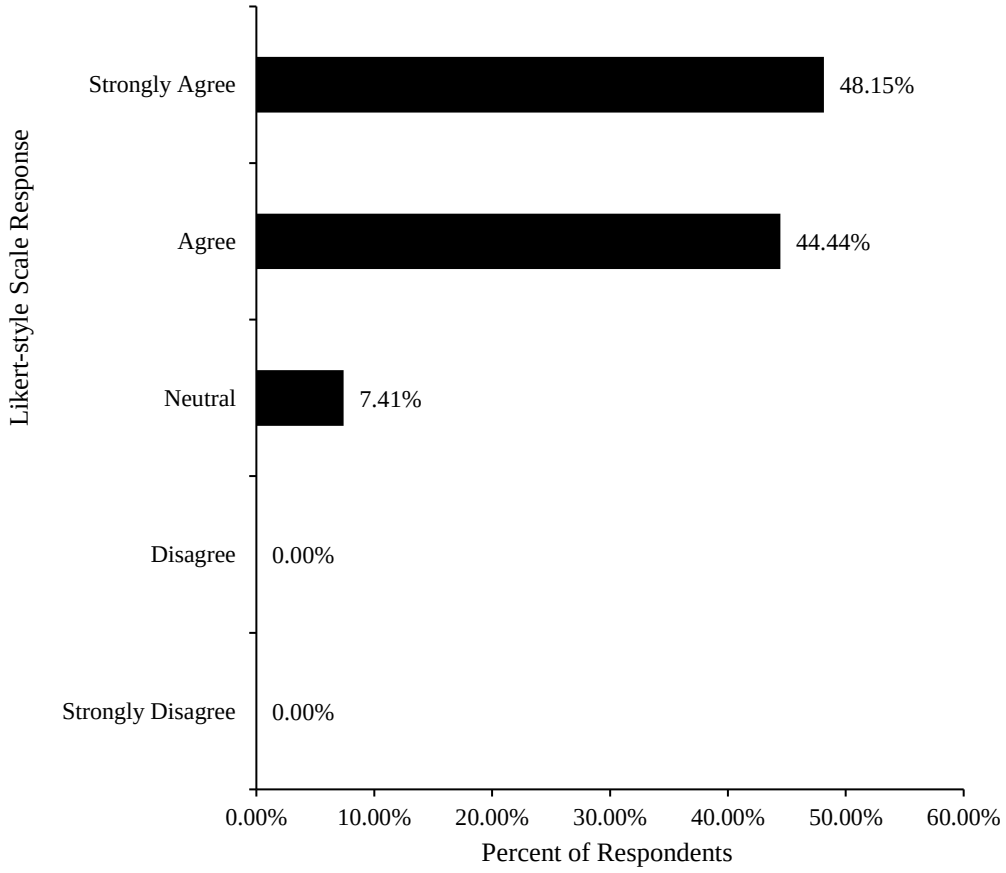


Survey Statement 1.7

Participants were asked to respond to a statement indicating their students are more excitable when the weather was changing. As shown in Figure 12, the majority of participants, 48.15%, responded strongly agree, 44,44% responded agree, and 7.41% responded neutral.

Figure 12

My Students Are More Excitable When the Weather is Changing

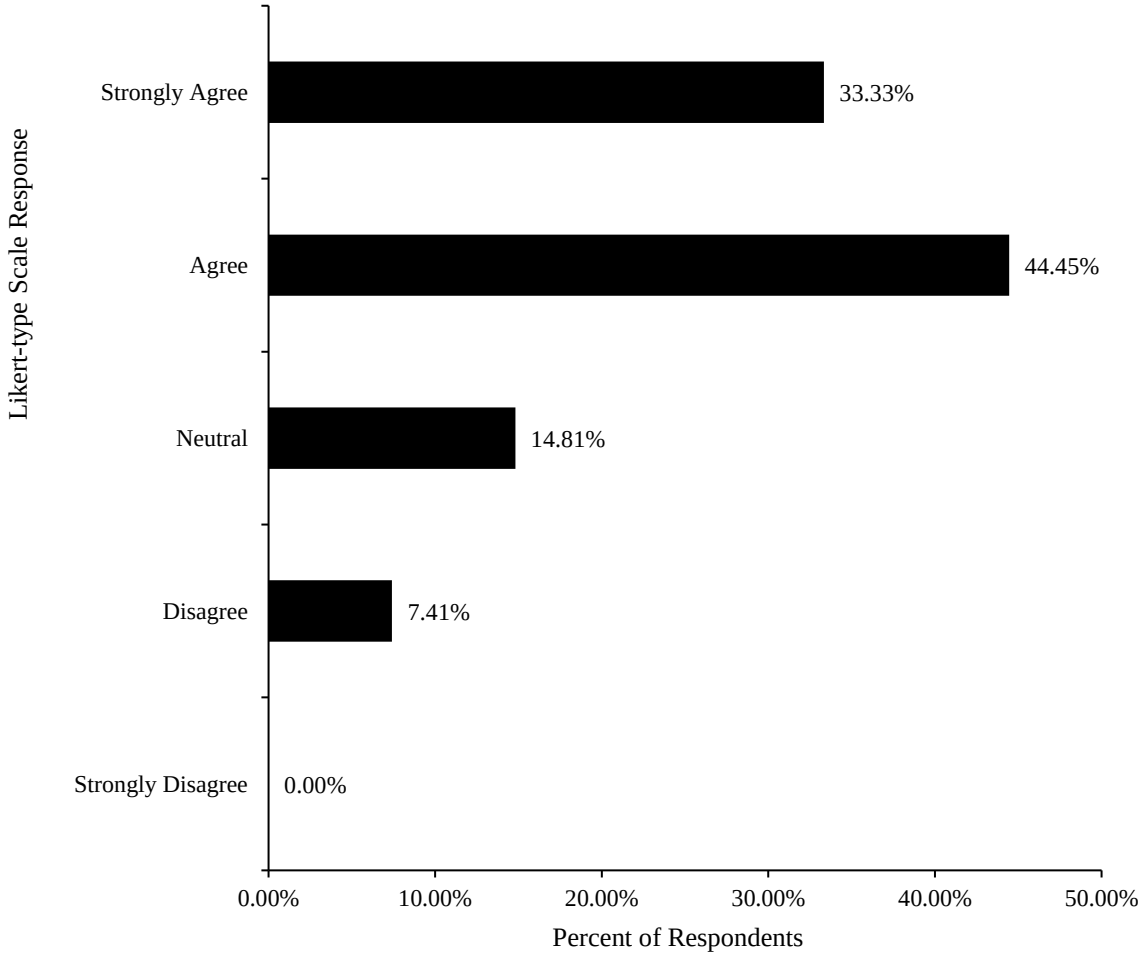


Survey Statement 1.8

Participants were asked to respond specifically about behavior changes before a winter storm. As shown in Figure 13, 33.33% of respondents strongly agreed with the statement, 44.45% of participants responded agree, and 14.81 responded neutral.

Figure 13

My Student's Behavior Changes Before a Winter Storm

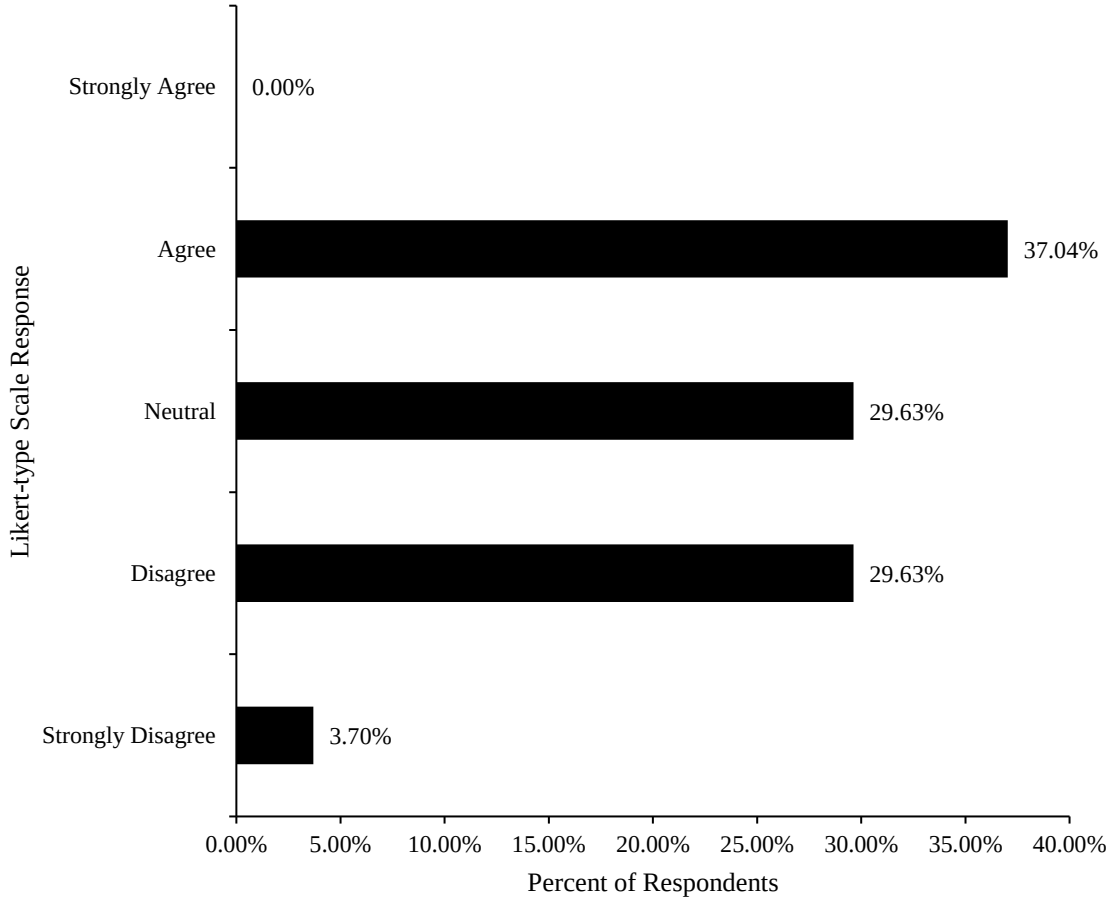


Survey Statement 1.9

Statement 1.9 asked participants to respond about students' ability to concentrate on academics when the temperature/heat index was above 90 degrees. As shown in Figure 14, 37.04% of participants agreed when the temperature/heat index was above 90 degrees, students remained able to concentrate on academics, 29.63% responded neutral, 29.63% responded disagreed, and 3.70% of participants responded strongly disagree.

