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Autism Awareness: Improving Understanding and Building Inclusive Playground Engagement

An Action Research Project

Presented to

The Faculty of the Kalmanovitz School of Education

Saint Mary's College of California

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Teaching Leadership

By

Diana Nickelson

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This action research project, written under the direction of the candidate's master's project advisory committee and approved by members of the committee, has been presented to and accepted by the faculty of the Kalmanovitz School of Education, in partial fulfillment of the requirements for the Master of Arts in Teaching Leadership degree.

Candidate: Diana Nickelson

Date

Master's Project Advisory Committee:

Research Advisor: Heidimarie Rambo, Ph.D.

Date

Faculty Advisor: Monique Lane, Ph.D.

Date

Program Director: Monique Lane, Ph.D.

Date

Dean: Carol Ann Gittens, Ph.D.

Date

Abstract

Autism Awareness: Improving Understanding and Inclusive Playground Engagement

By

Diana Nickelson

Master of Arts in Teaching Leadership

Saint Mary's College of California, 2023

Heidimarie Rambo, Ph. D., Research Advisor

On an elementary school playground, neurotypical students engage in cooperative games like basketball or four square. In contrast, students with autism spectrum disorder (ASD) often prefer independent play on fixed equipment, such as swings and play structure bars. This project evaluated the impact of an autism awareness unit on neurotypical students, enhancing their understanding and engagement with autistic peers on the playground. I involved 36 neurotypical third-grade students from a suburban elementary school. Data collection involved exit tickets and systematic playground observations. Participants showed enhanced understanding, improved attitudes toward students with special needs, and increased playground engagement. These findings impact autistic students' playground engagement. Recommendations include teaching within a broader ability awareness framework and emphasizing participation rather than interactions. By providing accurate information, autism education yields positive outcomes addressing misunderstandings, and fostering empathy toward students with special needs.

Dedication

Dedicated to my precious students with special needs, whose desire to play and participate in campus activities inspired this action research project. And to the Gators, class of 2024, whom I met in first grade, in your bedrooms with your dogs and dads and dishes, throwing sock balls and catching your stuffies: thank you for sharing your hearts and working so hard to make our school an inclusive community.

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Table of Contents

	Page
List of Figures.....	ix
Chapter	
I. Introduction	1
Statement of the Problem	2
Purpose of the Research	6
Action Research Question	8
Limitations.....	8
Positionality of the Researcher	8
Definitions of Terms.....	10
Implications	11
II. Literature Review	12
Overview of Literature Review	13
Theoretical Rationale.....	14
Review of Related Research.....	20
Summary.....	36
III. Methods	38
Setting.....	40
Demographics of the Classroom	42
Data Collection Strategies	43
Procedures	47
Plan for Data Analysis.....	51
Summary.....	53
IV. Findings	55
Overview of Methods and Data Collection	56
Demographics of the Participants.....	57
<i>Analysis of the Pre-Post Autism Awareness Ticket</i>	58
<i>Analysis of the Autism KWL Chart</i>	60
<i>Analysis of the Lesson Exit Tickets</i>	62
<i>Analysis of the Systematic Observation Form of Playground Interactions</i>	63
Summary.....	67

V. Conclusions and Next Steps	68
Summary of Findings	70
Interpretation of Findings	74
<i>Peer Education Influences Understanding</i>	75
<i>Deeper Understanding Impacts Attitudes</i>	77
<i>Exposure Improves Engagement</i>	78
<i>Additional Elements to Consider</i>	79
Reflections of Limitations	80
Plan for Future Action	81
Summary.....	82
References	84
Appendices	88
A. Pre-Post Autism Awareness Ticket.....	89
B. Group Autism KWL Chart.....	90
C. Lesson Exit Ticket	91
D. Systematic Observation on the Playground Field Notes.....	92
E. Lesson Plan 1	93
F. Lesson Plan 2	94
G. Lesson Plan 3	95
H. Lesson Plan 4	96
I. The Autism Engagement Continuum.....	97

List of Figures

Figure

1. Pre-Post Autism Awareness Ticket	59
2. Autism KWL Chart Responses	61
3. Lesson Exit Ticket Responses	63
4. Systematic Observation Results	66

Chapter I

Introduction

An elementary school playground is often full of students playing with their peers. While neurotypical (NT) peers negotiate social communication over games such as basketball or Four Square, students identified with autism spectrum disorder (ASD), also known as autism, tend to play on fixed equipment independent of social interaction. They swing on swings, hang on play structure bars, or walk around the blacktop alone. While students with autism are centering themselves by hanging or calming themselves by swinging at recess, NT peers can become impatient and push by students with ASD or stop their swing and tell them to get off. Including students with ASD in recess activities promotes social justice and equity. Including all students with special needs fosters a sense of belonging, improves social development, builds empathy, reduces stigma, and cultivates essential life skills. Successful inclusion ultimately celebrates the diversity of the community.

No two students identified with ASD exhibit the same behavior. The range of functions and characteristics of students with ASD are unique to each child; thus, the term *spectrum disorder* is used. Maenner et al. (2023) define *autism* as: “A developmental disability characterized by persistent impairments in social interaction and the presence of restricted, repetitive patterns of behaviors, interests, or activities that can cause a wide array of difficulties in social interaction, communication, and participation in daily activities” (p.1). When students with autism are overstimulated, they can behave aggressively or exhibit unusual behavior. These behaviors can be alarming to an NT peer who does not understand why students with ASD need to regulate sensory input or persevere on one activity for a period of time and do not quickly move to the next activity.

The social and academic inclusion of students with ASD is a moral issue, an issue of social justice and equity. The entire school makeup, including administration, teachers, support staff, students, and parents are impacted by inclusion. Teaching students to celebrate diversity and recognize one another's uniqueness is critical to creating a sense of belonging and community and fostering successful inclusion. Psychosocial interventions and social skill training programs are designed to teach students with autism how to interact and communicate with other students; however, few programs teach what autism is or educate NT peers on how to engage with autistic students.

Statement of the Problem

The public-school population has changed significantly in the past several years, there is an overwhelming number of students qualifying for special educational services in the United States. Eligibility for educational services is contingent upon 13 identified conditions. Special education services are extended to students with identified special needs if it is determined that they are unable to attain meaningful educational progress within the general education classroom without the provision of substantial accommodations or requisite support. Within these identified conditions, the prevalence of students identified with autism spectrum disorder (ASD) or autism, emerges as a category experiencing significant growth. In the article, *The Number of U.S. Students in Special Education Ticks Upward*, Samuels writes, "The number of students identified with Autism Spectrum Disorder (ASD) in public schools has grown 165% over the past decade (Samuels, 2016).

The Autism and Developmental Disabilities Monitoring (ADDM) Network, a part of the Center for Disease Control and Prevention, provides estimates of the prevalence of autism spectrum disorder (ASD) among eight-year-old children in the United States. Due to increased

awareness and better identification, the number of students identified with disabilities, specifically autism spectrum disorder (ASD), has grown significantly, “During the past two decades, ASD prevalence estimates of children aged eight years from the ADDM Network have increased, from 6.7 (one in 150) per 1,000 in 2000 to 23.0 (one in 44) in 2018” (Maenner et al., 2023, p.3). In 2020, the data showed an overall ASD prevalence of 27.6 per 1,000 children aged eight years or one in 36 children with ASD. These data are valuable for service providers, educators, communities, researchers, and policymakers to track trends and ensure equitable allocation of services and support for children with ASD (Maenner et al., 2023).

Autism, also known as autism spectrum disorder (ASD), and individuals with this diagnosis, commonly referred to as neurodiverse students, represent a complex developmental disability that profoundly influences the way individuals perceive and interact with the world. It is “marked by impairments in social communication and interaction as well as restricted or repetitive behavior, interests, or activities” (*An Educator’s Guide to Autism | OAR, 2022 p.5*). Some common effects include experiencing sensory processing differences, finding stimuli overwhelming and distressing, struggling with understanding social cues, exhibiting a need for routine, and engaging in repetitive movements or verbal expressions. It is crucial to acknowledge and celebrate the diversity that individuals with ASD bring to their communities. By understanding and appreciating their unique perspectives and abilities, we can enrich the school culture and enhance the lives of all students.

Prior to 1975, students with special needs were excluded from public schools. Those with disabilities had to find instruction in private institutions. The Education for All Handicapped Children Act was enacted in 1975 to provide public education to all students, including those with disabilities (CDC, 2023). The law was reauthorized in 1990 and renamed the Individuals

with Disabilities Education Act (IDEA). It states that all children with disabilities must be educated with their nondisabled peers to the maximum extent appropriate in the least restrictive environment (LRE). Modifications are made to ensure that all children are afforded the best educational opportunities, and appropriate support is provided to the student with special needs in the general education classroom with typically developing peers (Reynolds & Fletcher-Janzen, 2007).

Students with disabilities have the right to be included in general education classrooms and to receive equitable accommodations that enable them to access the curriculum. According to IDEA, one goal of inclusive education is social participation amongst ASD and NT students (Reynolds & Fletcher-Janzen, 2007), and the playground is an ideal place to implement this goal. However, inclusion alone does not ensure that students with autism are fully integrated, welcomed, respected, and valued within the community.

In my experience as a physical education teacher, there is little interaction between neurotypical and neurodiverse students at recess. Many neurodiverse students play independently. Parallel play happens between ND and NT students on the swings, bars, or slide, but few ND students are engaged with NT students in continuous conversation or play. Teachers instruct ASD students on socializing with others; however, NT students lack the information, training, or tools to interact with autistic students. We need intentional instruction to bridge this gap and enhance the acceptance of students with ASD.

In an inclusive school setting, all students are included in academic and social environments. Peer attitudes are mixed toward students with autism. On the playground, ASD students can be overstimulated, and they may scream or flap their arms. Due to social communication deficits ASD students exhibit, NT students report they do not understand their

autistic buddies' needs or feelings and report they feel frightened and unsure how to respond. Peers with previous experience outside of school or in the classroom typically have neutral to positive attitudes towards students with ASD (de Boer et al., 2012); however, students without exposure or education often have misconceptions and make inaccurate conclusions.

This reveals a gap between legislative intent, ethical principles of inclusive education, and the actual experiences of autistic students who often face isolation and exclusion. While legislation has been established to promote inclusion and prevent discrimination, these ideals still need to be realized in practice. To cultivate an inclusive environment for all children, implementing an autism awareness unit of study is essential. This initiative aims to foster understanding, acceptance, empathy, and interactive engagement while celebrating diversity. Research underscores the significance of peer education and awareness interventions in enhancing the social experiences of students with ASD. For instance, a study by Campbell et al. (2019) found that, "Peer education and awareness interventions may improve the social experiences of students with ASD, such as improving social acceptance" (p. 146).

I teach at a mid-size TK-5 elementary school with a culturally diverse population. This population also includes educational diversity, including a continuous TK-5 special education program serving moderate to severe needs. These 58 students spend 60% of their day with NT peers. Many of these students are identified with autism spectrum disorder (ASD), and there are many more students with a medical diagnosis of autism who are not educationally determined to need special education. These students spend 100% of their day in the general education classroom. There is a need at my site for all stakeholders to have an awareness and understanding of autism spectrum disorder.

Including students with disabilities in the general education setting is a shared responsibility among stakeholders, including general education students; therefore, we must educate our NT peers to understand why students with autism behave the way they do and give NT peers tools to navigate interactions on the playground. Campbell et al. (2004) report, “The cognitive attitudes and behavioral intentions of primary-age children appeared to be positively affected by an educational message, combining descriptive and explanatory information about ASD” (p.). A supportive school culture that values diversity, complies with legal and ethical inclusion principles, and prioritizes the well-being of all students is crucial. Inclusion is vital for equity, ensuring equal access and a more inclusive environment.

Teaching about autism with an emphasis on equity is crucial for reinforcing the rights of students with autism to be educated alongside their neurotypical peers in the least restrictive setting. This educational approach goes beyond awareness, aiming for acceptance and understanding. Providing accurate information helps prevent inaccurate judgments, fosters empathy, and recognizes individuality and improves attitudes towards peers with disabilities (Di Maggio et al., 2022 p.4). Understanding autism spectrum disorder sets the stage for positive social inclusion and contributes to creating a culture characterized by empathy and respect.

This education encourages neurotypical peers to actively engage and interact with students with autism spectrum disorder (ASD), aligning with the intent of inclusive playgrounds as advocated by the law. The ultimate goal is to establish an environment where every student, regardless of neurodiversity, feels acknowledged, understood, and included.

Purpose of Research

On the playground, neurotypical (NT) students often demonstrate limited regard for their peers with autism spectrum disorder (ASD), leading to minimal interaction. Some NT students

express fear and a perception of unfairness, believing that those with ASD receive continuous adult assistance or are exempt from general rules. This research aimed to address these issues.

This action research study aimed to evaluate the effectiveness a unit of study on autism spectrum disorder (ASD) has on neurotypical (NT) peers, specifically how a unit of study taught to the third graders at my site builds understanding that creates awareness, increases empathy, and motivates NT peers to engage with ASD students on the playground.

This unit emphasizes students' rights to equitable education within an inclusive setting, teaching the significance of accommodation. It also highlights the value of inclusion for neurotypical students, providing them with tools to dispel fear while fostering genuine regard for their neurodiverse peers. The rich diversity on an elementary school playground calls for mutual understanding and acceptance. However, a gap exists between the legal imperative and the practice of inclusion on the playground, necessitating educational intervention.

Perhaps the most powerful tool to create a positive environment and increase positive social interactions between the child with autism and his or her peers is to educate the typically developing peers about autism spectrum disorder. Research shows that typically developing peers have more positive attitudes, increased understanding, and greater acceptance of children with autism when provided with clear, accurate, and straightforward information about the disorder. When educated about autism and specific strategies for effectively interacting with children with autism, they are more likely to have frequent and positive social interactions with them (An Educator's Guide to Autism | OAR, 2022).