Figure 14

My Students Are Able to Concentrate on Academics When the Temperature/Heat Index is Above 90 Degrees



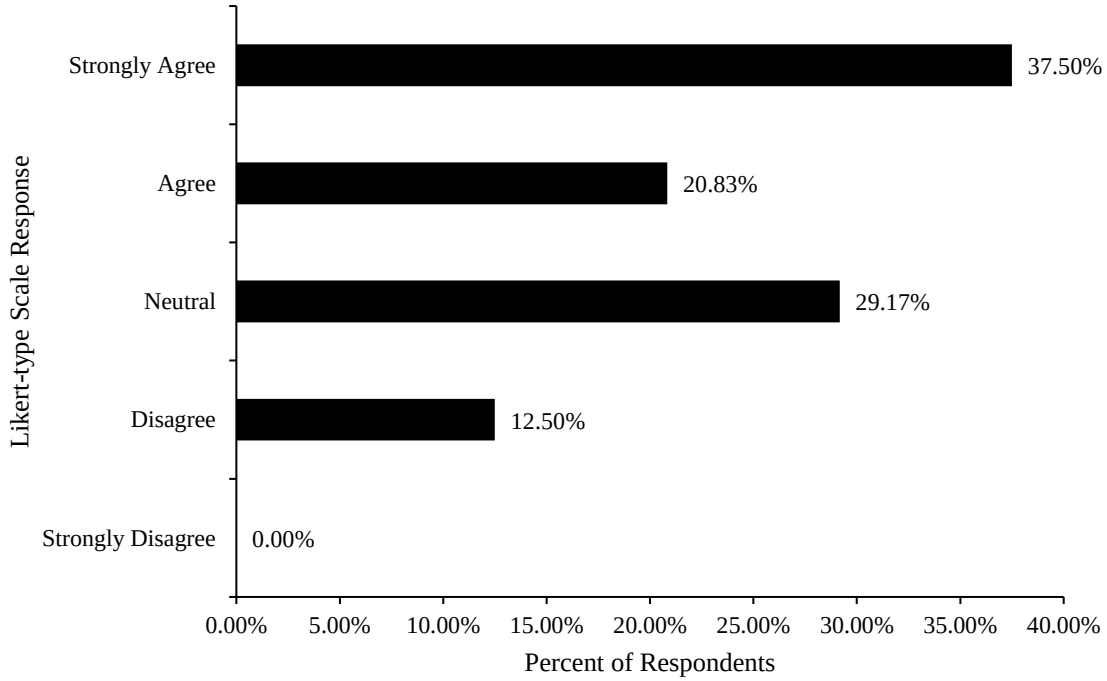
Survey Statement 2.1

Participants who have or have had students diagnosed with Autism in kindergarten through third grade responded to statements comparing students diagnosed with Autism and students not diagnosed with Autism and their reactions to the weather. Six statements used a Likert-type scale response to rate responses.

Statement 2.1 requested responses about a teacher feeling their students diagnosed with Autism were more aware of weather changes than students not diagnosed with Autism. As shown in Figure 15 most participants, 37.50% responded strongly agree while 20.83% responded agree, 29.17% responded neutral, and 12.5% disagreed with the statement.

Figure 15

My Students Diagnosed with Autism Are More Aware of Weather Changes, Than My Students Not Diagnosed with Autism

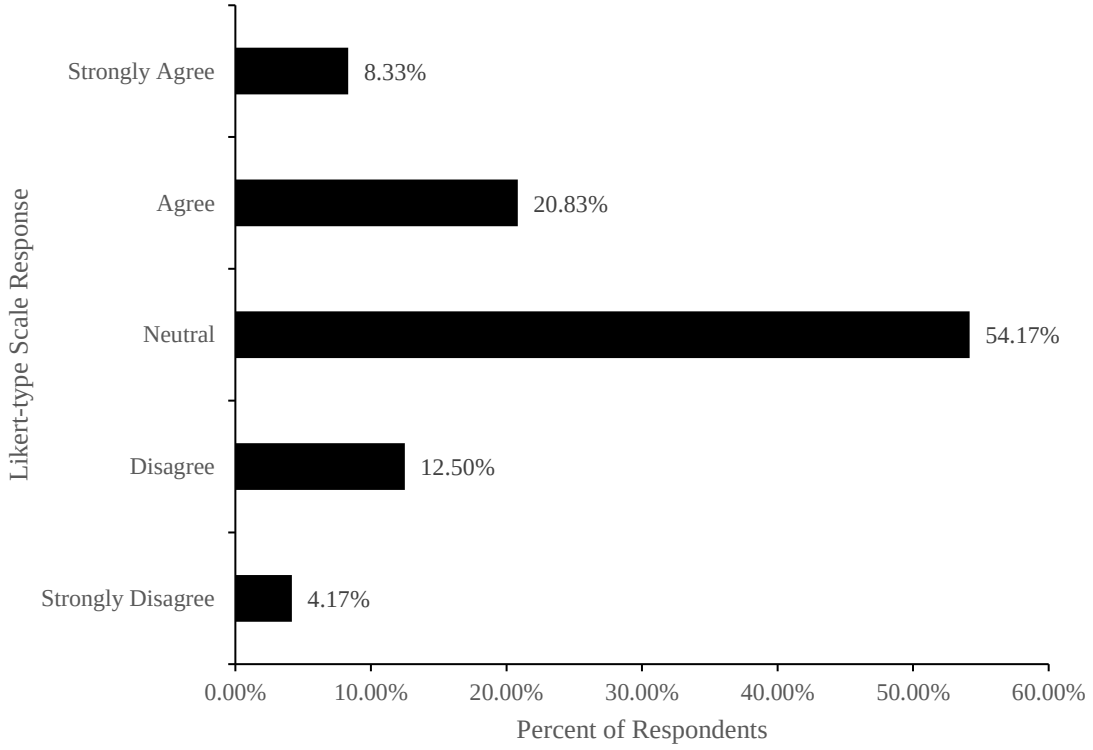


Survey Statement 2.2

Statement 2.2 requested participants to rate students diagnosed with Autism and students not diagnosed with Autism and their excitability when the sun was shining, and the temperature was between 65- and 80-degrees Fahrenheit. Most participants, 54.17% responded neutral, while 8.33% responded strongly agree and 20.83% of responded agree. However, 12.5% responded disagree and 4.17% responded strongly disagree (see Figure 16).

Figure 16

My Students Diagnosed with Autism Are More Excitable When the Sun is Shining and It is Between 65 and 80 Degrees Fahrenheit, Than My Students Not Diagnosed with Autism

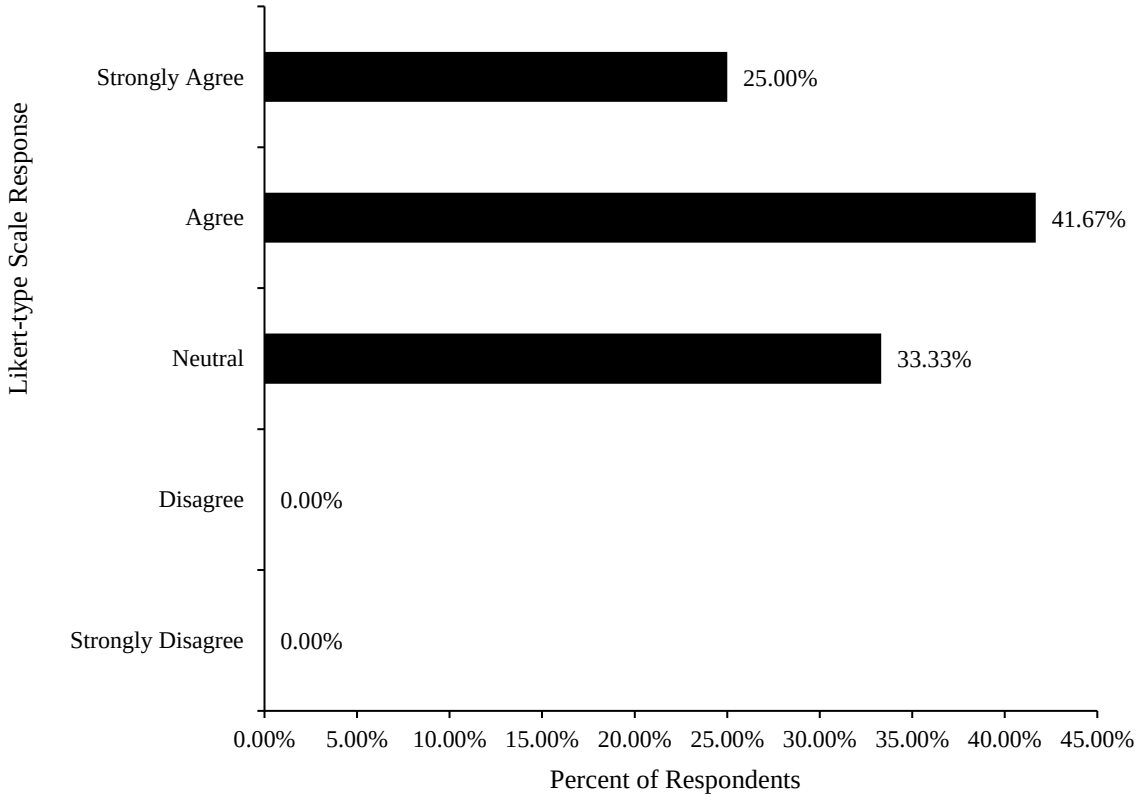


Survey Statement 2.3

Participants were asked to respond to the statement, “Students diagnosed with Autism are more excitable during a thunderstorm, winter storm, or other inclement weather, than my students not diagnosed with Autism.” As shown in Figure 17, the majority responded agree or strongly agree, 41.67% responded agree, 25% responded strongly agree. Fewer, 33.33%, of respondents indicated neutral.

Figure 17

My Students Diagnosed with Autism Are More Excitable During a Thunderstorm, Winter Storm, or Other Inclement Weather, Than My Students Not Diagnosed with Autism

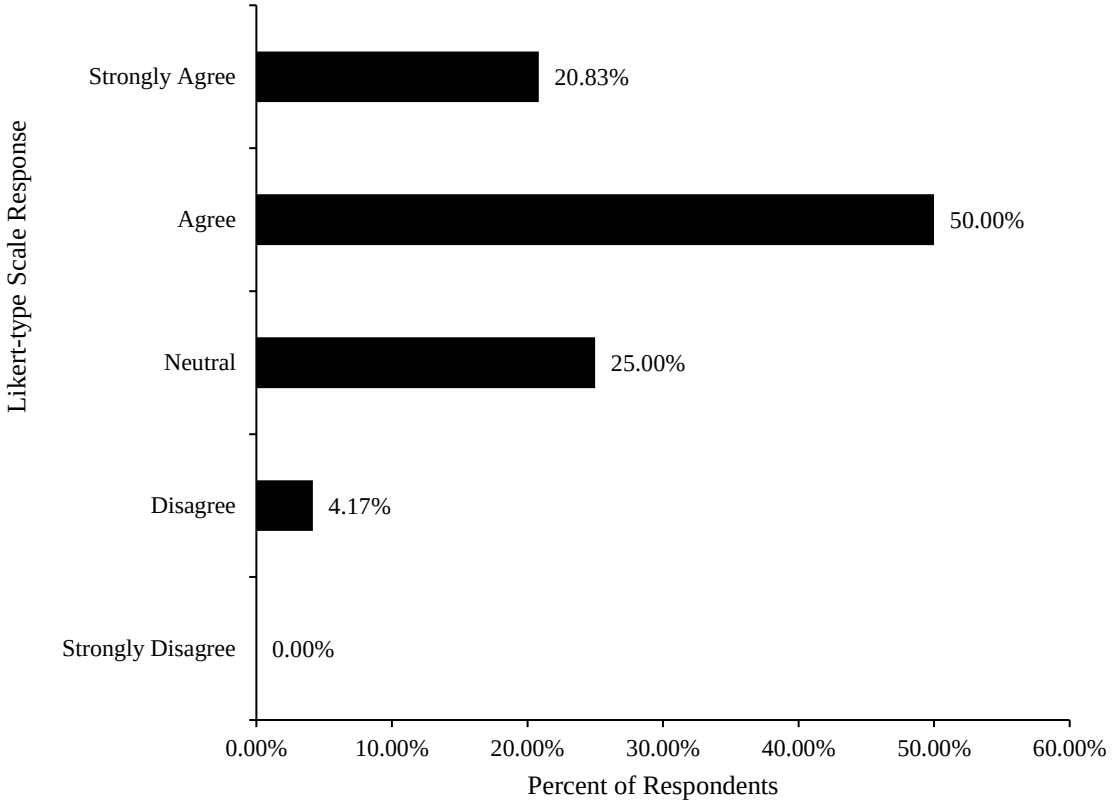


Survey Statement 2.4

As shown in Figure 18, participants were asked to respond to the statement about students diagnosed with Autism possibly being or not being more agitated when the weather was changing when compared to students not diagnosed with Autism. The majority responded strongly agree or agree, as shown in Figure 18, 50% agreed with the statement, 20.83% of participants strongly agreed. Few responded with neutral or disagree, 25.00% responded neutral, 4.17% responded disagree.