The purpose of this research was to investigate the potential positive impact of educating neurotypical (NT) students about autism spectrum disorder (ASD) concerning comprehension and engagement with neurodiverse (ND) students. This action research project also aimed to

clarify the legal and ethical foundations of inclusion, enhance understanding of students with autism, and actively foster a school culture where all students are socially embraced and involved on the playground. The intervention involves class discussions, videos, simulation activities, and literature, all designed to address these objectives.

Action Research Question

The research question that this study was designed to investigate is: *Can a unit of study about autism spectrum disorder (ASD) enhance neurotypical (NT) peers' understanding, engagement, and interactions with students with autism on the playground?*

Limitations

Several limitations may have influenced the outcome of this research. One limitation was the duration of the project. The brief timeframe allowed only a small data collection and analysis window, potentially distorting the project's outcomes.

Another limitation was the size of the sample in the study. Data were collected from 36 participants. Acting as a researcher-teacher who personally teaches both groups of students, there is a risk of bias or potential influence on the reliability of exit ticket interpretation. Students might feel compelled to answer the tickets in a way that would impress me.

Additionally, the participants in this study were third graders, and their social and emotional development varied widely. Interactions with peers and familial influences may influence their attitudes toward students with special needs. Furthermore, the concept of empathy may be relatively new to them.

Positionality of the Researcher

As a teacher-researcher with credentials in physical education, special education, and a multiple subject credential, I brought a unique perspective to the subject matter. Having taught in

both general education and special education classrooms while striving to include students with special needs, I approached the study with a multifaceted understanding.

Acknowledging my background as a general education teacher, I carried certain preconceived notions about this group. It's important to note that, as a teacher-researcher, my understanding of the experiences of being autistic is limited. These aspects of my positionality significantly influenced the direction and interpretation of the study.

Before the 2020 shutdown, I believe that the general education mainstream classes may have more effectively integrated special needs students throughout my school. However, due to the interruption in in-person learning, two grade levels missed exposure to neurodivergent (ND) students. Upon returning in the fall of 2021 from the Covid shutdown, as a physical education teacher, I assumed pre-existing exposure and understanding when I paired NT and ND students together in PE; however, my NT students showed surprise and hesitancy in their interactions. I chose to conduct this study because of this gap in engagement and understanding. One main objective was to educate our general education students and address misunderstanding and stigma, aiming to improve attitudes and foster an inclusive culture throughout our school. It's important to note the inherent bias in my assumption of pre-existing exposure.

As a teacher-researcher, I navigated this tension carefully, aiming to ensure objectivity in my study. One primary objective of this research was to educate general education students, addressing any misunderstanding and stigma, with the goal of improving attitudes and fostering an inclusive culture throughout our school. I remained aware of my personal positionality and politicized identity throughout this inquiry. To reduce the impact of my own bias on the data, I utilized a variety of data collection strategies. This approach aimed to ensure that my inquiry yielded accurate results and supported the precision of my findings.

Definitions of Terms

Autism Spectrum Disorder (ASD) or Autism

Autism, also known as autism spectrum disorder (ASD), and individuals with this diagnosis, commonly referred to as neurodiverse students, is a neurodevelopmental condition characterized by difficulties in social communication, repetitive behaviors, and restricted interests. It presents as a spectrum with varying symptoms and strengths. ASD emerges in early childhood and benefits from early intervention and tailored support (Reynolds & Fletcher-Janzen, 2007). In this paper I interchange ASD, autism, and neurodiverse.

Least Restrictive Environment (LRE)

The Least Restrictive Environment (LRE) is an educational principle that advocates placing students with disabilities in a setting that allows maximum participation with non-disabled peers while still addressing their unique learning needs. The aim is to promote inclusion and provide equal educational opportunities (Reynolds & Fletcher-Janzen, 2007).

Neurotypical Student (NT)

A neurotypical student has typical neurological development, displaying cognitive and behavioral patterns that align with most of the population. Neurotypicality is often used in contrast to neurodiversity, emphasizing the typical range of neurological traits and functioning. In this paper, *neurotypical* refers to any student in the general education classroom not identified with special needs and in a special day class.

Neurodiverse Student (ND)

A neurodiverse student exhibits atypical neurological development, displaying cognitive and behavioral patterns that deviate from most of the population. Neurodiversity recognizes and celebrates the natural variation in neurological traits and functioning. In this paper, neurodiverse

(ND) refers to students with unique neurological characteristics, including those identified with autism spectrum disorder or autism. This is in contrast to the term *neurotypical*.

Implications

This study aimed to explore the impact an autism awareness unit would have on the understanding and engagement of neurotypical (NT) students with autistic peers on the playground. This inquiry specifically aimed to understand how education and exposure influence the relationships between NT and neurodivergent (ND) students, focusing on improving empathy and attitudes among NT students and enhancing engagement and participation for ND students. The research underscores the critical need for more investigation in education and exposure to address the challenges faced by students with disabilities who seek active involvement in play. The potential improvement in engagement, as indicated by the research findings, can enhance school culture and foster acceptance of inclusivity across the entire school.

This study may highlight the moral obligation to cultivate empathy and compassion for every individual. The potential outcome is an ability awareness program that not only enhances understanding and empathy but also instills these as essential life skills. A successful outcome could serve as a testament to the importance of educational inclusion, emphasizing its positive impact on justice for students with special needs. The ultimate hope is that all stakeholders recognize and appreciate the significance of educational inclusion for the benefit of every student.

Chapter II

Literature Review

This action research study investigated the impact an autism awareness unit had on typically developing peers, specifically, how information about autism influenced the understanding and engagement of neurotypical (NT) peers with neurodiverse (ND) students on the playground.

Recent statistics from the Center for Disease Control's (CDC) Autism and Developmental Disabilities Monitoring (ADDM) Network reveal that 1 in 36 children in the United States are diagnosed with autism spectrum disorder (ASD) (*Data and Statistics on Autism Spectrum Disorder* | CDC, 2023). For those with an educational determination of ASD, which differs from a medical diagnosis, academic support and services may be available in the classroom. Federal and state laws mandate that all eligible students with disabilities are entitled to a free and appropriate public education (FAPE) in the least restrictive environment (LRE), ensuring that "students with disabilities receive their education, to the maximum extent appropriate, with non-disabled peers" (U.S. Department of Education, 2017).

Inclusive education is a shared responsibility among all stakeholders, and the role of neurotypical peers is critical to its success. In my experience as a physical education teacher, I have observed neurodiverse students playing independently on the playground with little interaction between neurotypical peers and neurodiverse students during recess. This observation highlights a gap between the legal requirement for inclusion and the implementation of inclusive practices at my school.

Research suggests there may be a way to fill this gap: "Perhaps the most powerful tool to create a positive environment and increase positive social interactions between the child with

autism and his or her peers is to educate the typically developing peers about autism spectrum disorder” (An Educator’s Guide to Autism | OAR, 2017). To this end, I implemented an intervention educating neurotypical peers about autism spectrum disorder to create awareness and understanding, as well as create a space where all can effectively engage on the playground. The question guiding my action research study was: *How would a unit of study about autism spectrum disorder (ASD) impact the understanding and interactions of neurotypical (NT) peers with students with autism on the playground?*

Overview of the Literature Review

This literature review provides an overview of the research related to educational inclusion. First, I provide the theoretical rationale that informs this study. Educational inclusion is a matter of social justice, mandated by legal frameworks, and critical for the social-emotional well-being of all students. To enhance comprehension of this literature, I offer a definition of attitude that encompasses cognitive, affective, and behavioral dimensions, with a particular emphasis on empathy.

Then, I move to the literature review with a definition of educational inclusion, including empirical research demonstrating the advantages of inclusion for neurotypical and neurodiverse students. The focus then shifts to defining the attitudes of general education teachers and neurotypical students. It identifies the impact these attitudes have on successfully including students on the Autism Spectrum.

Lastly, the literature review investigates studies that indicate how peer education and peer-mediated instruction and intervention play a pivotal role in enhancing attitudes and fostering positive interactions between neurotypical and neurodiverse students, thus providing a safe and successful environment for all students to thrive.

The Saint Mary's College Library education databases, including EBSCO, Education Source, ERIC, PsychINFO, and Google Scholar, were used to gather relevant research. The keywords used in this study were; *autism, autism awareness, autism spectrum disorder, attitudes, general education teacher attitudes, typical developing peer attitudes, inclusion, special education inclusion, peer education, and peer-mediated intervention.*

Theoretical Rationale

The theoretical rationale provides a research-based explanation that supports this action research project, acknowledging the moral imperative of inclusion and the legal responsibilities outlined by the law. Social and emotional learning (SEL) concepts, particularly empathy and attitude, contribute to the theoretical framework by fostering empathy and cultivating positive attitudes. The unit's primary objective was to improve neurotypical students' understanding and interaction with neurodivergent peers, thereby fostering a more inclusive and supportive social environment on the playground.

Inclusion is a Moral Imperative

When we establish an inclusive learning environment that offers equal access and opportunities for every child, regardless of their needs or abilities, we challenge discriminatory practices and recognize the value of diversity. Educational inclusion, particularly the integration of students with special needs or developmental disabilities, combines excellent instruction and quality academic curriculum within a general education setting alongside neurotypical peers. Such an inclusive learning environment provides equitable support and appropriate services for all students' unique learning and developmental needs.

Regardless of a student's ability, they can thrive in an appropriate and inclusive school setting. Therefore, educational inclusion is a principle of social justice, and access to quality

education is a fundamental human right. The Salamanca Statement, written out of the 1994 World Conference on Special Needs Education in Salamanca, Spain, played a key role in promoting these ideals. This landmark statement called for every child to be included, including those with disabilities, within regular educational settings, where they could learn alongside their typically developing peers (UNESCO, 1994).

The Salamanca Statement underscored that all children possess unique characteristics, interests, abilities, and learning needs. It called for an educational system that genuinely values this rich diversity of attributes, with regular schools fully equipped to cater to these diverse needs (UNESCO, 1994, p.3). The statement articulated, “Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society, and achieving education for all” (UNESCO, 1994, pp. 9-10). This international decree passionately emphasizes the moral responsibility of all nations to advocate for inclusive education. The Salamanca Statement advocates for inclusive education policies globally, aligning with national legislation like the Individuals with Disabilities Education Act (IDEA) here in the United States.

Inclusion is a Legal Responsibility

In the United States, educational inclusion of students with disabilities is not solely a moral obligation, it also represents a legal responsibility. The concept of inclusive education for all individuals with disabilities is relatively recent in this country, as outlined in the History of the Individuals with Disabilities Education Act from the Encyclopedia of Special Education, before 1970, there were no federal protections or provisions to educate students with disabilities in the United States (Reynolds & Fletcher-Janzen, 2007, p. 1046).

In 1975, when legislation was enacted to address students with disabilities, only one in five children with disabilities received education in public schools (Kauffman & Hallahan, 2011, p. 60). According to Kauffman and Hallahan (2011) in their Handbook of Special Education, "Congressional findings in 1974 indicated that more than 1.75 million students with disabilities did not receive educational services" (p. 60). In addition to these statistics, some states excluded specific categories of students with disabilities. Kauffman and Hallahan (2011) also highlight that over three million students with undiagnosed disabilities attending public schools did not receive an appropriate education to meet their learning needs (p. 60).

The landmark legislation enacted in 1975, called The Education for All Handicapped Children Act, PL 94-142, mandated that all disabled children have available to them a free appropriate public education (FAPE) that provides special education and related services to meet their unique needs (Reynolds & Fletcher-Janzen, 2007 p.1046). All states and local education agencies must continue to ensure the identification and evaluation of all children and "conduct a comprehensive, non-discriminatory, multidisciplinary education assessment for each child. These children are to receive their education in the least restrictive environment (LRE)" (Reynolds & Fletcher-Janzen, 2007, p.1046). Several amendments have modified PL 94-142, and its reauthorization in 1990 resulted in a name change to the Individuals with Disabilities Education Act, or IDEA. Specific to this paper, it is important to note that IDEA broadened the categories of disabilities in 1990 to encompass autism. Students with autism are afforded protection and services under IDEA.

Additionally, two more sections are critical to understand: Section 504 and the least restrictive environment. Section 504 is one element of the law that reinforces the civil rights of individuals with disabilities in education. This section ensures that "no qualified individual with

a disability will be denied participation in any activity or program receiving federal financial assistance solely due to their disability" (Reynolds & Fletcher-Janzen, 2007, p. 1046).

Least Restrictive Environment. The least restrictive environment (LRE) is not a place but a principle guiding a child's educational program. The term *LRE* defines how a student with disabilities is to be educated, emphasizing their placement alongside peers without disabilities to the greatest extent possible (Kauffman & Hallahan, 2011, p.68)

As a mandated principle of IDEA, LRE states that "students with disabilities must be educated with their non-disabled peers (a) to the maximum extent appropriate, and (b) the removal or separation of children with disabilities from the regular educational environment may occur only when the severity of the disability is such that, even with the use of supplementary aids and services, satisfactory education cannot be achieved" (U.S. Department of Education, 2017). Equal access to quality education for students with special needs in regular education classes, alongside their non-disabled peers, for the majority of the day, with appropriate support and services, is the least restrictive environment. As more students with special needs are serviced in general education classes, neurotypical peers need to understand the capabilities and diversity of all students in their classes. Hernandez-Torrano and colleagues (2022) state, "Regular schools oriented toward inclusion are 'the more effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all'" (p. 893).

Social-Emotional Learning

Social-emotional learning (SEL) is an instructional model taught to develop students' self-awareness, social skills, and emotional competency. The SEL framework includes five competencies: self-awareness, self-management, social awareness, relationship skills, and

responsible decision-making. In the context of this research, the focus will center on the competencies of self-awareness and social awareness. Self-awareness enables students to recognize and comprehend their emotions, identify how these emotions link to their behavior, and how they influence their attitudes. Social awareness involves recognizing and fostering empathy for the emotions and viewpoints of others, as well as acknowledging and appreciating their diverse life experiences and perspectives even when faced with differences. Attitude and empathy are two important characteristics when looking at SEL.

Attitude. Students' attitudes play a crucial role in social-emotional learning. Learning about autism enhances empathy among neurotypical students. Positive attitudes acquired through autism awareness activities translate into inclusive behavior, an essential aspect of SEL that emphasizes creating a supportive environment. Being both aware and positive about attitudes is fundamental to SEL. Harry Triandis is a psychologist and key contributor to attitude theory and its impact on behavior. In his 1971 book *Attitudes and Attitude Change*, Triandis (1971) defined *attitude* as follows: "Attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situations" (p. 2). In his chapter, *Perspectives and Issues in the Study of Attitudes*, Triandis elaborated that the definition of attitude comprised three components: the idea (the cognitive component), the emotion attached to it (affective component), and the predisposition to action (the behavioral component). In every explanation of attitude theory, these three components are discussed. Triandis' definition, encompassing the cognitive, affective, and behavioral components, provides a more holistic understanding of *attitude*. This comprehensive view aligns with social and emotional learning (SEL) by acknowledging the emotional aspect and predisposition to action. SEL emphasizes emotional awareness, interpersonal skills, and responsible decision-making. Triandis' definition better

supports SEL by recognizing that thoughts, emotions, and actions work together in shaping attitudes and behavior.

Empathy. Empathy is the ability to understand another person’s perspective and emotions, facilitating deeper connections and fostering compassion and support. Empathy encourages understanding, cooperation, and a sense of community among individuals. As children develop empathy, they can connect with peers different from themselves. Developing empathy improves understanding, active engagement, and a positive school environment.

In their paper *Knowledge of Autism and Attitudes of Children Towards their Partially Integrated Peers with Autism Spectrum Disorders*, Mavropoulou and Sideridis (2014) investigated whether peers with regular contact with autistic students have a better understanding, cognitive attitude, higher levels of empathy, and positive behavioral interventions than neurotypical peers with no contact. They found that neurotypical peers with weekly contact with autistic students for three months “indicated greater evidence for the support of inclusionary practices, for increasing knowledge and shaping positive attitudes towards students with ASD. Moreover, this study explored the effects of contact on the level of children’s empathy” (p. 1882). They found that attitudes and behaviors improved and that peers’ knowledge and attitudes towards partially integrated classmates with ASD show a relationship between children’s empathy and attitudes (Mavropoulou & Sideridis, 2014, p. 1883). Improved empathy in neurotypical peers positively affects behavioral intentions and engagement with neurodiverse students.

Collectively, the Individuals with Disabilities Education Act, the least restrictive environment, and the social and emotional learning model, including critical components of attitude and empathy, provide a foundation that links the legal and ethical objectives to the social

significance of educational inclusion for neurotypical students. This framework underscores the purpose behind the social participation and inclusion of students with autism on the playground, highlighting the benefits of inclusion for all students within an educational setting.

Review of Related Research

The review of related research is organized into three sections: educational inclusion, the challenges of creating an educationally inclusive environment for all students, and addressing these challenges through positive intervention in the way of education and engagement. Each of the three sections includes a summary of relevant literature and a connection between extant research and this study.

Educational Inclusion

Educational inclusion for students with disabilities involves integrating them into general education classes alongside their neurotypical peers. This inclusion requires support and accommodation for the students with disabilities to help them access the curriculum. The goal is to create an inclusive environment that fosters social interaction, academic growth, and the development of social skills while promoting understanding and acceptance among all students.

Samuel Odom is a research scientist, professor, and author or coauthor of more than 100 publications on early childhood intervention and inclusion of students with developmental disabilities and autism spectrum disorder. Beginning in 2011, Odom and colleagues argued for the inclusion of students with developmental disabilities in the Least Restrictive Environment (LRE) because of the positive impact the LRE has on students with and without disabilities (Odom et al., 2011). In his 2019 article, *Peer-Based Interventions for Children and Youth with Autism Spectrum Disorder: History and Effects*, Odom suggested that inclusion impacts academic performance, friendships, and social acceptance. It is a way to promote diversity,

equity, and equal educational opportunities for all students, including students on the autism spectrum. Positive educational inclusion celebrates diversity, emphasizing that every student has unique strengths and contributions to offer (Odom, 2019, p. 171).

Definition of Inclusion. McLeskey and colleagues (2014) provide a general definition of effective inclusive schools in their chapter *What are Effective Inclusive Schools and Why are They Important*. They write that an effective inclusive school provides a place where students with disabilities are valued and active participants in the broader school community. In an inclusive environment, students with disabilities are “provided the support they need to succeed in academic, social and extracurricular activities” (p.4).

Francisco and colleagues (2020) in their article, *Inclusion and Special Education*, explore the effectiveness of special education and inclusion and whether it is achieving its goals, especially for individuals with disabilities. As it chronicles history, they report that the primary focus of the Education for All Handicapped Children Act (EAHCA) in 1975 was to ensure that children with disabilities could access the general education curriculum. However, it was not until the No Child Left Behind Act (NCLB) in 2002, which mandated that qualified teachers teach content area subjects, that an emphasis was placed on providing individuals with disabilities access to the general education curriculum. NCLB recognized that only qualified teachers could effectively instruct in these content areas. This act benefited students with disabilities and promoted their inclusion in general education classes (p. 9).

Francisco et al. (2020) pointed out that the United Nations Convention on the Rights of Persons with Disabilities in 2006 was an outcome of the Individuals with Disabilities Education Act (IDEA) of 1990. Together, these two legislative landmarks represent a significant shift in the perception of individuals with disabilities. This shift recognizes all people with special

needs possessing equal rights and fundamental freedoms. This transformation has impacted the special education field, shifting its focus toward principles rooted in social justice, human rights, and educational equity (Hernandez-Torrano et al., 2020).

In the fall of 2021, the US Department of Education reported that more than two-thirds of students identified with disabilities spent 80 percent or more of their school day in general education classes (National Center for Education Statistics, 2021). This statistic reflects a growing trend in schools educating more students with special needs alongside their non-disabled peers. Research on inclusive education has demonstrated numerous social and academic advantages for students with and without disabilities.

Benefits of Educational Inclusion. Educational inclusion is a fundamental right for every child, including students with special needs. DiMaggio and her colleagues (2021) assert that inclusive education offers social and academic benefits for all students; however, many advocates in special education suggest that merely including students with disabilities in the classroom is not just a distinct teaching method but a different approach to education. According to federal law, educational inclusion strives to provide all students, including those with disabilities, equal access to high-quality education in the least restrictive environment. In the case of students with special needs, inclusion aims to improve their access to the general curriculum while promoting social participation and communication skills (Hodges, 2021, p. 3231).

Benefits to Neurodiverse (ND) Students. One major benefit of inclusive education is that both students with disabilities and those without can experience social advantages from attending regular schools together (deBoar, 2012).

Several studies have investigated the benefits of being in an inclusive setting for students with autism. Mavropoulou and Sideridis (2014) conducted a study to measure the effects of contact with integrated students with ASD. Their study documented evidence that students with autism who are fully included in regular classrooms experience increased levels of social engagement, receive significant levels of social support, and demonstrate higher levels of social competence when compared to students placed in segregated settings (p. 1869).

In 2016, Campbell published an article, *The Importance of Peers in Inclusive Education for Individuals with ASD*, in which he wrote that the educational inclusion of students with autism offers increased learning opportunities and behavioral modeling by typically developing peers. He concluded that inclusive education provides opportunities for neurodiverse (ND) students to access the general education curriculum in an equitable educational environment. It allows ND students to learn alongside their neurotypical peers. This setting fosters a sense of belonging and encourages social interaction among all students (*The Importance of Peers in Inclusive Education for Individuals with ASD* | OAR, 2016).

Educational inclusion contributes to recognizing the value of diversity and accommodating different learning styles, providing a more inclusive and supportive educational experience for all students. Such relationships are not possible in separate self-contained classrooms; therefore, neurodiverse students truly benefit from educational inclusion.

Benefit to Neurotypical Peers (NT). Neurotypical peers also gain valuable benefits from inclusion. Hodges and colleagues (2021) discuss an intervention in their paper, *Closing the Gap Between Theory and Practice*, focused on enhancing the school participation of both students on the autism spectrum and their neurotypical peers. According to their findings, exposure and education in an inclusive setting can improve empathy, understanding, and acceptance among

neurotypical peers (p. 3236). Inclusive classrooms allow all students to learn from each other, fostering the development of social and emotional skills that are beneficial within the school environment and broader life contexts.

A neurotypical student benefits from a setting that includes diverse learners because it creates a dynamic learning environment, challenges discriminatory practices, recognizes the value of diversity, fosters a sense of belonging, and respects individual differences. The International Salamanca Statement states, “Inclusion and participation are essential to human dignity and the enjoyment and exercise of human rights” (UNESCO, 1994, p.20).

There is evidence that the inclusion of students with disabilities in settings that emphasize participation amongst all students improves the academic performance of general education students. One team of researchers point out that, “Researchers have found that inclusion increases academic engagement, particularly for those who demonstrate greater intellectual abilities” (Mavropoulou & Sideridis, 2014, p. 1870). The inherent benefits of educational inclusion equip all students for life beyond school.

Francisco et al. (2020) suggested that inclusion intersects many layers, including race, gender, and socioeconomic background. As lawmakers have amended and reenacted IDEA, they have added more disability categories, which has raised concerns about students of color being segregated and overrepresented in special education. Race, socioeconomic status, and language diversity are critical intersectionality components of inclusion that must be explored and addressed.

The information gathered from this literature review on inclusive education has influenced the design of my intervention. Understanding the benefits of inclusion has illustrated

what effective inclusion should look like at my school site, including the potential benefits successful inclusion could bring to both neurodiverse and neurotypical students.

As ideal as an inclusive school would be for all students involved, establishing an inclusive environment that guarantees educational and social outcomes for students with disabilities remains a complex puzzle. In the next section, I explore how the positive attitudes of all stakeholders can challenge the successful implementation of educational inclusion for students with disabilities.

Challenge Creating an Inclusive Environment

Inclusion is not only a moral imperative but also a legal requirement. However, creating a positive and supportive inclusive environment can be challenging. The attitudes of general education teachers and neurotypical peers play a significant role in determining the success of an inclusive program. Though most programs try to implement the least restrictive environment (LRE) in general education settings, many students still attend segregated classrooms in the United States (Wehmeyer et al., 2021, p. 36). General education teachers are responsible for fostering a positive, inclusive environment that enables students with special needs to effectively engage with the curriculum and improve their social communication skills.

Attitudes of General Education Teachers. Research has found that general education teachers believe they are not prepared to meet the needs of students with disabilities. Empirical evidence further substantiates that teacher readiness, familiarity with disabilities, and proficiency in effective teaching methods contribute to a negative attitude toward including students with disabilities in their classes (Wehmeyer et al., 2021 p.41). A definition of attitude specific to general education teachers and their influence on the success of educational inclusion for students with disability provides the frame to this section. Next, a summary of two reports

examining teachers' attitudes toward inclusive education and the factors influencing these attitudes emphasize the role teachers' attitudes play in the success of inclusion. Finally, suggestions from the research are provided to support teachers in improving their attitudes to enhance the positive practice of inclusion.

De Boer and others (2011) define *attitude* as an individual's perspective or disposition toward a person, thing, or idea (p. 333). In their study, *Regular Primary School Teachers' Attitudes Towards Inclusive Education*, they explored teachers' views on inclusive education, examine associated variables, and evaluate how these attitudes impact the learning and social engagement of students with special needs. The researchers conducted a comprehensive literature review of 26 studies focused on the attitudes of regular primary school teachers, investigating the influence of these attitudes on the social participation of students with special needs. The findings underscore the pivotal role of general education teachers in establishing successful, inclusive learning environments (de Boer et al., 2011). This definition, focusing on an individual's viewpoint or disposition, provides a clear lens for understanding teachers' attitudes toward students with disabilities. It directly addresses the cognitive aspect of attitudes, offering insights into how teachers perceive and approach students with disabilities. This definition better explains teachers' attitudes by emphasizing their perspectives, laying a foundation for examining the cognitive dimensions of teacher-student interactions in the context of special education.

More recently, Hind and colleagues (2019) conducted a mixed-methods study examining mainstream teachers' attitudes toward the inclusion of children with social, emotional, and behavioral needs. Their findings reveal that experienced teachers tended to exhibit more negative attitudes and were less willing to integrate students with special needs into their general education classrooms.

Both studies reported teachers often see themselves as lacking knowledge about diverse disabilities and confidence in using effective teaching strategies for students with varying disabilities (de Boer et al., 2011; Hind et al., 2019). One interesting finding was that teachers with fewer years of teaching experience exhibit more favorable attitudes toward inclusive education than general education teachers with extensive teaching experience (de Boer et al., 2011; Hind et al., 2019).

Hind et al. (2019) provided two explanations for these negative attitudes. First, they suggested that the inclusion policy implementation has evolved since teachers with experience earned their credentials. Secondly, they found that the level of support that teachers received correlated with attitudes. Therefore, they concluded that increased support for teachers, including ongoing professional development, would contribute to more positive attitudes.

Both de Boer et al. (2011) and Hind et al. (2019) report that there is potential for improvement when assessing teachers' attitudes. Hind et al. (2019) suggested that physical support and consistency would improve teacher attitudes (p.433). De Boer et al. (2011) argue that additional teacher training is necessary (p. 347). They both discussed that the focus should be less on the teachers' qualifications and more on their training, experience, and education (de Boer et al., 2011; Hind et al., 2019). Both research teams agree that general education teachers are responsible for fostering a positive, inclusive environment, and contributing to their positive attitude is in the best interest of all stakeholders.