Figure 18

My Students Diagnosed with Autism Are More Agitated, When the Weather is Changing, Than My Students Not Diagnosed with Autism

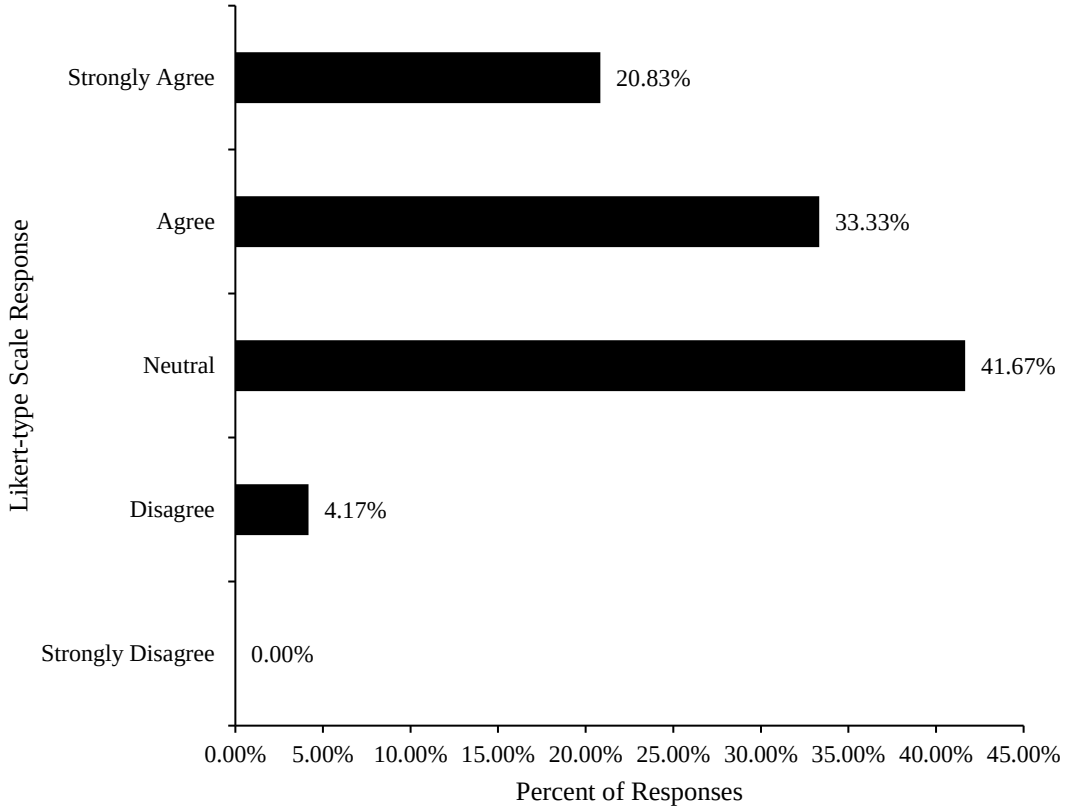


Survey Statement 2.5

Participants were asked to respond to the statement, “My students diagnosed with Autism have a harder time concentrating on academics when the weather was changing than my students not diagnosed with Autism.” As shown in Figure 19, 20.83% of participants responded strongly agree, 33.33% of participants responded agree, 41.67% responded neutral, and 4.17% responded disagree.

Figure 19

My Students Diagnosed with Autism Have a Harder Time Concentrating on Academics When the Weather is Changing Than My Students Not Diagnosed with Autism

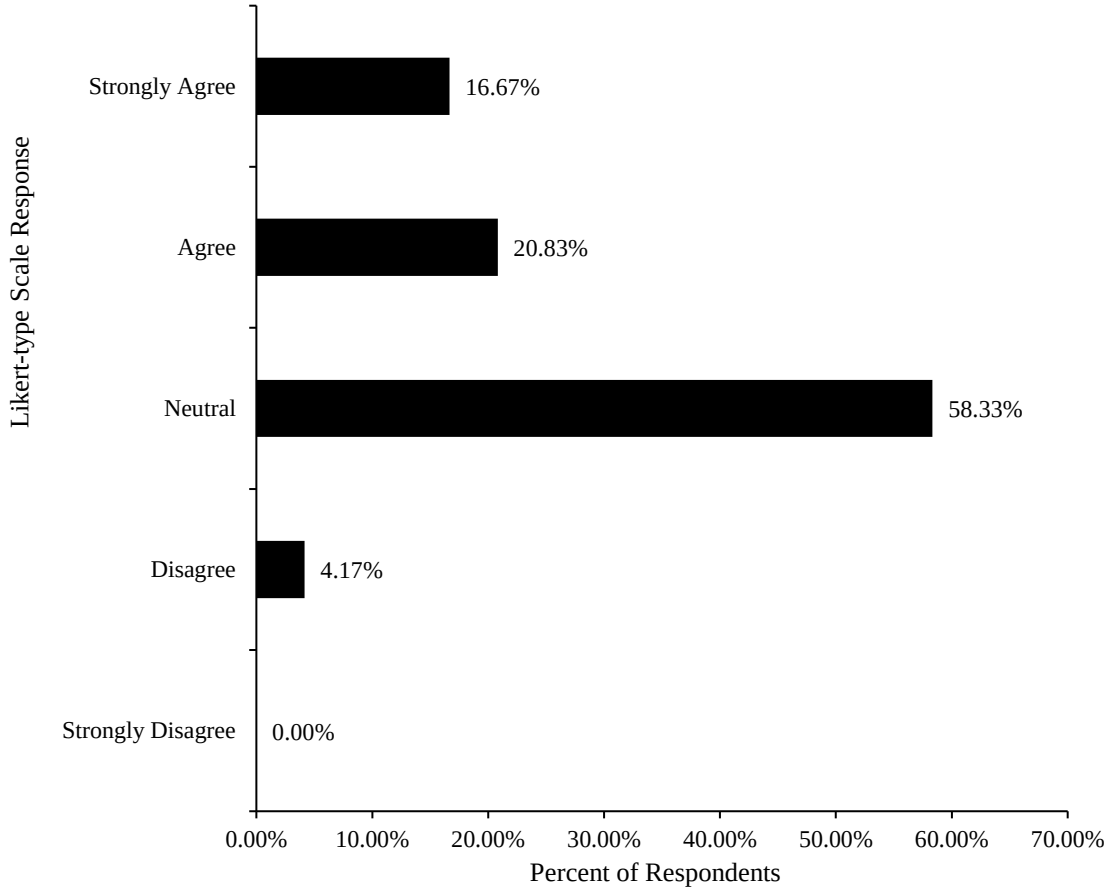


Survey Statement 2.6.

Statement 2.6 requested respondents to rate the amount of discipline issues they saw in their classrooms when the weather changes, comparing students diagnosed with Autism with students not diagnosed with Autism. As shown in Figure 20, the majority of participants, 58.33%, responded neutral while 16.67% responded strongly agree, 16.67% responded agree, while 4.17% responded disagree.

Figure 20

My Students Diagnosed with Autism Have More Discipline Issues on Days When the Weather is Changing Than My Students Not Diagnosed with Autism



Spearman's Rho Analysis Research Question One.

What is the relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather?

A Spearman's Rho calculator was used to calculate whether there was a significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather. Each respondent's rating for survey statements 1.5 to 1.9 were totaled and averaged to create the values for variable X. Values for variable Y were calculated by averaging respondent's ratings for statements 2.1 to 2.6. The value of *r* was: 0.40667 and the value of *p* (2-tailed) was: 0.03529. The null hypothesis was rejected. A significant relationship was found between student behavior in kindergarten through third-grade classrooms and changes in the weather.

Mann Whitney U Analysis for Research Question Two

What is the difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather?

A Mann-Whitney *U* was used to calculate whether there was a significant difference in student behavior between kindergarten through third grade students diagnosed with Autism and kindergarten through third grade students not diagnosed with Autism regarding changes in the weather. Each respondent's rating for survey statements 1.5 to 1.9 were totaled and averaged to create the values for variable X. Values for variable Y were calculated by averaging respondents' ratings for question two 1–2.6. The Mann Whitney U calculated a *z*-score of -0.32081 and a *p*-value of .74896. The result was not significant at $p<.05$ and the null hypothesis was not rejected. No

significant difference was found in student behavior in kindergarten through third grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather.

Qualitative Data Collection

The qualitative portion of data was gathered through a focus group. Principals in each building were given an opportunity to ask their staff to participate in the focus group. Email addresses of potential participants were gathered. Requests to participate, disclosures, and questions for the focus group were sent to the four potential participants along with the Zoom link and schedule. Three of the four potential participants were present for the focus group meeting.

Focus Group Participant Demographic Data

Participant 1 had been teaching for 20 years. They were teaching in a third-grade general education classroom at the time of this study. They have in the past or at the time of the study did have a student diagnosed with Autism in their classroom.

Participant 2 had been teaching for three years. They were teaching in a kindergarten, general education classroom at the time of this study. They currently did not have a student diagnosed with Autism and have never taught a student diagnosed with Autism.

Participant 3 had been teaching for 14 years. They were teaching third through fifth grades as an Innovation Specialist at the time of this study. They had worked with several students diagnosed with Autism in the past and at the time of this study were working with students diagnosed with Autism.

Focus Group Data Presentation

Qualitative data were collected through the Focus Group Discussion. The Focus Group consisted of three teachers with three or more years' experience, teaching grades kindergarten through third-grade, all participated via Zoom. The meeting lasted approximately 30 minutes. Section one of the Focus Group gathered demographic data to ensure relevancy and appropriateness for the study. Questions in section two of the focus group were created around the framework set by research from Sieberer-Nagler (2016), "Effective Classroom-Management and Positive Teaching." The focus group discussion questions were developed to answer research question three.

Question 1. In what ways do you feel you were prepared for classroom management before you started teaching?

All three participants agreed they did not get enough training in the area of classroom management before they started teaching in the classroom for the first time after student teaching. Participants 1 and 2 thought they were at first confident about their preparedness before starting their own classroom, however, realized after a short time they were not prepared. "I was prepared with a lot of strategies, but not so much how to implement those strategies," participant 2 commented. Participant 1 mentioned, "I thought I was prepared, but I quickly found I wasn't very prepared." Participant 3 explained, "They really didn't prepare you for the extent of some of the severe behaviors. So that was a shock to me."

Within the timeframe of discussion for this question, student teaching was discussed as well. Participant 3 added:

> A lot of times your student teaching starts after the first day of school, so you don't see how that first day looks. Or the student teaching starts in January, and it is just a whole different experience at that point because the classroom management has already been established.

Participant 2 expressed:

> I had never seen the beginning part of the year when you would implement those management procedures. So, figuring out how I wanted to start the beginning of my first year was very difficult. I had no idea how to start my classroom management.

Question 2. **Where did you receive the preparation for your classroom management and how effective was it?**

All three participants expressed they received most of their preparation through internships and student teaching. Further, they emphasized it was not enough due to not starting the year with students and taking over a class with an already established management system in place. Participant 3 shared how important it was to build relationships with students, and they did not experience that while in college, because the instructors were more focused on the logistics of teaching.

Participant 1 commented:

> Student teaching was really important, because it gets you into the classroom regularly with a mentor teacher who really shows you the way. Then the classroom teacher will let you take over the classroom and use the strategies yourself in a real classroom.

Participant 2 added, “I don’t understand how those doing alternative education can jump right in. I’ve seen what that does for some of them, and it is not good!” Participant 1 commented:

> I was able to learn from the teacher I was working with all day and if I had issues come up, I could talk with her. She was right there to give me tips on how to do things. I can’t imagine starting teaching without student teaching.

Question 3. What kinds of student behaviors do you witness on a typical day at school?

Responses were similar for all three participants. One commonality was they all felt students interrupting lessons or other conversations was one of the biggest challenges they face. Participant 2 stated:

> Mostly just the interrupting, and if there is something they need to do independently, and I am doing small groups, they are constantly needing attention, but I am trying to do small groups…they are constantly needing me to do something with or for them and are always interrupting small groups.