Attitudes of Neurotypical Peers. As the practice of including students with disabilities in general education classes continues to expand, neurotypical peers increasingly interact with students with special needs. An inclusive setting aims to establish a welcoming and accepting environment characterized by positive attitudes from all stakeholders. However, certain attitudes

and misconceptions among neurotypical students can pose challenges to creating a positive, supportive, and inclusive atmosphere. A systematic review conducted by Birnschein and colleagues (2021) reveals that neurotypical peers often perceive the social behavior of children with ASD as unusual. Students with ASD may experience difficulties with social gestures, maintaining eye contact, and expressing emotions, which can present challenges to interaction with their peers. Consequently, neurotypical peers may opt for social distance and choose not to engage due to perceived awkward behavior.

DiMaggio et al. (2021) investigated the attitudes of typically developing peers toward students with disabilities, specifically aiming to comprehend the personal and contextual factors that influence these attitudes. The results demonstrated that the attitudes of neurotypical students impacted the social participation and successful inclusion of students with disabilities (Di Maggio et al., 2021, p. 8). The researchers concluded that identifying and comprehending the factors contributing to these negative attitudes may guide the development of appropriate interventions and foster positive outcomes.

In this section, I build on the concept of attitude and then explore the factors researchers attribute to the negative attitudes of neurotypical peers. Finally, I outline the recommendations made by researchers to address these attitudes among neurotypical peers.

Triandis (1971) defines an attitude as an idea combined with emotion that influences behavior (p. 2). According to Mavropoulou and Sideridis (2014) the cognitive aspect of an attitude is a belief about someone or something, the affective component relates to one's feelings toward that person or thing, and the behavioral dimension involves the intention to engage, in this context, with a child with disabilities (p. 1867).

In their study on elementary school students' attitudes toward students with disabilities, Di Maggio et al. (2022) identified negative neurotypical attitudes as a significant barrier to inclusive education. These attitudes hinder the participation of students with special needs in school. Researchers attribute these negative attitudes to several personal and contextual factors, including sex, age, type of disability, experience, and knowledge (p.3).

In 2012, de Boer and colleagues conducted another literature review that analyzed 20 studies to explore the attitudes of neurotypical peers toward students with special needs. It is important to note that this study, authored by the same researchers, differs from their previous research on teacher attitudes in 2011. In 2012, de Boer et al. investigated how the attitudes of neurotypical peers influenced the social participation of students with disabilities. They examined the connection between personal and environmental factors, including the gender and age of neurotypical students, the specific disability of the student with special needs, their previous interactions neurotypical peers have had with students with disabilities, and the neurotypical students' knowledge about various types of disabilities (p. 380).

Most of these 20 studies emphasized the cognitive and behavioral aspects of attitude. These studies demonstrated that as students' knowledge and understanding of their peers with disabilities improved, their attitudes became more accepting (de Boer, 2012, p. 389). Negative attitudes from neurotypical students toward their peers with disabilities can lead to social isolation, loneliness, rejection, and bullying. These negative experiences can, in turn, have long-lasting detrimental effects, such as depression and anxiety (de Boer et al., 2012).

DiMaggio et al. (2021) provide several considerations for successful inclusion. When presenting information, they suggested that educators be mindful of how students with special needs are presented to neurotypical peers, including positive images focused on strengths and

abilities. In an intervention, they suggested that educators consider the type of disability of the student with special needs and how their disability presents on the playground. When considering neurotypical participants to include in an intervention, the researchers suggested that teachers be thoughtful of the sex and age of peers. These insightful suggestions played a role in my intervention and were woven into my lessons.

Fostering a positive attitude towards students with ASD is crucial for the success of inclusion programs. According to Hodges et al. (2021), environmental factors like peer and teacher understanding, awareness, and acceptance of autism and students with ASD can significantly influence the school participation of ASD students. Addressing these negative attitudes is a shared responsibility among all stakeholders. In the following section, I explore two empirically validated methods, education and exposure, that effectively improve the negative attitudes of neurotypical peers.

Addressing Challenges of Inclusion

Since the passage of IDEA by Congress in 1975, the objective of inclusion has been to provide effective education for students with special needs, regardless of their disabilities, alongside their typically developing peers (Kauffman & Hallahan, 2011, p. 60). Researchers and educators have developed various programs. The aim is to equip students with autism with the necessary social skills to engage and coexist socially with their neurotypical peers.

General education students play a critical role in successfully including students with special needs. Research indicates that neurotypical (NT) peers often hold negative attitudes and perceptions toward children with autism compared to their typically developing peers (Campbell et al., 2004, p. 332). It is crucial to enhance these attitudes and perceptions, and such improvement can be achieved through education, heightened awareness, and increased exposure

of general education students to their peers with special needs (Mavropoulou & Sideridis, 2014, p. 1881).

Researchers have reviewed various intervention techniques to improve inclusion. In a special issue of *School Psychology Review*, Hume and Campbell (2019) identified five evidence-based peer education interventions implemented in educational settings. These range from indirect methods like peer education to more direct involvement, such as peer tutoring (p. 116). These proven approaches aim to reduce the stigma associated with students with special needs by educating peers about ASD, training peers as interventionists, teaching them how to initiate social interactions, providing academic support, and serving as social partners for students with ASD. Based on this information, an autism awareness unit taught to neurotypical peers may effectively include students with ASD in general education classrooms.

Peer Education. Research suggests that educating neurotypical peers about autism and other disabilities in the classroom improves the inclusion experience for all students. A meta-analysis by Lochner (2019) explored the impact of autism awareness interventions. Empirical evidence showed that such programs can positively influence neurotypical students' attitudes and improve their behavioral intentions towards students with autism. Numerous studies support this notion, with growing evidence suggesting that educating peers about ASD improves their knowledge, understanding, and attitudes (Lochner, 2019, p.3). Jonathan Campbell, an expert in the field of autism education and modifying the attitudes of typically developing peers toward students with ASD, reported education directed towards neurotypical peers, with a focus on building awareness, understanding, compassion, tolerance, and acceptance of individuals who are neurodiverse, significantly enhances the educational inclusion of students with neurodiversity (Campbell et al., 2019, p. 146).

In 2004, Campbell and colleagues conducted a study to identify the most effective approach to educating typically developing peers about autism and autistic behavior. Their research findings revealed that a combination of descriptive and explanatory information positively impacted typically developing peers, improving perceptions and attitudes toward students on the autism spectrum. This original study has been referenced in scholarly literature 263 times.

In their study on elementary school students' attitudes toward peers with disabilities, DiMaggio and others (2021) discovered that presenting information about students with disabilities in the context of their strengths and abilities positively impacted the attitudes of neurotypical peers and contributed to improved participation of students with disabilities in school (p. 3). This is an example of providing descriptive information. This descriptive information centered on highlighting the similarities between neurotypical and neurodiverse students, such as sharing likes, dislikes, and everyday interests or activities (Campbell et al., 2004, p.326). Explanatory information included explanations about autism as a neurological disorder that one has from birth, along with typical behaviors associated with ASD (Campbell et al., 2004, p.326).

Research further indicates that educating neurotypical children early results in more favorable attitudes toward students with disabilities. Campbell et al. (2004) states, "Our grade-based findings and the negative correlation between age and cognitive attitudes... tend to become more negative as children proceed from childhood to adolescence." Their study concluded that providing descriptive and explanatory information to third and fourth-graders had a more positive impact than teaching older students (p. 333).

In 2019, Campbell et al. conducted a study, *Educating Students About Autism Spectrum Disorder, using the Kit for Kids Curriculum: Effects on Knowledge and Attitudes*. This peer education program, Kit for Kids, aimed to enhance peers' knowledge, foster understanding of ASD-related behaviors, and ultimately improve attitudes and behaviors of neurotypical students toward students with ASD (p. 146). The proposed curriculum used descriptive, explanatory, and directive information. The result indicated that this approach and these materials were effective. Participants reported increased knowledge and positive attitudes (Campbell et al., 2019, p. 153).

The Kit for Kids curriculum is freely available to teachers and is a valuable tool for reducing misconceptions about ASD while enhancing neurotypical students' understanding of autism. These findings are the foundation for my intervention and underscore the critical importance of educating neurotypical students about ASD.

Peer Intervention. Peer intervention plays a pivotal role in shaping attitudes. While peer education and awareness programs have effectively improved neurotypical peers' knowledge, understanding, and attitudes, another approach highlights the significance of favorable contact among all students, even those different from oneself. Mavropoulou and Sideridis (2014) in their study *Knowledge of Autism and Attitudes of Children Towards Their Partially Integrated Peers with Autism Spectrum Disorders*, found that partial integration within general education schools resulted in neurotypical peers having more knowledge, more positive cognitive attitudes, and stronger behavioral intentions toward their peers with ASD compared to neurotypical students who did not have contact with them (p. 1878).

Mavropoulou and Sideridis (2014) based their study's conceptual framework on Gordon Allport's contact theory, which theorizes that positive contact between individuals with and without disabilities leads to improved attitudes. Their research aligns with this theory, explaining

the positive attitudes of non-disabled peers toward partially integrated children with ASD due to positive contact and extended periods in integrated settings. The study found that "children who had contact with peers with ASD reported more positive (general and domain-specific) behavioral intentions than students with no such contact" (p.1868).

According to DiMaggio et al. (2021), genuine contact and experience between students with and without disabilities enhances peers' attitudes. The research findings suggest that simply placing students with ASD in an inclusive classroom is insufficient. Authentic interactions are vital in promoting positive attitudes among all students (p.4). The value of peer contact highlights the potential of positive peer intervention and can significantly enhance the learning and social experiences of both neurodiverse and neurotypical students. Peer support, where neurotypical peers assist students with disabilities, is common in inclusive settings. Peer support capitalizes on neurotypical peers' positive influence and has been shown to improve learning and social outcomes for students with special needs (Hume & Campbell, 2019).

Peer mediated instruction or intervention (PMI) is an evidence-based peer support program used to provide students with autism the opportunity to learn social communication, play, and problem-solving skills from their neurotypical peers (Birnschein et al., 2021; Odom, 2019). It is an educational strategy using a buddy or small group of students as natural models or core instructors (Hodges et al., 2021, p. 3236). Findings have identified that peer-mediated instructional arrangements have significantly influenced students on the autism spectrum, in both their social communication skills and the reduction of problem behaviors (Odom, 2019).

Birnschein et al. (2021) reviewed peer training programs that use peer mediation techniques to address peer stigma. The review revealed that these intervention programs enhance understanding and effectively diminish stigma among neurotypical peers. These training

initiatives, designed for typically developing peers, impart knowledge about ASD and equip them with the skills to serve as social models, engage patiently, and offer social support strategies to students with ASD. Birnschein et al. (2021) reported that attitudes and behavioral intentions of neurotypical peers toward students with ASD showed improvement after the intervention, particularly when the neurotypical peers were instructed in specific strategies and had opportunities to interact with individuals with ASD.

The present action research study most resembles the research by Richard Shores, who based his intervention on the principles of social reciprocity. He found that social initiation from neurotypical peers increased the social engagement of neurodiverse students and supported peer influence, promoting positive social outcomes for children with disabilities. These structured social interventions using prompts and peer influence led to the current study's peer-mediated instruction and interventions for typically developing children to use with students with special needs. (Odom, 2019, p.171) According to Carter et al. (2014), "Peers without disabilities—when strategically selected and appropriately trained—demonstrated considerable capacity (and willingness) to effectively support their schoolmates in learning an array of social, communication, and functional skills" (p. 380).

The defining feature of PMI includes active involvement among peers and students with ASD. Peers provide direct or indirect assistance to improve social communication, skill acquisition, and school participation. Neurotypical students are chosen and trained to support the social engagement of their classmates with autism, specifically how to initiate social interaction and communication in natural play (Carter et al., 2014, p. 380).

The emphasis of PMI is to benefit the student with ASD. As PMI has evolved, however, the benefit of PMI to NT students is remarkable. The interactions and opportunities that PMI

offers neurotypical peers "can shape the attitudes, expectations, and commitments of the next generation of students—young people who will be future employers, neighbors, parents, fellow congregational or civic group members, or support providers for adults with significant disabilities" (Carter et al., 2014, p. 382).

Finally, in their review, Birnschein et al. (2021) found that providing neurotypical peers with opportunities to observe and interact with students with autism and providing them with specific strategies to engage socially, resulted in positive attitudes and a willingness to interact (p. 12). Implementing peer-mediated intervention (PMI) celebrates intellectual diversity and enhances empathy through structured interactions. PMI is an ongoing process that provides essential social communication skills to students with autism and neurotypical students.

Summary

Due to the rising number of students identified with autism spectrum disorder served in public schools, there is a need for education and understanding among typically developing peers (Hume, 2019, p.115). This literature review has included a theoretical rationale supporting inclusion, definitions of and benefits of inclusion, the challenges of implementation, and strategies for addressing these challenges within the general education setting. Theoretical research has established the legal, ethical, and social importance of educational inclusion, forming the basis for this study. Additionally, a discussion on attitude theory provides insight into why educating and exposing neurotypical students to students with special needs is essential.

The reviewed empirical research has examined the definition of inclusion from moral and legal perspectives. The review highlights the critical role of attitudes in the success of inclusion. The research reveals a gap between the moral and legal imperative of inclusion and the attitudes and behavioral engagement of general education teachers and neurotypical peers. This literature

review underscores the potential impact of peer education and exposure through peer-mediated interventions on improving attitudes and behavioral engagement between neurotypical and neurodiverse students.

As a physical education teacher at an elementary school, I am in a position to implement an autism awareness unit and provide peer-mediated instruction and intervention. As the research indicates, this can improve attitudes, behavioral intent, and engagement among neurotypical students when interacting with their neurodiverse peers on the playground.