Participant 3 expressed in reference to returning to school after COVID-19:

> We have had a lot of interrupting and to me just blatant disrespect, not like, I’m sorry, I got so excited about what you’re saying, so I interrupted you. As it used to be before COVID-19, but Yes, you’re speaking, but I don’t care kind of thing.

Participants 2 and 3 expressed concerns with school year 2021-2022 especially, experiencing more extreme behaviors, including temper tantrums, disrespect, and destruction of the classroom. Participant 3 added, “we have been experiencing more extreme behaviors. It’s almost like they forgot how to act at school because they were

home and virtual for so long." Participant 2 emphasized, "this year we have had behaviors where it is necessary to evacuate the room due to unsafe students." Participant 3 included,

> Essentially, even for little things, a lot of students, even older students, are throwing complete temper tantrums. With all of it like throw yourself on the ground, screaming, crying, yelling, puling stuff of the walls. Students are also not able to handle when things are not going their way or the way they think they should go and not being able to handle being wrong.

Question 4. Do these behaviors seem to be worse during changes in the weather and if so, how?

Participant 1 talked about students getting excited when they are going to see snow, "when we are supposed to get snow it's a huge deal because the kids get so excited and they just want to see that snow, and they…get really excited and just want to talk about it." Participant 3 added, "When the weather means that we get out of class early and we have early dismissal because of the weather…the kids get anxious."

Participant 2 included an opinion about rain, "rain has an effect on them too. Just as much as snow…they get more restless, and they need to move more." Participant 3 added:

> They get more restless when they have the feeling they won't get to go outside and recess is inside…They just have a sense that they can't go out, like, they become very overactive and constantly moving around the room, jumping around, and being everywhere.

Participant 1 noted, “I don’t really think I see specific changes due to rain, unless there is a thunderstorm, and it is raining heavily. Then I will see some anxiety, some nervousness, and worrying about dismissal.” Participant 3 included, “some kids will stress because of the possibility of tornadoes.”

Question 5. What types of student behaviors seem to be more prevalent during weather changes?

Participant 2 reiterated, “Jumping around and being everywhere is one of the most prevalent behaviors I see. They also get pretty talkative, a little more than normal.” Participant 1 reviewed Participant 3’s prior comments in her thoughts:

> During thunderstorms and snow, I see changes in behaviors, such as anxiety like [Participant 3], but also during our very windy days I see anxiety because of the possibility of tornados. I see anxiety with kids worried about the noises they hear on the roof and what they see blowing around outside. Then I notice they are more talkative but have anxiety too.

Participant 3 added, “Anxiety or even irritability. Especially if there’s been a lot of rain and they’ve been inside for recess for several days, definitely irritability!” Participant 1 included, “When we have the very cold weather too, and they are inside for a few days, they get irritable.”

Question 6. What are some strategies that you use during changes in the weather, such as rain, snow, extreme heat or cold to offset poor student choices regarding their behavior?

Participant 2 explained, “taking more movement breaks…throughout our day and doing something extra to get them a little bit more active, with structure.” Participant 1

added, “during rare occasions of snow [during the school day] we will go to the window and have a lesson on the snow to calm the class.” Participant 3 included, “We will go outside depending on if they have jackets and talk about what it is. I will make a mini-lesson out of it.”

> Participant 2 expressed the need to create a calmer atmosphere during storms:
>
> I try to create a calm environment with either lights off or only using a few lights. Sometimes I will play calm music…to make the environment a little bit calmer. I also have a diffuser and will put some lavender in it.

Participant 1 agreed:

> If it’s thunder and lightning and they’re nervous about it, it’s good to have a calm atmosphere as much as you can. But also talking to them about it, it is ok, it is just lightening, the thunder is loud, but we are safe.

Participant 3 added, “[During weather changes] we acknowledge the weather and remind them [students], It is different [outside] right now, but that is not an excuse for negative behavior when they are acting up.”

Question 7. If you have or have had a student diagnosed with Autism, do you see different behaviors from those students, if so, what are those behaviors?

Participants 1 and 3 have or have previously had students diagnosed with Autism in their classrooms. Participant 1 expressed students diagnosed with Autism wanted to talk about what was happening and get reassurance more than students not diagnosed with Autism:

> Especially if they talked about the upcoming weather with their parents before school, they want to talk about it. If they talked about the possibility of no school

> because of how much snow is coming they have more questions about the weather. Some get anxiety about what might happen. This is the same when there is a tornado threat. They need more reassurance because there is anxiety.

Participant 3 included:

> Some [students diagnosed with Autism] have the Weather Channel app on their iPad and will be distracted by weather that is coming. Depending on where they are on the Autism Spectrum, they might stem more often when the weather is changing or there is a possibility of severe weather, but I relate that to anxiety.

Question 8. What seems to trigger negative behaviors, in students you have taught, diagnosed with Autism?

When do these behaviors occur the most? Both Participant 1 and 3 agreed changes in the schedule or sudden change affected students diagnosed with Autism the most. Participant 3 expressed, "I would say any kind of change in schedule, change of people, change of location, or the classroom environment." Participant 1 added, "…a big change all of the sudden and we couldn't prepare students for the weather. …a delay really throws off the day, the schedule, the routine."

Follow-up Questions for Focus Group

Following the focus group session, the data were reviewed (Creswell & Creswell, 2018; Fraenkel et al., 2019). Upon review, it was discovered additional data was necessary (Creswell & Creswell, 2018). According to Creswell and Creswell (2019), when more data is necessary, follow-up questions are warranted. The three participating focus group members were emailed three additional questions for their opinions on classroom management. All three participants responded.

Follow up question 1. What does your day-to-day classroom management look like?

Participant 1 explained the necessity of beginning with classroom management in the very beginning of the year by going over schedules and practicing daily routines. Participant 2 also ensures routines are set in place. In the very beginning of the school year, participant 2 spends a great deal of time implementing routines by modeling and practicing with students. Participant 3 did not have a traditional classroom, therefore their classroom management style started with building relationships, however ensuring follow through with the standing expectation.

Participant 1 has daily pictures posted as visuals for transitions and reviewing daily expectations before group work, partner work, individual work, or student movement to other classrooms. Participant 2 prefaces new activities or transitions by discussing the expectations of what should be heard and seen during the activity or transition. Participant 3 mentioned consistency and respect was one of the most important aspects of classroom management.

To gain students' attention, Participant 1 uses a call response, such as "class-class-class" with the response of "yes-yes-yes." Participant 2 gained student attention by using a classroom timer or other sound cue, including a clap back such as "clap-clap" then students would respond with the same clap rhythm. Timers were set for activities and students quickly learned what to do when the bell rang, followed by teacher direction (Participant 2). Understanding students and getting to know them is how Participant 3 gives and gains respect, which helps with gaining student attention for transitions.

Participant 2 acknowledges positive behavior over poor behavior by giving specific praise and using a positive point system. Participant 3 also included, “If a student is misbehaving, I pull them aside to avoid embarrassment and escalating the situation. If consequences are necessary, they are given without emotion, and I always follow up after the situation.”

Finally, communication with parents was an important part of classroom management as well. Participant 1 uses ClassDojo with positive incentives for good behavior. ClassDojo is a class community-building tool to connect classrooms with parents (ClassDojo, 2022). Participant 2 uses ClassDojo as well, by giving positive points online and communicating with parents through the system.

Follow up question 2: How did you develop your classroom management style and how does it or why would it change from year to year?

Participant 1 mentioned team collaboration in order to develop a quality classroom management style for each year. “Through trial and error over a few years…We tweak it each year to incorporate new ideas according to student needs” (Participant 1). Participant 2 described their classroom management development as also being a collaborative effort. According to Participant 2, classroom management was not in place their first year of teaching due to not having enough expertise in that area to implement the kind of structure necessary. Therefore, another teacher came into the classroom and modeled it for Participant 2. Together, developed visuals for students to follow, a clap back, and placed visuals with clear expectations at working areas in the classroom. Each year, Participant 2 changes classroom management to meet the needs of the students in the classroom. Participant 3 also explained, “My classroom management

style definitely changes from year to year because kids and classes vary from year to year." Further Participant 3 added, "Some kids need to have different expectations and consequences. I focus a lot on relationship building [more] than anything. [But] consequences are generally straightforward and related to the infraction."

Follow-up question 3: Why do you feel classroom management is important (Why is there a need to have secure/effective classroom management in place)?

Participant 1 explained, "Good classroom management is important for students to feel safe, comfortable, and have clear expectations for each part of the day in order to be able to better focus on the lesson and the assignments." According to Participant 2, "Classroom management must start at the beginning of the year. When a classroom lacks management, it creates a chaotic environment. An unreliable, chaotic environment does not allow for students to feel safe and secure, preventing optimal learning." Participant 3 added, "Without classroom management, a teacher cannot teach, kids cannot interact, and learning cannot occur. Kids want to feel safe and secure at school. They like things scheduled and to know what to expect."

Summary

A Mixed Methods approach was used to complete this study. The quantitative portion was completed using a survey and the qualitative portion was completed using a focus group. Quantitative data were gathered from volunteer teachers over three elementary campuses and was presented using frequencies and percentages through graphs and charts. Qualitative data were gathered from three volunteer teachers having a discussion over Zoom and follow-up questions via email. Their discussion was led by

prompting questions specifically built to answer research question three through their personal experiences and thoughts on weather and behavior in their classrooms.

Chapter Five includes the findings and conclusions of the quantitative and qualitative data. The implications for practice are provided and suggestions on how to apply changes in the classroom are detailed. Finally, recommendations for future research are described.

Chapter Five: Conclusions and Implications

The purpose of this study was to examine the relevance of a relationship between the weather and student behavior of students in kindergarten through third-grade. Effective classroom management is imperative for a successful classroom without outside influences (Sieberer-Nagler, 2016). When outside influences are present, such as the weather, according to VanBuskirk and Simpson (2013), classroom management becomes more difficult. According to Kratochwill et al. (2018), understanding outside influences on classroom management, such as the weather, gives opportunity for teachers to plan for the unexpected.

The intent of this study was to understand if a relationship existed between the weather and student behavior when proper and effective classroom management was in place. Lew and Nelson (2016) found teachers have the most difficulty with classroom management and student achievement. Distractions are one of the most prevalent problems with classroom management, according to Gage and MacSuga-Gage (2017), while Lagace-Seguin and d'Entremont (2005) indicated weather as being one of those distractions.

Due to COVID-19, this study was altered from being a full study to a case study. Teachers from the original three districts chosen were reluctant to participate in the survey and focus groups. In response to the reluctance, a school in the Texas Education Agency Region 9 was chosen as the case study location. During the Pandemic, according to SYKES (2021), teacher workloads significantly increased adding about 900 extra hours of work to the school year. According to Long (2020), the work overload created more stress and anxiety than the virus itself. During the Pandemic, teachers gave their

best efforts (Winchester, 2021). After the Pandemic teachers were tired and slowed down (Winchester, 2021). They no longer wanted to do extra work, due to lack of appreciation during the pandemic (Winchester, 2021).

The findings from this case study's qualitative and quantitative data analysis were provided in Chapter Four and are further detailed in this chapter. The review of literature in Chapter Two has been triangulated with the data from the survey and the focus group allowing for conclusions to be formed and themes identified. The implications for practice and recommendations for further research are identified. In conclusion, a complete final summary is provided.

Findings

Teacher perceptions on weather affecting student behavior in the classroom were elicited and analyzed. Three research questions were posed and used to guide this research gathering quantitative and qualitative data. The survey was used to gather quantitative data regarding teacher perceptions about how the weather affected their students. The qualitative data were collected via a focus group discussion. The qualitative data were analyzed to understand teacher's perceptions concerning weather and student behavior. Data from the survey and focus group revealed teacher perceptions regarding teacher preparation, classroom management, and distractors in the classroom regarding the weather.

Participant Demographics

Participants in the survey were asked several demographic questions in order to qualify them for research. Demographics of participants was important because it validates the research (Asiamah et al., 2017). Multiple choice options were offered.