This literature review sets the stage for my action research project and its place in the broader context. I aim to bridge the existing research gap through this study. The next chapter describes the methodology used to implement this unit of study. A pre-and post-intervention survey, exit tickets at the end of each lesson and systematic observations on the playground were used to evaluate the impact this intervention had on third grade students' their understanding and interactions with autistic students on the playground.

One final note that has been mentioned throughout the literature, it is important to note that many of the experts in the field of autism offer the following perspective of students with ASD. When planning any intervention or education, students with ASD vary in their desire for social contact, and their perceptions regarding the value of social inclusion or peer acceptance differ. Respecting students' social goals and preferences for peer involvement in reaching these goals is critical for all school professionals.

Chapter III

Methods

Recess at an elementary school is an ideal time for social inclusion. Many students with autism spectrum disorder, however, play independently of their peers on the playground. They can be found on an individual swing, alone on the play structure, or walking the playground perimeter outside of social group interactions. I have witnessed general education students walk past and ignore neurodiverse students. Research by Owen-DeSchryver et al. (2008) found that most interaction between students with ASD and their typical peers is instructional in nature and does not involve reciprocal interaction or companionship (p.16). Would an autism awareness unit taught to neurotypical students improve the understanding and engagement of all students on the playground?

When directed to communicate or engage with neurodiverse students, neurotypical peers report that the behavior of neurodiverse students is startling, and peers choose not to engage. Neurotypical peers ask teachers why students with special needs dominate the swings or perch on the play structure without moving. Why do these students hold their hands on their ears, flap their arms, or make unusual noises? This action research project emerged from these questions.

Inclusion is a moral and legal imperative; including neurodiverse students in the general education setting is the current educational practice in our public schools. Owen-DeSchryver et al. (2008) report that educational inclusion is unproductive without neurotypical peers understanding how and why students on the autism spectrum behave the way they do (p.17). During recess at my school, there needs to be more connection between the intention of educational inclusion and the actual social interactions among all students on the playground.

To fill this gap and improve student participation, I wrote a unit of study including four 50-minute lessons to teach general education third-grade students about autism spectrum disorder. This intervention aimed to educate the typically developing peer, to increase awareness, and to improve social interactions on the playground.

A review of the literature informed my intervention. The attitudes of neurotypical peers toward neurodiverse students are a critical component of positive social interactions and the success of inclusion. Research on the development of attitudes suggests that there are three components to attitude - the idea or cognitive component, the emotion attached to it, referred to as the affective component, and the predisposition to action, referred to as the behavioral component (Jones 1984, p. 33). The research suggests that attitudes are learned gradually through experience. Specifically, "by the early grade school years, attitudes become fully developed with the addition and organization of new details" (Jones 1984, p.143). Recognizing the importance of cultivating empathy, I designed an intervention for neurotypical third graders at my site based on the research of Jones (1984). This information served as the rationale behind each lesson.

The literature guided me in identifying instructional strategies that could positively impact the attitudes and interactions between neurotypical and neurodiverse students. In support of this, Campbell et al. (2019) assert, "Including information about ASD increases peers' knowledge, improves peers' understanding of behaviors, and ultimately, improves attitudes and behavior toward students with ASD" (p.146). Empathy plays a crucial role in fostering understanding, and my focus extends to students' experiences with ASD. When teaching an autism awareness unit, incorporating direct, descriptive, and explanatory messages has been proven to be a practical instructional approach with positive results (Campbell, 2019).

While conducting my literature review, I found a proven, research-based unit informing neurotypical students about ASD. This unit was created by the Organization for Autism Research (OAR), and it informed my unit of study. I taught my intervention, *Autism Awareness and Engagement: Supporting Interactions between Neurotypical and Neurodiverse Students on the Playground*, to a class of third graders. As suggested in their report *Combined descriptive and explanatory information improves peers' perception of autism*, Campbell et al. state, “For educators, special educators, psychologists, and administrators responsible for facilitating the acceptance of children with autism in inclusive settings, providing children with developmentally appropriate information about autism may be beneficial when delivered as early as possible” (Campbell et al., 2004, p. 335).

Research recommends teaching Autism Awareness within the context of a larger disability framework. I critically reflected on the unit's objectives and my instructional delivery. I also broadened the focus of my intervention to encompass autism within the context of neurodiversity and the 13 disabilities qualifying students for special education.

This intervention aimed to contribute to school improvement, teach social responsibility, improve students' social skills, and teach perspective. My action research question was, *How does a unit of study about Autism Spectrum Disorder (ASD) affect neurotypical (NT) peers' understanding of and interactions with students with Autism on the playground?* This chapter describes the setting of the research project, the participants, the instruments used to measure students' knowledge and engagement, and the data analysis plan.

Setting

This action research study was conducted at a TK- 5th-grade elementary school in a suburb of Northern California. The elementary school was a high-performing school recognized

as a California Gold Ribbon School in 2002 and 2014. Based on the 2021-2022 School Accountability Report Card (SARC), this school contained a population of approximately 600 students, including 278 (45%) Asian, 180 (29%) White, 61 (10%) Hispanic or Latino students, 55 (9%) two or more races, 20 (3%) Filipino, and 20 (3%) Black or African American (*California School Dashboard (CA Dept of Education), 2022*). In the 2021-2022 school year, student achievement results reported that 79% of students met or exceeded English Language Arts standards, and 72% met or exceeded Math standards on the California Assessment of Student Performance and Progress (CAASPP) test. These scores are significantly higher than the state average, which reported that 47% of students passed the English Language Arts standards statewide, and 33% of students passed the Math standards on the CAASPP test in the same year (*2021–22 Smarter Balanced ELA and Mathematics Test Results at a Glance - CAASPP Reporting (CA Dept of Education), 2022*).

I taught this Autism Awareness unit of study at my site during the 2022-2023 school year. There were 41 students identified with moderate special educational needs, and they were serviced within four special day classes. I focused on the third/fourth-grade special education class because their recess was with the third-grade students I was teaching. This class had eleven students: five fourth-grade students and six third-grade students. Of the eleven students, three were identified with Autism, five were identified with Autism and Speech Language Impairment (SLI), two were identified with Other Health Impairment (OHI), and one student was identified with Speech Language Impairment only. This information is essential because of the eleven students, only three were verbal.

During the 2022-2023 school year, the staff comprised 67 adults, including 31 classroom teachers, 18 support staff specialists, and 18 paraeducators. While specific racial and ethnic

demographic data for the staff and faculty were unavailable, it is worth noting that the staff exhibited some racial diversity. Most staff identified as White, while approximately one-third identified as belonging to Black Indigenous People of Color (BIPOC) communities.

For this project, four credentialed special day class teachers and 18 paraeducators supported 41 special needs students across four special day classes. Among these paraeducators, 10 provided one-on-one assistance to individual students, while the remaining eight were assigned to support their teacher and assist the entire class. This context is significant because it influences the social interactions among these students and their peers in the general education setting, particularly during recess and on the playground. Some paraeducators may appear intimidating to neurotypical students. One, in particular, is very loud and strict in her interactions with general education peers. Additionally, two paraeducators consistently hover over their students, making it challenging for neurotypical students to approach and engage with their peers with special needs.

Demographics of the Classroom

I had a unique relationship with these third-grade general education participants, not just as their PE teacher, but as a safe adult during the 2020-2021 pandemic school year. During the school shutdown that year, teaching physical education online involved significant amounts of time for check-ins and time working through social-emotional learning lessons. The class sessions often extended beyond the scheduled time, and students stayed online to share and connect with one another and me, their teacher.

For this study, I collected data from one full third-grade class and half of another class that was from a second/third-grade split. I chose this group of 36 students because this class and

a half were taught together. They had 36 pieces of data each lesson, and their recess was at the same time as the Grade 3 and 4 special day class.

All parents were informed of this intervention through a letter I generated, printed on the principal's letterhead, and distributed through the classroom teachers. The 36 participants in the project included 15 students who identified as girls and 21 who identified as boys. Among the 36 participants, three were identified as English learners, and six had 504 education plans. A majority of participants in this study identified as Asian, with significant representation from countries including India, Bangladesh, Korea, China, and Taiwan. Additionally, the remaining students identified as White, Black, Hispanic, or belonging to Two or More Racial backgrounds.

Data Collection Strategies

To determine the effectiveness of this unit, I designed four data collection instruments to triangulate information and ensure the reliability of results. The instruments included an individual *Pre/Post Autism Awareness Ticket* (Appendix A) given before and after the intervention was taught. I collected work samples from group participation in a *Group Autism KWL Chart* (Appendix B), and after each lesson, I collected data through written responses on a *Lesson Exit Ticket* (Appendix C), answering the same question each week: *What did you learn about autism spectrum disorder?* These three instruments included gathering written responses, reviewing weekly, and later being subjected to analysis, categorization, and coding. Following this process, I utilized the Autism Engagement Continuum to assign scores to the participants' responses. Finally, I collected data through systematic observation (SO) field notes (Appendix D) on the playground over nine weeks. I analyzed the systematic observation data qualitatively and used it to determine the effectiveness of the intervention.

Pre-Post Autism Awareness Ticket

On the first day of this intervention, I asked students to complete a *Pre-Post Autism Awareness Ticket* (Appendix A). Participants had 15 minutes to complete this assessment before the introduction of the intervention. This ticket was an assessment tool I designed to determine general awareness, understanding, empathy, and engagement prior to the unit taught on autism awareness.

This ticket included nine questions to evaluate participants' familiarity with students diagnosed with Autism; three questions required a yes or no response, and six were open-ended questions that required a short-written answer. The first questions asked participants: *Have you heard the word Autism?* and *describe a person with Autism*. I used these questions to assess their cognitive understanding. Many participants stopped here if they circled *no, they had not heard the word autism*. To determine affective attitude, the ticket asked participants: *When around a person with Autism, what feelings do you have?* Finally, I wanted to understand the amount of engagement that was taking place and asked: *Have you talked with, played with, or helped someone with a disability? If so, please explain*. The purpose of asking these questions was to help understand students' awareness, understanding, empathy, and engagement prior to the unit of intervention.

At the end of the unit, after the last lesson was taught, participants again filled out a fresh copy of this *Pre-Post Autism Awareness Ticket* (Appendix A). I analyzed, categorized, and coded the qualitative data from these written responses and assigned scores from the *Autism Engagement Continuum*. I then used these quantitative scores to compare between the pre-unit tickets to help me assess the effectiveness of my intervention.

Group Autism KWL Chart

KWL charts are graphic organizers designed to activate prior knowledge, promote higher-order questioning, and engage students in small groups. Prior to the first lesson, I created large Autism KWL charts (see Appendix B) for each table group. Above each circle is a heading: *What do you KNOW, What do you WANT to know, What did you LEARN*. The classroom teacher had established these table groups prior to the lesson. After a brief overview of the unit, the small groups brainstormed things they knew about autism, such as facts, vocabulary, or other relevant information, and wrote this information in the *K* circle. Next, we brainstormed as a whole class, things we wanted to know about autism, and finally, as a table group, participants discussed and wrote questions in the *W* circle. Finally, during the fourth session, participants again discussed and recorded as a group *L-circle* throughout the unit of study on autism spectrum disorder. I translated the students' written answers, which were qualitative responses, into quantitative data using the *Autism Engagement Continuum*.

Lesson Exit Ticket

At the end of each lesson, I asked participants *What did you learn about autism spectrum disorder during this lesson?* They had five to seven minutes to write an answer on a half sheet titled *Lesson Exit Ticket* (Appendix C). The objective of each lesson was to increase awareness, deepen understanding, improve attitude, and ultimately elicit engagement with students on the autism spectrum. To determine the effectiveness of my teaching, I translated the students' written answers, which were qualitative responses, from each lesson ticket into quantitative data using the *Autism Engagement Continuum*. Participants had many great responses, including, “Autism can be a superpower,” “Everyone has different perspectives,” and “Autistic students can see things differently.”

Systematic Observation on the Playground

Students with autism spectrum disorder are often not engaged and do not initiate interaction with neurotypical peers on the playground. However, according to Locke et al. (2016), ND students may engage if peers initiate (p. 2). Systematic observation (SO) tools on the playground can provide important insight into social engagement between all students. These tools "involve observing and recording observable events using standard procedures, typically using one or more of the four basic observation tactics: event recording (ER), duration recording (DR), interval recording (IR), and momentary time sampling (MTS)" (McKenzie & Vander Mars, 2015, p. 14).

Based on the information found in these two articles, I created a form that tracked which students with special needs interacted or engaged with neurotypical students, where on the playground, and how. Though my intervention was intended for the general education participant, there were far fewer students with special needs to watch, so I focused on the students with special needs to gather the most data.

For example, most interactions happened in the play structure tanbark area because that is where the students with special needs spend most of their recess. Many interactions only included one or two exchanges. The systematic observation (SO) form changed three times throughout the nine weeks of observation because data were challenging to gather based on how students interacted and where they played. I intended to observe student interaction on the playground three times a week for nine weeks for a total of 27 observations. Because recesses were canceled during wet weather conditions this spring, the observations were limited to six observations before the intervention, nine observations during, and five observations after the intervention, for a total of 20 observations.

Procedures

This intervention took place over nine weeks between March and May. There was a one-week spring break in the middle of the study. I conducted this study in three phases. In the pre-intervention phase (weeks 1 and 2), I recorded systematic observations of the general education third graders and their interactions and engagement with the students in the special day classes at recess on the playground. During the intervention phase (weeks 3 through 6), I taught one lesson a week for 50 minutes, four weeks in a row, on autism spectrum disorder. The post-intervention phase (weeks seven through nine) included systematic observations of the general education participants and their interactions with special education students on the playground during recess. All data collected were anonymous.

I designed this unit of study based on empirical research by Campbell et al. (2019). Lessons included descriptive, explanatory, and directive information through a positive lens geared to multiple learning intelligences and modalities. I adapted the materials for the lessons from Campbell et al.'s published resource called *Kit for Kids*. This free curriculum was research-based and written to teach elementary school students about autism.

The unit of study included two elements of the school district's strategic direction. A priority of the district was to implement an inclusive learning environment and focus on the social-emotional well-being of all students in an inclusive learning environment. An inclusive learning environment is safe, equitable, and provides a sense of belonging for all students and staff. The district embraces the idea that it is the teachers' responsibility to engage all students in age-appropriate learning opportunities on diversity, equity, and inclusion issues. These strategic directions form a foundation for this unit of study.

Pre-Intervention

During recess, I conducted the pre-intervention phase of the project on the playground. As the PE teacher, I know most third-grade students, and during this first phase of observation, I searched for third-grade groups on the field, the play structure, and the blacktop to see if they were interacting with the students from the special day classes. After the first day of observation, I realized my method was ineffective, and I considered other ways to determine whether general education students include students with special needs in recess activities. After reviewing my research question, I turned my attention to the students in the special education classes to see if the general education participants were interacting with them. Again, I monitored the field, the play structure, and the blacktop. Finally, because most students with special needs were playing in the tanbark area either on the swings, bars, or play structure, I focused on this small area, honing my attention on the special needs students because there were far fewer of them than third graders to observe. The analysis of systematic observation data focused solely on the interactions and engagement between 36 third-grade students from one general education third-grade class and one third-fourth-grade combined class to see who participated in the intervention and with the students with special needs.

Intervention

I taught this intervention to 108 third-grade students in general education. However, the analysis of this data source focused solely on the understanding and interactions of 36 third-grade students from one general education third-grade class and one second-third-grade combined class who were taught together as one class for this intervention. The Autism Awareness Unit consisted of four 50-minute lessons informed by my literature review and guided by my research question: *How does a unit of study about autism spectrum disorder (ASD)*

affect neurotypical (NT) peers' understanding of and interaction with students with autism on the playground? The lessons were taught four Fridays in a row.

Lesson 1. Lesson 1 had three objectives. The first objective of lesson 1 (see Appendix E) was to assess the understanding and engagement of NT students using the Pre-Post Autism Ticket prior to the unit intervention. The second objective was to introduce the unit and offer a general definition of autism spectrum disorder (ASD). The third objective was to teach NT students about perspective and how students with autism may have a different perspective of the world. In this activity, participants used playdough to create an object of their choice. Next, they asked their elbow partner to identify the object. Students quickly learned that people see things differently. Finally, on an exit ticket during the last five minutes of class, students answered the question: *What did you learn about autism spectrum disorder during this lesson?*

Lesson 2. In lesson 2 (Appendix F), the objective was to create an overwhelming multisensory experience for the participants to simulate an experience many students with autism have. Empirical research suggests that sensory input can overwhelm students with ASD (Hodges 2021). As the general education participants entered the classroom, there was an overwhelming smell of lemon Febreze and pulsating strobe lights. Sound from three sources filled the room, including a dialogue through a bullhorn, music through surround sound, and multiple sirens blaring through a speaker were happening at the same time.

Lesson 3. The objective of lesson 3 (Appendix G) was to teach neurotypical children how to better understand their neurodiverse friends. I used the Kit for Kids curriculum published by Organization Autism Research (OAR), which had been designed to create a more inclusive classroom with information and understanding of autistic students. I showed a video about Autism and read a book about a student with Autism. The students worked a few pages together

from a workbook published by OAR, and we concluded with descriptive information and a discussion about how to be a genuine friend to neurodiverse students on the playground. I assessed learning through a lesson exit ticket. The question the participants answered on their ticket was: *What did you learn about autism spectrum disorder during this lesson?*

Lesson 4. Lesson 4 had four objectives (Appendix H). First, I created a simulation that highlighted the challenges faced by students who do not verbally communicate. I gave the students a note card containing one of six basic needs. Students paired up together and tried to communicate their needs without talking. Once the partner understood the need, they took the non-verbal student to the proper station. These stations included toilet paper, water, food, a jacket, a first aid kit, and sensory toys, which are toys for students with autism to help them focus and calm down when stimulated. After the simulation, we discussed the emotions and frustration of not being able to communicate verbally.

Next, we reviewed the Autism Awareness unit and discussed participants' new understanding and tools learned to foster engagement on the playground. Then, as a table group, students finished the *Autism KWL charts* (see Appendix B). Finally, students filled out the *Pre-Post Autism Awareness Ticket* (Appendix A). Together, I used these data to determine the unit's impact on participants' awareness, understanding, and engagement with students on the autism spectrum. I scored all written responses based on the *Autism Engagement Continuum* and compared them to the pre-unit ticket responses.

Post- Intervention

My post-intervention included systematic observation of the general and special education students interacting on the playground during recess. Limiting my attention to the students with special needs within the tanbark playground area, I learned how best to observe

student engagement and interactions. The last iteration of the Systematic Observation field note form (Appendix D) was the most successful. This form included the names of special education students listed in alphabetical order, color-coded by class, and separated according to activity. This form allowed me to identify interactions among participants and their peers quickly.

Plan for Data Analysis

I collected data through multiple sources. Each data instrument was collected to answer the research question: *How does a unit of study about autism spectrum disorder (ASD) affect neurotypical (NT) peers' understanding of and interactions with students with Autism on the playground?* This autism awareness unit comprised four lessons with numerous written responses for assessing the effectiveness of my intervention. While these responses were initially qualitative, I converted them into numeric values to obtain a more comprehensive assessment of my teaching effectiveness. I made the decision to convert the qualitative data into quantitative values by reviewing the responses and scoring them using the Autism Engagement Continuum.

I developed this continuum based on the numerous written responses provided by the participants. For instance, following each of the four classes taught, participants were prompted with the question, 'What did you learn about autism spectrum disorder during this lesson?' and they recorded their responses on an exit ticket. Additionally, the group KWL charts utilized written responses to convey their information. Lastly, participants provided written responses on the Pre/Post Autism Unit tickets. I analyzed all of these written responses in the context of the research question.

I thoroughly analyzed these data by searching for commonalities, including words indicating awareness, understanding, acceptance, empathy, and engagement. Over time, distinct categories emerged, and I coded each response. As a result of this process, I developed the

Autism Engagement Continuum (Appendix I). I then placed the codes on a numeric scale, progressing logically from cognitive understanding to behavioral engagement. This continuum is informed by research that suggests that presenting information directly and explaining it can improve attitudes, with a positive attitude being linked to increased levels of empathy. This, in turn, may facilitate more significant interaction between neurotypical and neurodiverse students (Campbell et al., 2019).

The continuum scale ranged from 0 to 4. Participants who did not respond to the question or provided responses unrelated to the topic were assigned a score of zero (0). A response that acknowledged awareness of the topic or demonstrated knowledge of a factual aspect received a score of one (1). For example, if a written response mentioned concepts like 'people with autism see the world differently' or 'autism is something you are born with,' it was categorized as 'awareness' and received a score of 1 on the continuum. Responses that exhibited a more profound cognitive understanding and acceptance of neurodiverse students were scored two (2). Likewise, a written response, such as “Students with autism are sensitive to loud noises, which can lead to tantrums or meltdowns,” or “Though there are differences in the way we see the world, we can have many things in common,” indicated a level of understanding and was assigned a score of two (2). Participants whose written responses displayed a positive attitude or demonstrated empathy were categorized as *empathy* and received a score of three (3). For instance, an example of a score of 3 included responses like, “A person with autism has a harder time than I do in class,” or “Don't be jealous when a student with autism gets more attention than you,” or “The way students on the spectrum experience the world can feel scary, and that is hard.” If a written response indicated engagement or an intention to establish a meaningful connection, such as offering help or support, it was categorized as *part of the solution*, and was

awarded a score of four (4). An example of a written response that earned a score of four was, “Treat students with autism as you would treat any friend,” or “It is important to be patient and kind when students with autism don’t respond to you.”

I used the *Autism Engagement Continuum* to assess all written responses, enabling me to track participants' progress in understanding, awareness, empathy, and engagement with neurodiverse students. Although the responses were initially qualitative, I quantitatively used their assigned scores after categorizing, coding, and scoring them. I calculated the mean of these scores across all sources to determine central tendencies. I then compared the results based on the data collection date to identify week-to-week differences. In my initial plan, I intended to quantitatively analyze all data from the nine weeks of systematic observation on the playground to triangulate results. However, due to the nature of my field study notes, I analyzed this data qualitatively.

Scoring four assessment instruments this way provided a triangulation of data sources, allowing for multiple viewpoints to consider when interpreting results. This triangulation more accurately revealed how educating participants with a unit of study, including explanatory and descriptive information, can improve one’s understanding, which may change one's attitude and behavior toward students with autism on the playground.

Summary

This action research project aimed to determine the effectiveness a unit of study about Autism Awareness had on a class of general education third graders. Through systematic observation, I collected ten weeks of data on the interactions participants of my intervention had with students with autism on the playground. The SO was the most critical piece of data because

it was directly attached to my question: *Does a unit of study improve interactions on the playground?* I combined this data with the three other instruments to triangulate results.

Before and immediately after the intervention, I administered the Pre/Post Autism unit ticket to compare understanding and engagement from the written responses. I compared and analyzed the table group data recorded with written responses on the Autism Awareness KWL charts. These table group charts had rich data of students working with their peers to record their understanding. Finally, participants wrote written responses on an exit ticket each week about what they learned or experienced in the lesson. Analysis of these weekly exit tickets helped identify the levels of understanding and engagement demonstrated by participants. Together, these four essential pieces of data allowed me to compare participants' level of understanding and engagement of participants among students with autism on the playground.

This chapter described specific details about my action research project, including information about the setting, participants, data instruments, procedures, and plan for data analysis. As we move to Chapter IV, I will describe the data collected, present a thorough examination of the findings, and conclude from my evidence.

Chapter IV

Findings

The purpose of this action research project was to study the efficacy an autism awareness unit taught to neurotypical peers had on participants' awareness, understanding, and engagement with neurodiverse students on the playground. My action research question was: *Does a unit of study about autism spectrum disorder affect neurotypical peers' understanding of and interactions with neurodiverse students on the playground?* While teaching at my school site, I observed students with autism wandering alone while neurotypical peers passed by without regard. Research by Campbell et al. (2019) attribute this behavior to a lack of education and understanding about students with disabilities. They suggest that peer education may improve the social experiences of students with autism and should include three message types: descriptive, directive, and explanatory information to improve understanding.

Another critical element to improved attitudes and willingness to engage includes neurotypical peer exposure to students with special needs in inclusive classrooms, which has been empirically proven to enhance understanding and engagement. De Boer et al.'s (2012) review highlights the importance of social participation within inclusive classrooms and notes that neurotypical attitudes improve with increased knowledge and understanding of peers with disabilities. This exposure, coupled with disability education, has been linked to enhanced social acceptance among children.

This action research project aims to fill the gap between students with special needs independently playing at recess and neurotypical students by improving understanding and engagement with all students on the playground.

Overview of Methods and Data Collection

To address this gap and improve the participation and engagement of neurodiverse students on the playground, I developed a four-lesson unit to educate neurotypical third-grade students about autism spectrum disorder (ASD). This peer education autism awareness unit, taught on four consecutive Fridays for 50 minutes, included information presented through direct instruction, perspective activities, simulations, videos, a storybook, a group project, and quiet reflection. The primary goal of this intervention was to increase awareness and promote social interaction among typically developing peers through direct and explicit instruction. The intervention was informed by a review of the existing literature, which highlighted the critical role neurotypical peers play in the success of inclusion, how improved attitudes and empathy improve social participation, and the overall success of inclusion efforts.

The literature review identified instructional strategies to enhance attitudes and interactions among neurotypical and neurodiverse students. Peer education could significantly enrich the social experiences of students with autism. This intervention aimed to cultivate social responsibility, improve students' social skills, and promote a deeper understanding of diverse perspectives. The literature review highlighted several effective techniques to identify understanding and engagement.

An unexpected event, however, required me to make a slight shift in my approach. While teaching the first lesson of my intervention, a participant inquired about identifying students with autism in the Special Day Class (SDC). I emphasized that we could not assume all SDC students had autism and that identifying them was not our role, according to legal and confidentiality regulations. I critically reflected on the unit's objectives and my instructional delivery. As a

result, I expanded the scope to include autism within the context of special education and the 13 disabilities that qualify students for special education.

I used four data collection strategies to understand the efficacy of this unit. First, I gave a *Pre/Post Autism Awareness Ticket* (see Appendix A) before and after the intervention. Second, I collected and analyzed work samples from a *Group Autism KWL Chart* (see Appendix B). Third, I collected data through *Lesson Exit Tickets* after each lesson (see Appendix C). Finally, I collected Systematic Observation data in three phases over a nine-week period on the playground by observing neurotypical and neurodiverse students interacting and engaging together at recess (see Appendix D). I achieved reliable results through triangulation using these four data collection strategies.

Demographics of Participants

I had the privilege of teaching this autism awareness unit to the entire third grade at my school site. This included four and a half classes, approximately 108 students. I collected data from one full third-grade class and half of another class that was from a second/third-grade split. I chose this group because this class and a half were taught together. They had 36 pieces of data each lesson, and their recess was at the same time as the Grade 3 and 4 special day class.

The 36 participants in the project included 15 students who identified as girls and 21 who identified as boys. Among the 36 participants, three were identified as English learners, and six had 504 education plans. A majority of participants in this study identified as Asian, with significant representation from countries including India, Bangladesh, Korea, China, and Taiwan. The remaining students identified as White, Black, Hispanic, or belonging to two or more racial backgrounds.