Participants were asked for their years of experience. Fifty percent of participants indicated they had been in the teaching field for between 11 and more than 20 years of experience. Fifty percent also had less than 11 years, but more than one year of experience. This question was important to verify teachers had enough experience and could compare one year of students to another when thinking about the questions in the survey.

Grade levels currently taught by participants were also important. This study was focused on kindergarten through third-grade student behavior; therefore, participants must have been teaching students in kindergarten through third-grade. Teachers who taught multiple grade levels were the highest participant level with 32.14%. Participants who were currently teaching only one grade level, kindergarten through third, were 67.86%.

Understanding the subject area taught by each participant was important to understand how opinions were formed. More than 60% of participants taught in the general education classroom. More than 11% taught physical education or music classes. More than 14% taught special education or Title 1 and more than 14% taught another subject not specified. The data for participation of teachers indicates most experiences and formed opinions came from the general education setting.

Questions four and five asked about experience with students diagnosed with Autism, therefore it was important to ask participants if they had experience working with students diagnosed with Autism. More than 71% indicated they were currently teaching a student diagnosed with Autism, while almost 29% were not. In addition to currently teaching a student diagnosed with Autism was the question of teaching a

student diagnosed with Autism in past years. Almost 90% of participants had taught a student in past years diagnosed with Autism.

Classroom Management

The first four survey statements asked respondents about their classroom management. These statements were important for understanding how teachers felt concerning classroom management prior to responding to statements regarding student behavior with weather changes. Participants who felt their classroom management was strong would have a better understanding of situations when their classroom was more difficult to manage (Gage & MacSuga-Gage, 2017; Garwood et al., 2017).

Teachers were first asked to respond to a statement regarding their overall classroom management. All participants agreed or strongly agreed their classrooms was well-managed. Almost 52% of participants responded with the choice of agree while just over 48% chose strongly agree. No participants responded with neutral, disagree, or strongly disagree. Ensuring optimal classroom management systems was imperative for teachers to accurately judge if weather was affecting classroom student behavior or is due to a lack of proper classroom management abilities.

The second classroom management statement inquired about a typical day and students being well-behaved. Fewer participants, just over 22% chose strongly agree than the previous question regarding their overall class being well managed. However, participants who agreed with the statement that their students were well-behaved on a typical day, was almost 78%. No participants chose neutral, disagree, or strongly disagree.

Participants were asked to respond to two statements reflecting where they received their classroom management techniques. The first being in a collegial setting and the second being through a hands-on approach. Teacher's responses indicated that both methods were beneficial.

When asked to respond to the statement regarding attending college courses or professional development to teach the participants about classroom management most strongly agreed with almost 45%. Further, almost 41% agreed with the statement. Just over 11% remained neutral for this statement while almost 4% disagreed, indicating they did not receive proper classroom management skills through a scholastic approach.

In contrast to receiving classroom management training through the collegial path, participants were also asked about gaining their understanding concerning classroom management with the following statement, "I learned how to manage my classroom on my own with a hands-on approach." No participants disagreed or strongly disagreed with this statement. The majority of participants selected agree, almost 78%. Over 18% strongly agreed while almost 4% remained neutral.

Focus group participants were given follow up questions to describe what their day-to-day classrooms looked like. All three participants indicated starting classroom management on day one in the classroom and maintaining consistency was most important. Followed by creating and maintaining solid relationships between the teacher and student. Finally, understanding parent involvement was necessary for following through with any consequences or making sure communication was taking place regarding student behavior.

The second follow up question asked about style and changing classroom management from year to year. Each participant indicated they changed classroom management each year depending on the student population address student needs of their class. Throughout the year, however, Participant 1 clarified, if a part of the classroom management did not work, it was changed in order for classroom and student success.

Finally, focus group participants were asked about the importance of classroom management. Again, each participant mentioned similar ideas including safety, comfort, security, and structure. With all those pieces in place, classroom management was successful and quality learning could take place.

Research Question One

What is the relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather?

When participants were asked their perception on changes in the weather and if it effected student behavior, over 96% agreed. Only 4% did not agree. Furthermore, when specifically asked about incoming storms such as a thunderstorm or winter storm regarding more disciplinary issues, 96% of participants again agreed. However, 4% responded neutral. This data revealed most participants had experienced increased student behavior issues with incoming weather changes.

When asked about excitability of students when weather was changing, more than 92% of participants agreed or strongly agreed, while less than 8% remained neutral on the issue. This indicated that most teachers who participated in the survey had

experienced excitable students while the weather changed. No participants disagreed or strongly disagreed with the statement.

The next statement specifically asked about students' behavior before a winter storm. Almost 78% agreed or strongly agreed they had experienced students' behavior changing before a winter storm. Nearly 15% of participants remained neutral while just over 7% felt their students' behavior did not change before a winter storm. With most participants agreeing with the statement, it indicated that a significant relationship between an oncoming winter storm and behavior changes was evident.

Concentration on academics in high heat was the next topic. Nearly 37% of participants agreed that when the heat index reached above 90 degrees, they noticed a change in student concentration. However, almost 30% stayed neutral while just over 33% of participants disagreed or strongly disagreed with the statement that student concentration was affected when temperatures rise above 90 degrees. Air conditioning was standard in the classroom setting, therefore regulating the temperature in the classroom.

The Spearman's Rho statistical was performed. The null hypothesis was rejected. A significant relationship between student behavior in kindergarten through third-grade classrooms and changes in the weather was found.

Research Question Two

What is the difference in student behavior between kindergarten through third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather?

To gain teacher perceptions to answer this question, it was necessary to have participants respond to statements specifically around students diagnosed with Autism. Therefore, participants who taught students with Autism either in the past or currently, were asked to respond to these statements. All statements compared students diagnosed with Autism with students not diagnosed with Autism.

When asked to respond to the statement, "Students diagnosed with Autism are more aware of weather changes than students not diagnosed with Autism," more than 58% of participants who have or have had students diagnosed with Autism in their classes agreed or strongly agreed with the statement. Just over 29% were neutral with the statement and 12.5% disagreed. Over half of the responses agreed students diagnosed with Autism were more aware of weather changes than students not diagnosed with Autism.

When asked to respond to a statement about excitability when the weather was between 65 and 80 degrees most participants remained neutral, just over 54%, indicated at this temperature they did not see much of a difference between students diagnosed with Autism and students not diagnosed with Autism. Almost 30% agreed or strongly agreed. Approximately 16% disagreed or strongly disagreed with the statement.

Participants were presented a statement comparing students diagnosed with Autism and students not diagnosed with Autism regarding being more excitable during a storm. Nearly 67% agreed or strongly agreed that their students diagnosed with Autism were more excitable than students not diagnosed with Autism. Approximately 33% remained neutral on the topic while none disagreed.

Furthermore, participants were asked to respond to a statement regarding students being agitated and to compare their students diagnosed with Autism with students not diagnosed with Autism. Almost 71% agreed or strongly agreed that students diagnosed with Autism were more likely to be agitated when the weather was changing than students not diagnosed with Autism. Remaining neutral, 25%, and just over 4% disagreed with the statement.

Participants were also asked to respond to whether they felt students diagnosed with Autism had a harder time concentrating when the weather was changing than their peers not diagnosed with Autism. Over half, 54%, agreed or strongly agreed with the statement, while 42% remained neutral. Just over 4% disagreed with the statement.

Finally, participants were asked to respond to a statement about discipline issues with students diagnosed with Autism when compared to students not diagnosed with Autism on days when changes in the weather were evident. Over half responded neutral, 58%, 37% agreed or strongly agreed with the statement, and just over 4% disagreed.

However, a Mann Whitney U was conducted to statistically answer research question two. The null hypothesis was not rejected. A significant difference in student behavior between kindergarten and third-grade students diagnosed with Autism and kindergarten through third-grade students not diagnosed with Autism regarding changes in the weather was not found.

Research Question Three

What are teachers' perceptions regarding the effect of changes in the weather on students' classroom behavior?

To gather more in-depth perceptions, a focus group panel of four participants was arranged. However, only three educators participated in the focus group which was conducted through the online platform Zoom. Questions for the focus group were developed to answer the third research question. The responses and opinions of these three participants provided qualitative data to answer the third research question.

The first group of questions required participants to talk about their demographics. This was important to ensure each participant was qualified to participate in the study. There were three participants. Participant 1 had been teaching for 20 or more years. Participant 2 had been teaching for 3 years. Participant 3 had been teaching for 14 years.

Participant 1 reported teaching one of the grades Kindergarten through third, in a general education classroom and had either currently or in the past worked with a student diagnosed with Autism. Participant 2 was a qualified participant teaching in the general education classroom in one of the grades kindergarten through third. Participant 2 had not yet had the opportunity to work with a student diagnosed with Autism currently or in the past. Participant 3 was a qualifying teacher who worked with more than one grade level in the non-general education setting. In Participant 3's third-grade group of students, a population of students diagnosed with Autism at the time of this study, was reported as well as in past years.

The participants were asked to describe their classroom management. More specifically, their preparedness, prior to the beginning of their teaching career and where they got most of their training. The three focus group participants all agreed that their training was not adequate.

The three focus group participants felt as if they each had a false sense of confidence in their classroom management abilities right after student teaching. They expressed this was because when starting student teaching, the experienced teacher had already set the classroom management structures and processes prior to the student teacher taking over. The participants did not experience developing and implementing a classroom management style prior to beginning their own classroom.

The next question regarding classroom management asked where they got most of their training. All three participants agreed they got most of their training during their student teaching, however expressed it was not enough. Participant 3 included the importance of building relationships with students by professional learning conferences but wished they had learned about that while in college. Participants 1 and 2 reiterated their experiences during student teaching was the most classroom management training they received before going on their own in the classroom. All three participants expressed the need for more classroom management development prior to being on their own in the classroom.

Participants were next asked to explain the different student behaviors they would see in a typical day. Each participant referenced COVID-19. Participant 2 expressed student behaviors such as interrupting during a lesson or small group. Participant 3 added concern that after COVID-19, interrupting in the classroom environment became more difficult to manage, describing students as not caring about someone else's conversation and interrupting anyone at any time to get their needs met at that very moment.

Participants 2 and 3 added the problem of extreme behaviors increasing after COVID-19. These extreme behaviors included temper tantrums, disrespect to other

students and adults, and destruction of the classroom because the student did not get their way. Participant 3 expressed concern that after COVID-19, students had more difficulty managing their tempers and handling situations when things did not go their way.

Question 5 asked participants about behaviors they see in their students during changes in the weather. Participant 2 began this portion of the conversation by expressing witnessing students increase in hyperactivity. Participant 1 and 3 noted an increase in anxiety due to the unknown of the incoming weather. Specifically, participant 1 identified weather patterns that included thunderstorms or snowstorms, as well as extremely windy days because of the increased chances of tornadoes. Participant 3 included an increase of anxiety and irritability whenever there was a possibility of early dismissal.

Strategies teachers used during these weather changes in order to manage their classrooms was the next topic of discussion. Participant 2 expressed the need to take more breaks during a lesson or doing something that required more specific structure in the classroom. Participants 1 and 3 included going outside or watching the weather from the classroom windows to talk about the weather, reassuring students they would be ok or necessary to teach a spontaneous mini-lesson on the topic of the weather.

The next question was asked to participants 1 and 3 only due to participant 2 not having experience teaching students diagnosed with Autism. Participants 1 and 3 were asked to compare the behaviors they see in students not diagnosed with Autism with the behaviors of those students diagnosed with Autism. Participant 1 expressed the necessity of talking to students diagnosed with Autism about the changes in weather and giving more reassurances to their safety. Participant 3 acknowledged the use of technology being more of a distraction due to students diagnosed with Autism having the Weather

Channel app on their iPads or other electronic devices and watching the weather constantly when their anxiety concerning the weather was high. Participant 3 also added a higher need for stemming for students diagnosed with Autism, during weather changes.