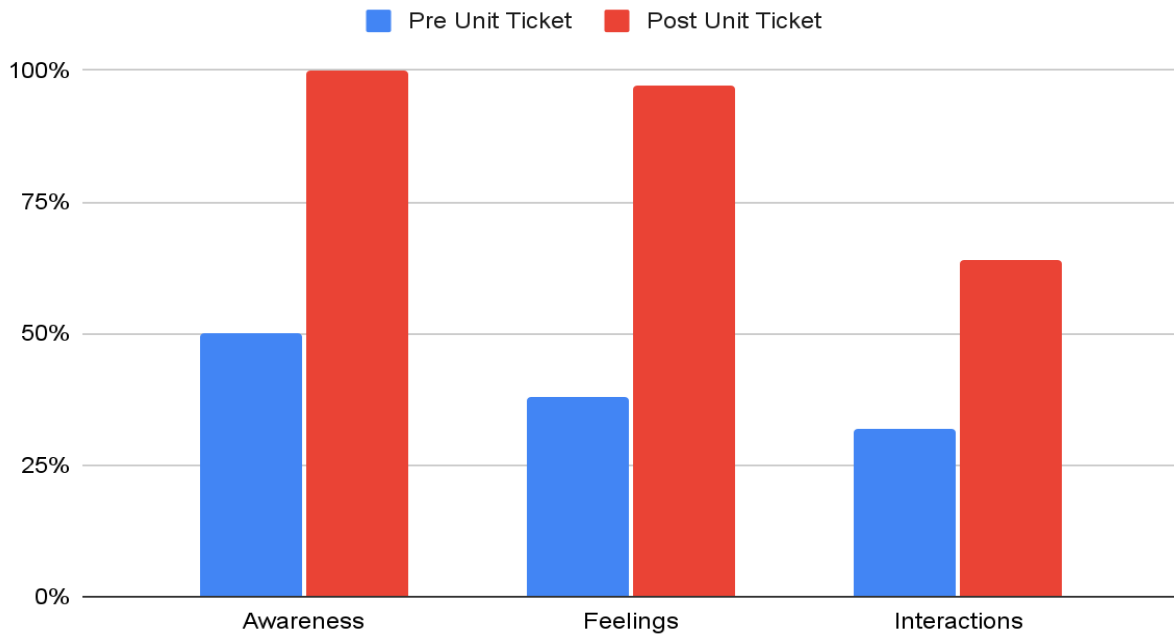
Analysis of the Pre-Post Autism Awareness Ticket

The Pre-Post Autism Awareness Ticket (Appendix A) was administered as a multi-assessment tool to gauge participants' awareness, understanding, and engagement with students on the autism spectrum. This tool comprised nine questions, with three requiring a simple yes/no response and six involving open-ended questions that prompted students to provide brief written answers. I analyzed the responses, with multiple readings, where categories emerged. I coded and evaluated these responses using the Autism Engagement Continuum, allowing for quantitative scoring to comprehensively assess the effectiveness of the peer education intervention.

The three yes/no questions aimed to explore participants' cognitive understanding or awareness of autism, their affective attitude or feelings towards students with autism, and their engagement or interactions with students having special needs on the playground. The six open-ended questions required a short-written answer. As I read students' written responses multiple times, categories emerged, and I coded responses. These codes were scored using the Autism Engagement Continuum. I quantitatively recorded these scores. I used the tallies of these responses to calculate percentages which are displayed in Figure 1.

Figure 1

Pre-Post Autism Awareness Ticket



At the beginning of the unit, only 50% of the participants had prior exposure to the term *autism*. However, after completing the four lessons, 100% of students indicated awareness and understanding of autism spectrum disorder.

I observed a shift in the emotional domain. When asked about their feelings when interacting with an autistic student before the intervention, only 38% of students responded. However, following the intervention, nearly all participants, 96%, provided emotional experiences when engaging with students with autism. The expressed emotions included empathy, compassion, curiosity, and understanding, with words such as 'compassionate,' 'patient,' 'curious,' and 'empathetic.'

The most encouraging statistic was in the behavioral domain. Before the intervention, only 32% of students reported engaging with their peers on the autism spectrum; however, after

the intervention, 64% of students shared their experiences of engaging with students with autism. These neurotypical peers provided accounts of how they actively supported and interacted with their neurodiverse peers.

Analysis of Autism KWL Chart

Based on my experience of students working together, group projects are an effective way to reinforce learned content and generalize new information. I introduced the Autism KWL chart after presenting the unit's overview just prior to the first lesson. In small groups, participants discussed their existing knowledge about autism spectrum disorder. At the end of the first lesson, the groups added to their chart and formulated questions that served as content for the upcoming unit.

As the intervention concluded in the fourth lesson, small groups revisited their KWL charts. This time, they listed the new information they had acquired, including the answers to the questions they had initially posed. I gathered, coded, and categorized the resulting data into themes (as illustrated in Figure 2). These responses are clustered within three domains: cognitive understanding, affective attitudes, and behavioral intentions.

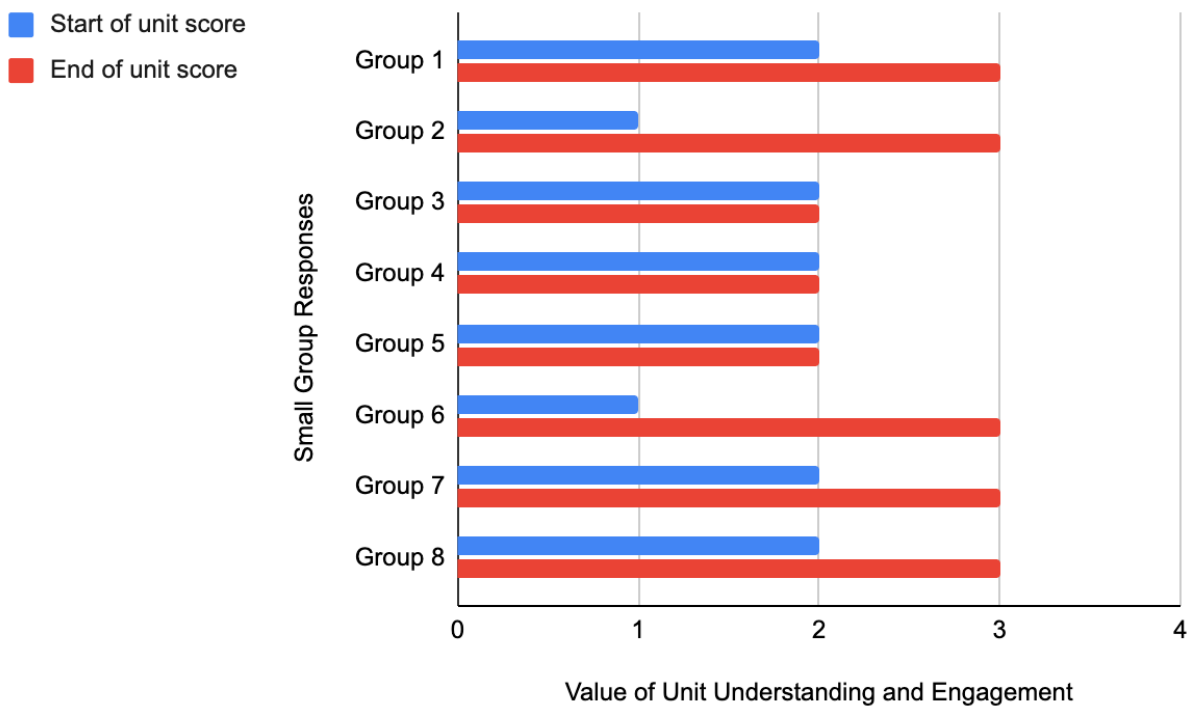
I used the *Autism Engagement Continuum* to assess all written responses, enabling me to track the progress participants made in understanding, awareness, empathy, and engagement with neurodiverse students. Although the responses were initially qualitative, I quantitatively analyzed their assigned scores after categorizing, coding, and scoring them. I calculated the mean of these scores across all sources to determine central tendencies. I then compared the results based on the data collection date to identify week-to-week differences. In my initial plan, I intended to quantitatively analyze all data from the nine weeks of systematic observation on the playground

to triangulate results. I conducted qualitative analysis on this data because of the nature of my field study notes.

Within Figure 2, the blue value reflects the initial understanding and engagement levels participants exhibited at the unit's outset. The red line signifies participant understanding and engagement levels at the end of the intervention. It is important to note that while the three groups may seem to have made no progress, it is essential to consider the wide range of learning that can occur between the value scores on the engagement continuum. Students' growth may not necessarily include a significant leap from understanding to empathy. These groups may have shown some growth, but it may not have been substantial enough to score higher on this grading scale.

Figure 2

Autism KWL Chart Responses



Analysis of Lesson Exit Tickets

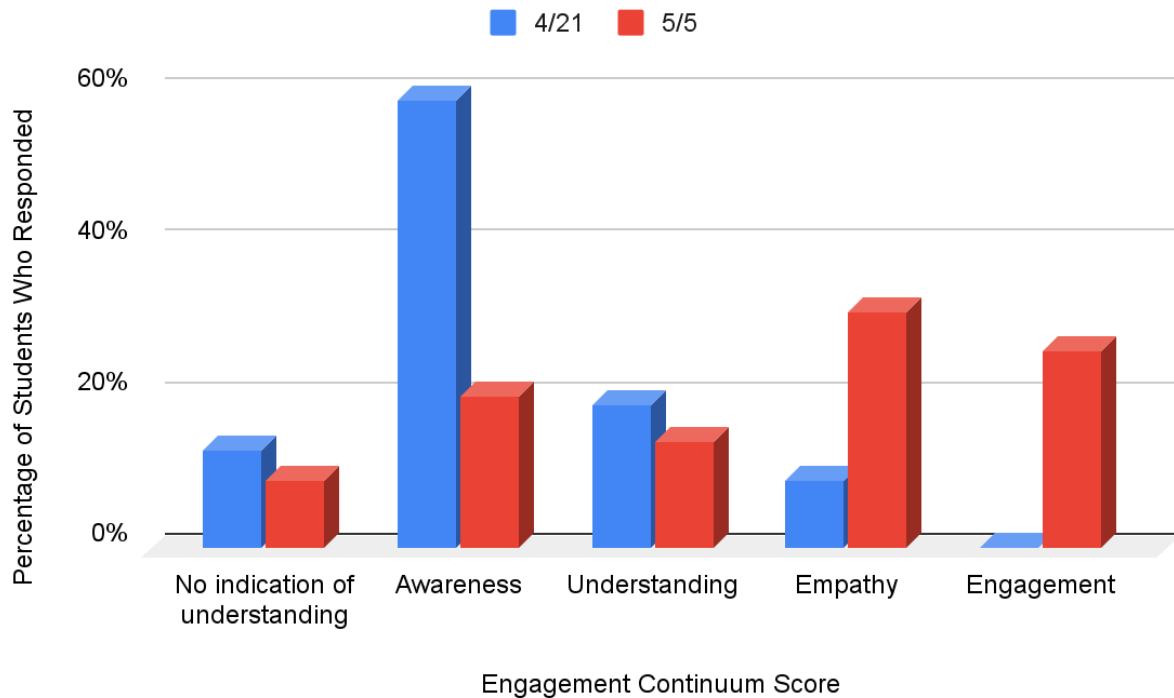
After each weekly lesson, I asked participants to complete an exit ticket, responding to the question: "What did you learn about autism spectrum disorder during this lesson?" (see Appendix C). I gave them a five to seven-minute window to reflect and record their thoughts about the lesson. Some examples of student responses included statements such as, "We are all special and unique" and "We all share both similarities and differences." Some participants even wrote entire paragraphs demonstrating their understanding, empathy, and engagement with the topic.

I reviewed the participants' responses weekly and revisited them collectively after the unit ended. This process spanned several weeks as I read, re-read, and analyzed the data. Over time, distinct categories emerged, allowing me to code the written responses. I then scored these responses using the Autism Engagement Continuum.

The primary goal of the unit was to enhance awareness, understanding, and engagement among participants regarding autism spectrum disorder (ASD). The exit ticket data (Figure 3) illustrates the progress made. At the beginning of the unit, a significant percentage of the participants (59%) indicated they were only *aware* of autism, while a smaller portion expressed *understanding* (19%), *empathy* (9%), and *engagement* (0%). However, by the end of the unit, the data shows a positive shift: awareness decreased to 20%, understanding remained stable at 14%, but empathy significantly increased to 31%, and engagement emerged, with 26% reporting active involvement. These results suggest that peer education effectively advanced participants along the Engagement Continuum, guiding them from awareness to understanding, empathy, and meaningful engagement.

Figure 3

Lesson Exit Ticket Responses



Analysis of Systematic Observation Form of Playground Interactions

Research indicates that a systematic observation (SO) method can be used to observe physical activity, social interactions, and relationships during play among children. This tool involves observing and recording observable events using established procedures (McKenzie & Vander Mars, 2015). I created an SO field note form to track neurotypical students' interaction with the students with special needs on the playground. I used the SO form to assess whether a unit of study teaching autism awareness had improved interaction between neurotypical and neurodiverse students on the playground by observing and analyzing the data.

The pre-intervention period occurred before the unit of instruction, and these observations were a starting point for comparison. These baseline data were a total of six observations in three weeks and included two iterations. While looking for data specific to my

intervention, I quickly learned that identifying the 36 students who had participated in my intervention amongst 200 other students at recess was very difficult. After three observations with no success, I changed my focus to the students with special needs and their engagement with neurotypical students, where this took place on the playground, and how students interacted or engaged with one another. There were 12 students from the special day class (SDC), and most congregated around the play structure. Two of these students often played basketball, one always walking the perimeter of the tanbark, and the other nine students usually played on the swings, slide, or structure.