Participants 1 and 3 were then asked to describe specific triggers for negative behaviors in students diagnosed with Autism and when those behaviors occur the most. Both agreed, students diagnosed with Autism were most agitated, or showed the most anxiety, when their schedules or daily routines changed. Participant 3 also added, the change of location or environment created higher anxiety. Participant 1 ended with, a routine change such as a delayed start or early release creates higher anxiety.

Three follow-up questions were sent through email to the three focus group participants following the focus group discussion. First, what does your day-to-day classroom management look like? Second, how did you develop your classroom management system and how does it or why would it change from year to year? Finally, why do you feel classroom management is important (why is there a need to have secure/effective classroom management in place)?

Each of the three focus group participants expressed the necessity of classroom management starting at the very beginning of the school year. All three emphasized the need for setting expectations early, practicing routines, and being consistent. Participant 3 added the importance of building relationships with students.

When developing a classroom management style, all participants described the need for collaboration with other teachers. However, participants' classroom management styles remained similar from year to year, yet they expressed the need for change due to different student personalities in their classrooms. Collaboration with

former teachers prior to the first day of school continuing throughout the school year for adjustments was necessary.

The importance of classroom management was strongly emphasized by the participants. Each described safety and security as their main concern. Participant 1 added comfort for students. Participant 2 expressed chaos without effective classroom management. Participant 3 described the necessity of schedules and transitions. Finally, all three expressed the need for an effective classroom management system being in place for optimal learning to take place in the classroom. Participant 3 added, "kids don't care about what you know, until they know you care."

Conclusions

Analyzation of teacher perceptions on how weather impacts student behavior revealed several main themes. Classroom management training prior to beginning the teaching career was minimal. Teachers believe their students in kindergarten through third-grade are affected by the weather. Different types of weather may cause different emotions and behaviors in students' kindergarten through third-grade. Finally, students diagnosed with Autism are not significantly affected more or less than students not diagnosed with Autism.

Classroom management

The seven components of classroom management for students to be successful by Sieberer-Nagler (2016) was the foundation and conceptual framework of this research as a guide to understand teachers' ability to manage their classrooms well under all circumstances. Gage and MacSuga-Gage (2017) expressed the basis of student success relies on effective classroom management. Having a successful classroom management

system in place ensured the results of the survey were not misinterpreted by improper classroom management.

Both the survey and the focus group discussion gathered data regarding the classroom management abilities of those responding. All participants asked to rate the statement, “My classroom is well-managed” agreed or strongly agreed with the statement. This indicated teachers’ ability and confidence level in their classroom management techniques were strong and on a consistent basis, their classes were well managed.

Where and when they received training was also important to understand. Gage and MacSuga-Gage (2017) and Yurtseven (2017) expressed the need for a successful classroom in order to keep job satisfaction high, keeping good teachers teaching. Without good classroom management, teachers were more likely to give up within the first five years of beginning teaching (Kratochwill, 2018; Lew & Nelson, 2016).

Over 85% of survey participants and focus group members felt they received proper training through college courses or professional development. However, data obtained from other questions in the survey and focus group indicated educators received better training in classroom management through a hands-on approach. More specifically, when asked to respond to the statement, “I learned how to manage my classroom on my own with a hands-on approach,” 96% of participants responded with agree or strongly agree while almost 4% remained neutral. Further, Participant 2 stated having confidence with the classes taken in college, however quickly realized the classes only provided written strategies without the practice or hands on portion of learning. The absence of hands-on training was debilitating to the classroom learning environment until the

missing piece were identified through collaboration with more experienced teachers. Yurtseven (2017) described the hands-on experience was the best learning opportunity for beginning educators.

Participants in the survey as well as the focus group felt they managed their classrooms well. However, they also felt they were not prepared in the area of classroom management before entering their own classrooms when beginning their career. Gage and MacSuga-Gage (2017) and Garwood et al. (2017), recognized the need for further teacher preparedness and training prior to entering the classroom on their own. Most beginning teachers enter the career field without experience and understanding of how to manage a classroom of students (Gage & MacSuga-Gage, 2017; Garwood et al., 2017). Focus group Participant 2 expressed the difficulty of figuring out classroom management on the first day of school in the very first class.

All three focus group participants had different expectations of their classroom management abilities prior to the first day of school. Focus group Participant 1 expressed the importance of student teaching. The hands-on approach, Participant 1 described, was the only way of receiving classroom management training. Yurtseven (2017) found the hands-on experience to be the best route in getting the training needed for a successful classroom management style. Participant 2 quickly learned, during the first year of teaching, classroom management was very important. Participant 2 explained:

> I started my first year of teaching without [classroom management] practices in place. I had learned about many strategies for classroom management but did not really know how to implement them… I started the year with mostly verbal positive reinforcement to encourage students to continue positive behaviors or

change their negative behaviors. I did not have a reward system or good time management. Therefore, another teacher came to help me.

Besides being educated in classroom management, focus group members indicated the importance of having a classroom management style that worked for the students; each year being a little bit different according to the needs of the students. Participant 3 clarified students need structure. When structure was not present, chaos was inevitable and students cannot learn (Gage et al., 2018; Sieberer-Nagler, 2016). Participant 2 described the classroom as a chaotic environment where students are unable to learn when there was not a structured classroom management system in place.

Students Affected by Weather

Ensuring strong classroom management was secure in the classroom was the basis for understanding if student behavior could be measured when the aspect of changing weather occurred. All participants indicated they had a good classroom management system in place. Therefore, participants could give valid opinions on changing weather effecting behavior. Gage et al. (2018) and Sieberer-Nagler (2016) explained the importance of classroom management systems being in place and consistently used for an optimal learning environment. However, when the weather changes, this study's statistical data, and opinions from educators revealed, student behavior in grades kindergarten through third-grade was more difficult to manage.

On a day where weather was changing, survey data from this study revealed most teachers believed their students' behavior was affected. Specifically, when asked to respond to a statement implying the weather did not have an impact on student behavior, 94% of participants in the survey disagreed or strongly disagreed with the statement.

With 94% of the surveyed population disagreeing, it revealed educators agreed that changes in the weather did have an impact on student behavior in the classroom. Barber (2020) and Braswell (2018) found changing weather affects both adults and children physically and mentally. As weather changes, the barometer changes as well, therefore changing the air pressure, and making some humans uncomfortable and irritable (Allarakha, 2021; Carlson, 2019).

According to focus group participants, changing weather creates an atmosphere inside the classroom where teachers felt their classroom management strategies were more difficult to manage during that time period. This research also provided data identifying student discipline issues were evident in the classroom when inclement weather was occurring. Survey participants indicated, more than 96%, when a storm was or was about to occur, disciplinary issues within the classroom increased. When asked about students getting extra excited during weather changes, almost 93% of survey participants agreed or strongly agreed. Further, focus group members also expressed noticing different types of behaviors occurring with different types of changing weather.

Different Weather, Different Behaviors

Research results from the focus group suggested different types of weather created different behavioral concerns with students' kindergarten through third-grade. Weather such as thunderstorms and wind, snowstorms or excessive rain, and excessive heat or cold were three of the categories in which survey and focus group participants noticed different behaviors in their students.

When the changing weather was due to a thunderstorm or wind, participants in this study believed when the weather was going to be stormy, their expectations of

discipline issues in their classrooms would increase as well. Allarakha (2021) explained as a storm goes into an area, the barometric pressure changes, and some people are affected in a negative way. Focus group Participant 1 described witnessing students having a higher level of anxiety during a thunderstorm or high winds due to the possibilities of a tornado or needing to seek shelter.

On days the weather is changing with a winter storm or excessive rain, data implies students' kindergarten through third-grade become extra excitable, irritable, and restless. Barber (2020) found the weather affects a person's mood, sometimes creating anxiousness or excitability. Focus group Participant 1 referenced snow being the main weather change affecting behavior in the classroom. "It [snow] is a huge deal, and the kids get so excited; they just want to see that snow." Participant 2 mentioned rain as making her class more restless. Focus group Participant 3 expressed students being irritable when there was a chance of not being able to go outside for recess or were inside for multiple days due to excessive rain or snow.

Quantitative data from this study indicated very cold or hot weather also had negative effects on students' kindergarten through third-grade as witnessed by participants. These behavioral issues included irritability and effected academic concentration levels. Focus group participants identified significant irritability during periods of cold weather. According to Barber (2020), and Harley (2018), cold weather and needing to remain inside for an extended period of time created sadness and depression for people in their studies. Some survey participants also indicated a lack of concentration during extreme hot weather.

Diagnosis of Autism

This study examined the relationship of changing weather and how it affected student behavior in grades kindergarten through third-grade. Additionally, this study sought to determine whether students diagnosed with Autism were affected differently than students not diagnosed with Autism. Simple changes in the environment, such as weather changes, were found by Fukuyama et al. (2017) and VanBuskirk and Simpson (2013), to affect students diagnosed with Autism negatively due to a hypersensitivity to their surroundings.

The quantitative data from this study did not support a significant difference between students diagnosed with Autism and students not diagnosed with Autism in grades kindergarten through third-grade in regard to negative behavior. However, the qualitative data collected during this research did indicate some students diagnosed with Autism had more difficulty with concentration during changing weather than students not diagnosed with Autism. According to Bolton et al. (2018) and Bolton et al. (2020), students diagnosed with Autism have more difficulty concentrating during weather changes due to a sensory overload or chaotic state. Further, students diagnosed with Autism may have more difficulty communicating their feelings to others during a chaotic state (Bolton et al., 2018; Bolton et al., 2020; Fukuyama et al., 2017).

Bolton et al. (2020) found during an unpredicted weather situation; a well-managed, well-structured classroom environment may not be enough for a student diagnosed with Autism to manage negative behaviors. Participants 1 and 3 had noticed changes in behavior in their students diagnosed with Autism due to changing weather, however, were able to overcome the negative behavior by understanding their students'

needs and following through with consistency. Participant 1 experienced students diagnosed with Autism as needing more time to talk about the situation and process what was happening during weather changes than students not diagnosed with Autism and a need for consistent reassurances that everything was going to be ok. Participant 3 added anxiety as a relevant behavior change observed in students diagnosed with Autism more than students not diagnosed with Autism. According to Rudy (2019), students diagnosed with Autism have more difficulty with focusing and communication during times of change such as a change in the weather, opposed to times when routines were consistent.

Focus group participants added experiences in regard to knowing their students' triggers. They identified the most relevant situation to trigger negative behavior in students diagnosed with Autism were changes in their daily schedules, people, and locations as well as school delays and early releases. Garwood et al. (2017) and Sieberer-Nagler (2016) found students diagnosed with Autism benefited and were able to cope with changing weather and environment when they had assistance coping with the unpredictable situations.

Implications for Practice

The findings of this mixed-methods study have shown significant relevance comparing student behavior and changing weather in kindergarten through third-grade. Several implications were identified for practice when considering students' behavior and changing weather. First, educators need further education prior to entering their careers in the area of classroom management. Second, teachers need to have a secure classroom management strategy that is secure and safe. Third, understanding how different changes in weather affects student learning is crucial to student success. Finally, flexibility and

the ability to change lesson plans in an instant with the threat of oncoming inclement weather is important for the well-being and management of anxiety within the classroom.

Educators Need Further Education Prior to Entering the Teaching Career Field in the Area of Classroom Management

The most difficult aspect of teaching indicated by teachers is classroom management (Alter & Haydon, 2017). Focus group participants agreed they did not receive enough classroom management training prior to entering the classroom; however, indicated they had a false sense of confidence before starting their first day of teaching. They quickly learned they needed more professional development to be successful. They specified most of what they learned was during the first years of being in the classroom. Focus group participant 1 explained, “I thought I was prepared, but quickly found I wasn’t very prepared.” Participant 2 included “I think I was prepared with a lot of strategies. But not so much how to implement those strategies.” Gage and MacSuga-Gage (2017) found new classroom teachers were thrown into a classroom and expected to have a classroom management structure in place, without adequate training.

Focus participant 2 expressed concerns about new teachers taking the alternative education certification route and not having the student teaching piece or preparation classes prior to being in the classroom. Further, Participant 2 personally felt prepared with a lot of strategies prior to the first-year teaching, however quickly learned there was a lack of knowledge for implementing those strategies. According to Sieberer-Nagler (2016), optimal classroom management is implemented with as few disruptions as possible in order to maximize the learning opportunities. When teachers do not feel prepared, or have a false sense of being prepared, the beginning of the year will not go

smoothly for developing a highly functional learning environment, as expressed by focus group Participant 1.

Focus group Participant 2 made the statement, “I had no idea how to start my classroom management. I had never seen the beginning part of when you implement [classroom] management procedures.” Studies by Lew and Nelson (2016) and Sieberer-Nagler (2016) found effective classroom management begins on the very first day of school. Also, Lew and Nelson (2016) found the success of classroom management predicts student success and it begins on day one. Therefore, if teachers started their student teaching before the students showed up on the first day of school, their classroom management techniques could be monitored by an experienced teacher. Participant 1 described the student teaching portion of education as the most important part due to having an experienced, highly qualified, teacher available for guidance.

Teachers Need to Have a Classroom Management Strategy That is Secure and Safe

According to Gage et al. (2018) classroom management is imperative to the success of a classroom. Consistency is necessary to allow for the most retention of presented material (Gage et al., 2018; Sieberer-Nagler, 2016). Focus group members expressed the necessity of continuous and consistent proper classroom management. According to focus group Participant 2, “A classroom that does not have good classroom management loses a lot of instructional and work time by having to redirect more often.”

Continuous professional development in the area of classroom management was found by Garwood et al. (2017) to be beneficial to educators. Focus group Participant 3 expressed shock during their first year of teaching, realizing they did not have a complete understanding of how successful classroom management was implicated. Alter and

Haydon (2017) and Garwood et al. (2017) found most classroom management skills were learned through books, not allowing practice prior to being in the classroom, therefore, giving new educators a false sense of classroom management understanding. Survey participants indicated most of their classroom management strategies were learned through professional development. Studies by Garwood et al. (2017) and Yurtseven (2017) indicated the necessity of professional development in the area of classroom management through continuing education for all educators.

Hamilton (2017) expressed knowing what caused the distractions for students was the best way to overcome difficulties with classroom management. Participant 3 expressed the need to know students and build a relationship with them in order to understand the cause of the behavior before a behavior can be changed. Hamilton (2017) and Sanli (2019) found by understanding a student's background and the reasons for their behavior an educator might be better able to gain trust with the student through communication and then help the student to adjust the negative behavior.

Participant 3 emphasized safety and security and having a structured environment was essential for student success. Participant 1 added, having clear expectations for student behavior, practicing those expectations on a daily basis, and being consistent with follow through, is imperative for classroom management success. Garwood et al. (2017) and Sieberer-Nagler (2016) identified a successful classroom as having routines in place that were practiced and consistently followed.

Understanding How the Weather Affects Students is Necessary for Classroom Management Success

Teachers need to have a classroom management strategy that is secure and safe in place in order to be prepared for an unexpected change in weather (Bolton et al., 2020). According to survey participants, a change in weather affected their classroom behavior making it more difficult to properly teach the class. Focus group Participants 1 and 3 expressed the necessity of knowing their students and how changes in environment or weather could affect classroom management then properly adjust plans or activities to keep learning optimal. According to studies by Nicholas et al. (2018) and Sieberer-Nagler (2016), successful classroom management was most effective when teachers understood their students and could help them cope with unpredictable situations.

If teachers have an alternative plan on stand-by, continuous classroom management will remain in effect (Burden, 2020). Participant 1 explained, “They just want to see the snow and get really excited. [Therefore] they just want to talk about it.” Participant 3 added, “[When it snows] we will go outside depending on if they have jackets and talk… we will try to make a mini-lesson out of it.” According to Hopper (2019), communicating with students about environmental changes as they occurred during the change has been found to be an effective classroom management strategy that allows learning to continue.

Flexibility and the Ability to Change Lesson Plans in an Instant with the Threat of Oncoming Inclement Weather

Flexibility and the ability to change lesson plans in an instant with the threat of oncoming inclement weather is important for the well-being and management of anxiety

within the classroom (Burden, 2020). Due to the chaotic state of students diagnosed with Autism during weather changes, described in research by Bolton et al. (2020), Bolton et al. (2018) and Fukuyama et al. (2017), more disciplinary issues may increase in the classroom during these times. Participant 3 emphasized the necessity of communication and understanding student needs in order to manage behaviors in the classroom.

When teachers remain flexible with their lesson plans, classroom flow will go more smoothly (Burden, 2020). Lew and Nelson (2016) expressed, with teacher flexibility, students will have less of a disruption when the weather changes. According to focus group Participant 2, with the ability of the teacher to transition without interruption, knowing and understanding their students' needs and worries, and adjusting lesson plans when they see a change, teachers will be able to maintain positive classroom management for a successful classroom atmosphere. Focus group Participant 1 expressed a spontaneous change in lesson plans was necessary during weather changes to keep the students focused on learning. Lesson plans were changed into weather talks or question and answer opportunities.

Recommendations for Future Research

This mixed methods study focused on opinions of teachers teaching grades kindergarten through third-grade regarding how the weather affects student behaviors in the classroom. The results of this study give the understanding that teacher opinions agreed the weather does affect student behaviors; however, further research is suggested to understand if concrete data would back up the opinions of educators. Additionally, further research is needed to understand the differences between excitement-related

behavioral issues versus stress-related behavioral issues in students. Finally, a larger population and sample size would be beneficial.

More Extensive Scientific Weather Data to Analyze with Teacher Perceptions

The findings of this study suggested that teacher opinions agreed the weather affected student behavior in grades kindergarten through third-grade. Further research involving gathering data from a weather station and matching incoming weather with the number of referrals an office receives would be beneficial. On a daily basis, a researcher could look at the weather patterns, then when a storm was approaching and the barometric pressure changed, the researcher could count the number of referrals that came into the office during that point in time.

Differences Between Excited Behavior and Stressed or Negative Behavior

Focus group participants expressed behaviors seen during weather changes including excitement, anxiousness, and anxiety. Understanding which kind of weather created which feelings and behaviors in students would be beneficial to lesson planning and planning for future classroom management. Teachers could manage behaviors by changing their lessons according to the changing weather type.

Larger Population and Sample Size

Due to COVID-19, Lizana and Vega-Fernadez (2021) found teacher burnout increased due to the necessity of working longer hours and fewer rewards. Upon returning to the classroom after the Pandemic, WeiBenfels et al. (2021) found teacher self-efficacy had diminished; therefore, the desire for doing more for student benefit had also diminished. Due to the small sample size of this study, further research would benefit from a larger population and sample size. Greater participation would solidify or

negate the case study findings of this research, therefore ensuring proper measures are in place when it comes to classroom management in grades kindergarten through third-grade and changes in the weather.

Add Open-ended Questions to the Survey

This study used a Likert-Scale Survey to collect data. During analyzation of the survey data, and comparison with data gathered from focus group members, questions arose regarding survey participants feeling the same as the focus group members. With open ended questioning in the survey, opportunity would be provided for survey participants to give detailed opinions on some of the same questions discussed with the focus group members. According to Creswell and Creswell (2018) and Fink (2017), open-ended and loosely structured questioning allows participants flexibility and the ability to share their opinions.

Summary

Chapter Five included the findings and conclusions for this mixed methods study. Teacher opinions of weather affecting students' behavioral situations in the classroom were presented in detail. Major themes identified included classroom management training prior to beginning the teaching career was minimal, teachers believed their students in kindergarten through third-grade were affected by the weather, different types of weather might have caused different emotions and behaviors in kindergarten through third-grade students, and the behaviors of students diagnosed with Autism were not significantly different from students not diagnosed with Autism.

Four implications for practice were presented. These implications included the need for educators to have access to further education prior to entering their careers in the

area of classroom management, the need for teachers to have a classroom management strategy that is secure and safe and understanding how different changes in weather affects student learning was crucial to future student success. Finally, flexibility and the ability for a teacher to change lesson plans in an instant with the threat of oncoming inclement weather.

Four research recommendations were provided. These recommendations included gathering more extensive scientific weather data to analyze with teacher perceptions, gaining a better understanding of which weather changes caused specific feelings and behaviors in students, and having a larger population and sample size. The final recommendation was to add open-ended questions to the survey in order to better clarify survey responses and compare responses to those of focus group discussion participants.

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Appendix A

District Permission Letter

Date: XX/XX/XXXX
RE: Permission to Conduct Research in xxxxxx School District
To: xxxx, Superintendent of Schools

I am writing to request permission to conduct research in the xxxxx School District. I am currently pursuing my doctorate through Lindenwood University and am in the process of writing my dissertation. The study is entitled: The Effect Changes in the Weather have on Kindergarten through Third-Grade Students' Behavior. I am asking permission to invite all educators who are currently teaching students in kindergarten through third-grade to participate in a survey. Additionally, I would like to invite six educators now teaching students kindergarten through third-grade, with at least one teacher having taught a student diagnosed with Autism, to participate in a virtual focus group discussion. The focus group will be audio- or video-recorded and will last approximately 45-minutes. The purpose of the focus group is to gain teacher opinions about their experiences with student behaviors during changes in the weather. The building principal for these grade levels would be asked to send to allow me to virtually meet with building teachers to discuss my study and answer any questions they might have. I will also ask the building principals to send the survey link to teachers in their building. Finally, the building principal would also be asked to select two to three the focus group participants.

If you agree, please sign below, scan this page, and email to me, *Sara Calderon*, at smc165@lindenwood.edu.

Your approval to conduct this study will be greatly appreciated. I would be happy to answer any questions or concerns you may have regarding this study.

Sincerely,
Sara Calderon
Doctoral Student at Lindenwood University
Approved by:

_____
Print name and title here

_____ _____
Signature Date

Appendix B

Introductory Letter to Building Principals

Date: XXXXXX

Dear XXX,

My name is Sara Calderon, and I am requesting your assistance in my doctoral dissertation research project at Lindenwood University. The study is entitled: *The Effect Changes in the Weather have on Kindergarten through Third-Grade Students' Behavior.* Participants will be asked to participate in a 10-minute survey and some participants will be asked to participate in a 45-minute focus group discussion. The purpose of the study is to gain teacher opinions about their experiences with student behaviors during changes in the weather. I have been granted permission to conduct research in the XXXX Public School District. In order to conduct my research, I would like to request your assistance by allowing me to address your kindergarten through third-grade teachers during a faculty meeting to discuss my study and request their participation. After the meeting, I will ask you to forward your teachers an email including a letter of participation, the research information sheet, and the survey link. This would include all regular education, special education, Title I, art, music, physical education, any other teachers teaching students in kindergarten through third-grade.

For the second part of my research, I am requesting that you select and email me the names and email addresses of two or three classroom teachers who teach students in kindergarten through third-grade. These teachers will be asked to participate in a 45-minute focus group discussion which will include participants from both district elementary buildings. I ask that you select a sample that includes at least one teacher that has or has had students with a diagnosis of Autism in their classroom.

All information obtained through this research will be reported anonymously. Alphanumeric codes will be used to lessen the possibility of identifying interview participants. Interviewees will indicate consent verbally prior to participating in the focus group discussion.

Thank you in advance for assisting in this study. I hope the results of this study will identify behaviors brought on by changes in weather patterns. If you have questions, you can contact me at smc165@lindenwood.edu. Dr. Shelly Fransen, the dissertation chair for this research project, may be contacted at sfransen@lindenwood.edu.

Thank you for your time,

Sara Calderon
Doctoral Candidate
Lindenwood University

Appendix C

Letter of Participation for Survey

Date: XXXXXX

Dear Prospective Survey Participants,

My name is Sara Calderon, and I am requesting your participation in my doctoral dissertation research project at Lindenwood University. The study is entitled: *The Effect Changes in the Weather have on Kindergarten through Third-Grade Students' Behavior*. Participants will be asked to complete a 10-minute online survey. The purpose of the survey is to gain teacher opinions about their experiences with student behaviors during changes in the weather.

I have received permission to conduct research from the Burkburnett Independent School District. In order to conduct my research, I would like to invite all educators currently teaching students in kindergarten through third-grade to participate in the completion of an online survey at the following link: xxxxxxxxxx. The survey should take 10 minutes or less to complete.

Your participation in this research study is voluntary, and you may withdraw at any time. All information obtained through this research will be reported anonymously. I will only receive the anonymous data collected from the survey. Certified teacher participants will indicate consent by completing the research instrument but may also review the informed consent form attached to this email.

Thank you in advance to those willing to participate and support this study. I hope the results of this study will identify if there is a relationship between student behavior and changes in the weather. If you have questions, you can contact me at smc165@lindenwood.edu. Dr. Shelly Fransen, the dissertation chair for this research project, may be contacted at sfransen@lindenwood.edu.

Thank you for your time,

Sara Calderon
Doctoral Candidate
Lindenwood University

Appendix D

LINDENWOOD

Research Information Sheet

You are being asked to participate in a research study. We are doing this study to determine if there is a relationship between student behavior and changes in the weather. During this study you will be asked to respond to survey statements and questions regarding your perceptions of student behavior due to changes in the weather. More specific statements and questions will be asked regarding the effect of weather changes and students in your classroom who have been diagnosed with Autism. Two to three teachers from each elementary building in the district will also be asked to participate in a focus group discussion. The survey will take about 5 minutes to complete and the focus group discussion will take approximately 45 minutes to complete.

Your participation is voluntary. You may choose not to participate or withdraw at any time.

There are no risks from participating in this project. There are no direct benefits for you participating in this study.

We are collecting data that could identify you, such as an email address. Every effort will be made to keep your information secure and confidential. Only members of the research team will be able to see your data.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

Who can I contact with questions?

If you have concerns or complaints about this project, please use the following contact information:

Sara Calderon at smc165@lindenwood.edu

Dr. Shelly Fransen at sfransen@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

Appendix E

Survey Introduction and Definitions

Thank you for participating in this survey. The purpose of this study is to determine if there is a relationship between student behavior and changes in the weather. You may find the following definitions helpful when responding to the survey statements.

Inclement weather- temperatures (including heat index and wind chill) above 90 or below 20 degrees Fahrenheit, thunderstorms, heavy rain, winter storms.
Winter storm- actively snowing, sleeting, or icing, with accumulation and wind blowing.
Weather is changing- drop or rise in barometric pressure, tornado watches, the sky darkens with clouds or brightens with the sun, anticipated snow day for the following day, a thunderstorm occurs for part of the day, temperature rising or falling 15 degrees Fahrenheit or more.

Survey Statements

Demographic questions

1. How many years have you been teaching?

   0-1 2-5 6-10 11-20 21+

2. What grade do you currently teach?

   kindergarten first second third

3. What do you teach?

   General Education Special Education Art Physical Education Music Title 1 other

4. Do you have a student diagnosed with Autism currently in your classroom?

   Yes No

5. Have you had a student or students, in past years of your teaching career, diagnosed with Autism in your classroom?

   Yes No

Content Statements

Please rate the following statements on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1.1 My classroom is well-managed.

1 2 3 4 5

1.2 On a typical day, my students are well-behaved.

1 2 3 4 5

1.3 I attended college courses or professional development that taught me about classroom management.

1 2 3 4 5

1.4 I learned how to manage my classroom on my own with a hands-on approach.

1 2 3 4 5

1.5 Changes in the weather do not have an effect on student behaviors in my classroom.

1 2 3 4 5

1.6 My students have more discipline issues on days when a thunderstorm, winter storm, or other inclement weather occurs.

1 2 3 4 5

1.7 My students are more excitable when the weather is changing.

1 2 3 4 5

1.8 My students' behavior changes before a winter storm.

1 2 3 4 5

1.9 My students are able to concentrate on academics when the temperature/heat index is above 90 degrees.

1 2 3 4 5

The following statements are for teachers who have or have had a student diagnosed with Autism in a class.

2.1 My students diagnosed with Autism are more aware of weather changes, than my students not diagnosed with Autism.

1 2 3 4 5

2.2 My students diagnosed with Autism are more excitable when the sun is shining and it is between 65 and 80 degrees Fahrenheit, than my students not diagnosed with Autism.

1 2 3 4 5

2.3 My students diagnosed with Autism are more excitable during a thunderstorm, winter storm, or other inclement weather, than my students not diagnosed with Autism.

1 2 3 4 5

2.4 My students diagnosed with Autism become more agitated, when the weather is changing, than my students not diagnosed with Autism.

1 2 3 4 5

2.5 My students diagnosed with Autism have a harder time concentrating on academics when the weather is changing, than my students not diagnosed with Autism.

1 2 3 4 5

2.6 My students diagnosed with Autism have more discipline issues on days when the weather is changing, than my students not diagnosed with Autism.

1 2 3 4 5

Appendix F

Letter of Participation for Focus Groups

Date: XXXXXX

Dear Teachers,

My name is Sara Calderon, and I am requesting your participation in my doctoral dissertation research project at Lindenwood University. The study is entitled: The Effect Changes in the Weather have on Kindergarten through Third-Grade Students' Behavior. Participants will be asked to participate in a 45-minute focus group discussion which will be audio- or video-recorded. The purpose of the focus group is to gain teacher opinions about their experiences with student behaviors during changes in the weather.

I have been granted permission to conduct research in the Burkburnett Independent School District. In order to conduct my research, I would like to invite you to participate in a focus group discussion via video conference. The focus group should take 45-minutes or less to complete and will include teachers from all three district elementary buildings.

Your participation in this research study is voluntary, and you may withdraw at any time. All information obtained through this research will be reported anonymously. Alphanumeric codes will be used to lessen the possibility of identifying interview participants. Interviewees will indicate consent verbally prior to the focus group discussion. A copy of the research information sheet is included with this letter.

Thank you in advance to those willing to participate and support this study. I hope the results of this study will identify behaviors brought on by changes in weather patterns. If you have questions, you can contact me at smc165@lindenwood.edu. Dr. Shelly Fransen, the dissertation chair for this research project, may be contacted at sfransen@lindenwood.edu.

Thank you for your time,

Sara Calderon
Doctoral Candidate
Lindenwood University

Appendix G

LINDENWOOD

Research Study Consent Form

The Effect Changes in the Weather Have on Kindergarten Through Third-Grade Students' Behavior.

Before reading this consent form, please know:

- Your decision to participate is your choice
- You will have time to think about the study
- You will be able to withdraw from this study at any time
- You are free to ask questions about the study at any time

After reading this consent form, we hope that you will know:

- Why we are conducting this study
- What you will be required to do
- What are the possible risks and benefits of the study
- What alternatives are available, if the study involves treatment or therapy
- What to do if you have questions or concerns during the study

Basic information about this study:

- We are interested in learning about any effects the weather may have on student behavior in your classroom.
- You will have the opportunity to participate in either a focus group discussion or complete a survey regarding your experiences with weather affecting students' behaviors in the classroom.
- There are no risks when participating in this study. All identities will remain anonymous and raw data will be kept for a period of three years.

LINDENWOOD

Research Study Consent Form

The Effect Changes in the Weather Have on Kindergarten Through Third-Grade Students' Behavior.

You are asked to participate in a research study being conducted by Sara Calderon, under the guidance of Dr. Shelly Fransen at Lindenwood University. Being in a research study is voluntary, and you are free to stop at any time. Before you choose to participate, you are free to discuss this research study with family, friends, or a physician. Do not feel like you must join this study until all of your questions or concerns are answered. If you decide to participate, you will be asked to sign this form.

Why is this research being conducted?

We are doing this study to learn about any effects the weather may have on student behavior in the classroom. We will be asking about 12 teachers to participate in focus groups and about 158 teachers to complete a survey.

What am I being asked to do?

Those who participate in the focus group will be asked to join a virtual conference. A series of questions will be asked to promote discussion between the focus group members regarding student behaviors being affected by changes in the weather. The session will be audio- or video- recorded and then transcribed. Finally, the transcription will be sent to discussion group participants to ensure accuracy.

How long will I be in this study?

The focus group will take approximately 45 minutes of active discussion. The study will conclude at the end of the Fall Semester of 2022.

What are the risks of this study?

Privacy and Confidentiality

We are collecting data that could identify you, such as your email address. Every effort will be made to keep your information secure. Only members of the research team will be able to see any data that may identify you.

What are the benefits of this study?

You will receive no direct benefits for completing this survey. We hope what we learn may benefit other people in the future.

Will I receive any compensation?

There will be no compensation to participate in this research.

What if I do not choose to participate in this research?

It is always your choice to participate in this study. You may withdraw at any time. You may choose not to answer any questions or perform tasks that make you uncomfortable. If you decide to withdraw, you will not receive any penalty or loss of benefits. If you would like to withdraw from a study, please use the contact information found at the end of this form.

What if new information becomes available about the study?
During the course of this study, we may find information that could be important to you and your decision to participate in this research. We will notify you as soon as possible if such information becomes available.
How will you keep my information private?
We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.
How can I withdraw from this study?
Notify the research team immediately if you would like to withdraw from this research study.
Who can I contact with questions or concerns?
If you have any questions about your rights as a participant in this research or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the Lindenwood University Institutional Review Board Director, Michael Leary, at (636) 949-4730 or mleary@lindenwood.edu. You can contact the researcher, Sara Calderon directly at smc165@lindenwood.edu. You may also contact Dr. Shelly Fransen at sfransen@lindenwood.edu

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

Appendix H

Focus Group Questions

Demographic Questions:

1. How many years have you been teaching?
2. What grade do you currently teach?
3. Are you a general education teacher or specials teacher? If a specials teacher, what do you teach?
4. Do you have a student diagnosed with Autism currently in your classroom?
5. Have you had a student or students, in past years of your teaching career, diagnosed with Autism in your classroom?

Content Questions:

1. In what ways do you feel you were prepared for classroom management before you started teaching?
2. Where did you receive the preparation for your classroom management and how effective was it?
3. What kinds of student behaviors do you witness on a typical day at school?
4. Do these behaviors seem to be worse during changes in the weather and if so, how?
5. What types of student behaviors seem to be more prevalent during weather changes?
6. What are some strategies that you use during changes in the weather, such as rain, snow, extreme heat or cold to offset poor student choices regarding their behavior?
7. If you have or have had a student diagnosed with Autism, do you see different behaviors from those students, if so, what are those behaviors?
8. What seems to trigger negative behaviors, in students you have taught, diagnosed with Autism? When do these behaviors occur the most?

Vita

Sara Calderon realized her career aspirations in education at the onset of her collegiate years while attending Lansing Community College as a freshman in 1996. After completing her associate degree within two years, Sara immediately transitioned to Western Michigan University, where in 2002 she acquired her bachelor's degree in general studies. She would then spend the following two years at Olivet College fulfilling her teaching certifications. Sara was hired as a Florida elementary school teacher the following year, while accompanying her active-duty husband on assignment at a local military base.

The Calderon family endured several transitions associated with various military assignments from Florida to Colorado, Texas, Missouri, back to Florida, Oklahoma, and Virginia before finally settling again in Texas. Sara sustained continuous employment within her career field as an educator. With each academic year, she maintained a full-time status as a teacher, at nearly every elementary and middle school grade level, and served as an elementary assistant principal before her current assignment as a Texas high school assistant principal.

To broaden her perspectives, improve as an educator, and offer more to the education community, Sara pursued both a master's and specialist's degree in educational and school leadership from Lindenwood University, which she accomplished in between the military family moves and transitions. Today, she applies her post-graduate level skills, complemented with nearly two decades of continuous experience in education, to her current capacity as an administrator at Burkburnett High School in Texas.