The SO form underwent three revisions during the nine weeks of observation due to challenges in gathering data related to students' interactions and areas where they played. The literature suggested using timed intervals to survey students for 5 seconds and then tally for 10 seconds (Locke et al., 2016). However, this method needed to be simpler for me to execute accurately. Another suggestion was to categorize interactions into five types: parallel play, offering equipment, offering help, pleasant exchanges, and mutual play or conversation (McKenzie & Mars, 2015). This approach also proved to be overwhelming for quick identification. After three more observations and numerous notes, I developed a field note form with two categories: "interactions" and "exchanges." An "interaction" referred to one or two words exchanged between neurotypical and neurodiverse students, while an "exchange" included extended interactions like play or conversation. This final SO form (see Appendix I) also included a roster of students from the special day classes so I could quickly scan for interactions. This final form proved to be the most successful in providing valuable data.

During this pre-intervention phase, there were two noteworthy events. In the fourth observation, I noticed two neurotypical students playing nicely with an autistic student on the

play structure while another neurotypical student asked an autistic student if he could push him on the swing. These were the first three instances of student-initiated engagements that I observed. I also observed that some students in the grade 3/4 SDC class were non-verbal. This highlighted the need to instruct participants on how to interact with non-verbal students, emphasizing the importance of patience and recognizing alternative signs of communication beyond verbal language.

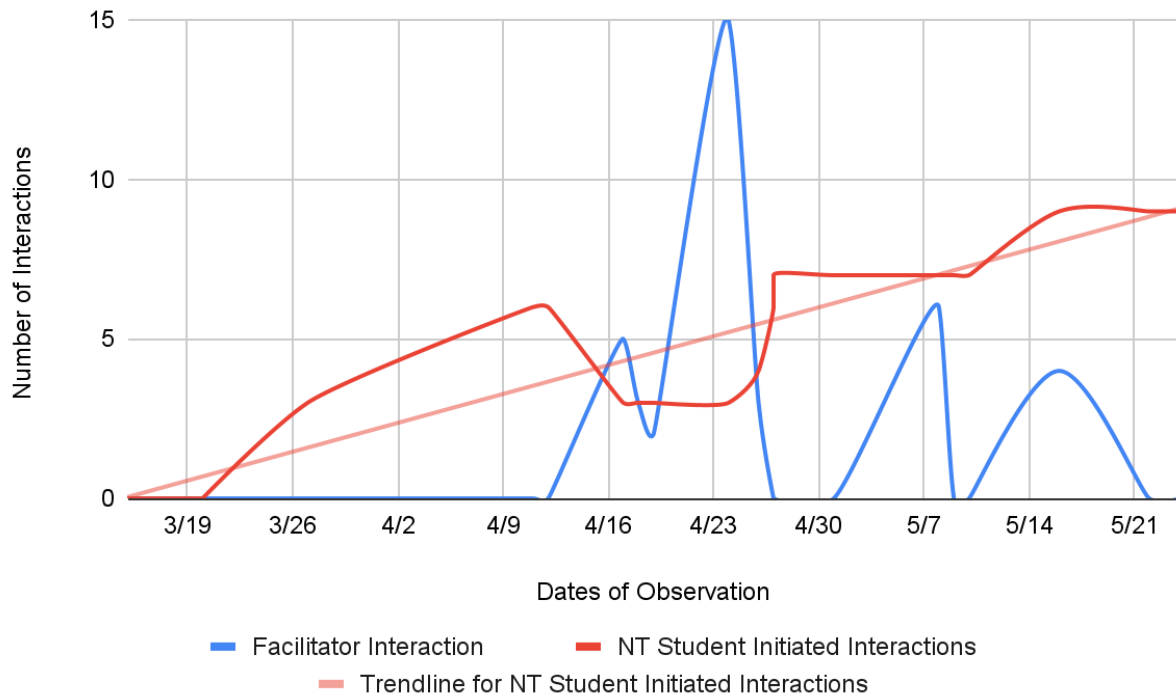
Figure 4 presents the dynamic progression of student interactions on the playground throughout the study. The figure shows the journey from baseline observations to peer education and inclusive engagement. The transition from my initial role as a research observer to that of a teacher and the subsequent impact on neurotypical students' interactions with their peers with special needs are proven in this visual representation. Figure 4 indicates the growth and improvement toward engagement demonstrated on the playground.

With the data collected and presented in Figure 4, we can gain insights into the progression toward student engagement throughout this study. Notably, it was during the second teaching session in the fifth week of observation that strategies for engaging students with special needs were introduced to the participants. After this lesson, 15 participants showed up at the play structure to engage with students in the special day classes.

This overwhelming response forced me to pivot from observer to teacher on the play structure. I spent the next several recesses teaching neurotypical students how best to engage their peers with special needs.

Figure 4

Systematic Observation Results



Following the intervention, I conducted five observations within three weeks. These observations revealed a decrease in teacher-initiated interactions and an increase in student-initiated interactions. This change suggests that participants demonstrated consideration for students with special needs, which had not been seen prior to the intervention. This was shown by their use of communication, such as saying, "move please," instead of pushing by and warning peers before stopping a swing abruptly.

After reviewing systematic observation field notes, three main categories emerged: the need to review playground rules with all students, suggestions for neurotypical students to engage among their special needs peers, and recommendations for all adults responsible for monitoring the playground. The data indicated a clear trend specific to the research question: the number of neurotypical students displaying interest in and engaging with students from special

day classes increased over time, while the need for intervention by the teacher-researcher decreased.

Summary

Chapter IV presented the findings obtained from triangulating the data collected in the action research study. These findings indicate that the intervention positively affected the neurotypical third-grade participants who answered the question: *Can a unit of study about autism spectrum disorder (ASD) impact the understanding, engagement and interactions of neurotypical (NT) peers with students who have autism on the playground?* The subsequent chapter marks the conclusion of this report, where a summary of the research is provided, and the study's findings are discussed and interpreted.

Chapter V

Conclusions and Next Steps

The sounds of recess on the playground evoke a symphony of joy, negotiation, trepidation, and competition, where the unspoken rules of childhood are written in laughter and adventure. Yet, for some, recess becomes overstimulating and an anxiety-inducing experience. As a teacher, I am frequently approached by curious students wondering why some of their peers seem to dominate the swings, perch on the play structure, or wander the perimeter of the playground covering their ears. For students with autism, this behavior serves as a way to self-regulate, providing insight into the diverse ways they navigate the social landscape of the playground.

In exploring the importance of social inclusion during recess at an elementary school, this action research project delved into the effectiveness of an autism awareness unit taught to neurotypical students in enhancing participants' awareness, understanding, and engagement with autistic students on the playground. The importance of this action research project rests on the moral and legal requirements of educational inclusion for students with disabilities and the importance of social and emotional learning and development of neurotypical students, specifically their empathy and attitude towards students who are different from them.

A review of the literature provides a context and background for my intervention. The research indicates many benefits to including students with special needs for both neurodiverse and neurotypical students. Educational inclusion improves access to the general curriculum, promotes social participation, and enhances communication skills for neurodiverse students. It provides a dynamic learning environment with diverse interactions, challenges discriminatory

practices, and fosters essential life skills for neurotypical students, such as empathy and understanding.

Implementing successful inclusion has its challenges. Current literature emphasizes the significant impact of attitudes among general education teachers and neurotypical peers. Studies indicate that peer education and exposure through interventions with individuals with special needs improve understanding and attitudes, which in turn positively impacts playground engagement.

Therefore, I created and taught an intervention to improve understanding, develop empathy, and facilitate engagement with neurotypical students at my school. It included four lessons that delivered information about the disability autism, behaviors that are associated, and strategies to create a mutually inclusive space to answer the research question: *Can a unit of study about autism spectrum disorder (ASD) enhance neurotypical (NT) peers' understanding, engagement, and interactions with students with autism on the playground?*

Chapter IV presented the findings obtained from triangulating the data collected in the action research study. These findings indicate that the intervention enhanced understanding of autism spectrum disorder and positively influenced the attitudes of neurotypical third-grade participants. The present chapter marks the conclusion of this report, where a summary of the research is provided, and the study's findings are discussed and interpreted, aligning with relevant literature. This concluding chapter is structured into five sections: a summary of findings, an interpretation of findings, reflections on limitations, plans for future action, and a summary of this action research project.

Summary of Findings

My intervention included four data collection tools to triangulate information and ensure result reliability. Three of these intervention tools were qualitative, asking for written responses from the students. These three instruments were the Pre-post Autism Awareness Ticket (Appendix A), the Autism KWL chart (Appendix B), and the Lesson Exit Ticket (Appendix C). To quantify participants' understanding, awareness, empathy, and engagement, I translated students' written responses into numerical data after I identified common words and developed themes. These words and themes fell into categories on the Autism Engagement Continuum. They were scored from *awareness (1)* with words such as different, similar, perspective, communication, to *understanding (2)* with words such as accept, sad, badly, kindness, feelings, to *empathy (3)* with words such as perspective, or feel for, to *engagement (4)* with words such as we, together, helped, played. The final instrument to assess effectiveness was the Systematic Observation form (Appendix D), which measured engagement and interaction with tallies. Instead, it was measured with written notes that served as examples to model and instruct participants as they played with neurodiverse students.

Pre-Post Autism Awareness Ticket

The Pre-Post Autism Awareness Ticket (Appendix A) was given to measure participants' awareness, understanding, and engagement with students on the autism spectrum pre-intervention. The analysis indicates that before the unit began, only 50% of participants had heard the word "autism." After the four lessons, 100% of students were aware. Prior to the intervention, 38% were aware of feelings they had around students with autism; however, in the end, the data indicated 96% were aware, and in the behavioral category, 32% of participants

indicated interaction on the playground prior to the intervention. After the unit, 64% of the participants reported interacting with students with special needs.

The findings of the pre-intervention ticket data revealed a collective need for participants to strengthen their empathy skills, and the post-intervention data demonstrated growth in the affective domain, positively impacting participants' understanding and interactions with students with special needs. This conclusive evidence underscores the effectiveness of the intervention lessons in fostering an improved understanding and positive engagement with peers with special needs. This shift underscores the success of the intervention and the vital role of peer education in promoting engagement, empathy, and positive interactions with students with special needs.

Autism KWL Chart

The KWL chart was used to record table group discussions and synthesis of the autism awareness unit information. Participants followed a three-step process, listing their knowledge-generating questions and recording the information they learned in the final session. The findings highlight those students who had prior exposure to individuals with autism, whether through personal relationships like family members or neighbors, were notably more comfortable with the topic of autism when working in a group setting. These students actively engaged in discussions, taking the lead by clarifying the information shared and providing additional insights that contributed to their fellow table group peers' understanding of the condition.

Post-intervention reflections on the group KWL charts revealed new themes around perspective. Several neurotypical student groups demonstrated positive shifts in both cognitive and behavioral aspects of their writing, showcasing improved attitudes and understanding. Students emphasized the importance of empathy, highlighting that being respectful and patient is crucial.

An unexpected finding was using inclusive language on most of the group charts. Five of the nine KWL charts used “we” instead of “they,” indicating inclusivity and a shared identity. I saw inclusive language in statements like “We all have different likes and dislikes” and “We all need help sometimes.” The charts emphasized the importance of respect through statements such as “We can be respectful by talking quietly and being patient.” This person-first language reflects an understanding of diverse experiences, validating each student’s unique qualities.

Lesson Exit Tickets

Participants were asked at the end of each lesson, *what did you learn about autism spectrum disorder during this lesson?* Given seven to 10 minutes, they wrote their responses on an exit ticket. The goal of each lesson was to improve awareness and understanding, attitude and engagement, and to assess my teaching effectiveness. I converted the qualitative responses from each ticket into quantitative data using the Autism Engagement Continuum. Analysis of the data indicated that 59% of participants were solely “aware” of autism, with fewer expressing “understanding” (19%), “empathy” (9%), and “engagement” (0%). By the unit’s end, there is a positive shift: awareness drops to 20%, understanding holds steady at 14%, empathy sees a notable increase to 31%, and engagement emerges at 26%. This suggests effective peer education and advancement along the *Engagement Continuum*.

Overall, findings indicate that some lessons were more impactful than others. The sensory stimulation simulation and playdough perspective lesson were the most impactful. The sensory stimulation simulation was powerful to several students. In this lesson, participants walked into a sensory-overloaded classroom with three different sounds from three different sources and two types of strobe lights flashing and pulsating. Participants’ written responses to this overstimulating session were long and detailed. They demonstrated that they understood that

this sensory overload may be similar to that of an autistic student's sensory overload when they enter the general education classroom. Responses also included feeling words, which indicated empathy when measured on the Autism Engagement Continuum.

The perspective lesson using playdough also was impactful. Participants were given a few minutes to make something with two different colors of playdough and then asked their elbow partner what they thought the object was. Often, the partner responses were similar to the maker's object. However, there were examples where context was necessary, and students learned that different perspectives are easy to see within the same object. Participant responses to the lesson question included information indicating that students learned that we all have different perspectives.

Systematic Observation Field Notes

A systematic observation (SO) method was employed to evaluate the interaction and engagement between neurotypical and neurodiverse students on the playground. This observation spanned nine weeks: three weeks before the intervention, four weeks during, and two weeks after. Informed by the literature review, an SO field note guide was crafted to monitor interaction and engagement amongst all students on the playground. Due to challenges in locating students and the rapid pace and volume of activity, a revision to the initial observation form was needed. Ultimately, the focus shifted from tallying engagement and interactions to capturing qualitative data, noting interactions, teaching needs, and student responses to modeling and instruction.

Data analysis indicated that there needed to be more interaction between students at the beginning of this project. As the intervention began, neurotypical students became interested and

appeared on the playground. As the intervention continued, more students came, but needed to learn how to initiate engagement with students with special needs.

Analysis of the findings also suggests the need for adult intervention to support neurotypical students in engaging with peers with special needs on the playground. Hesitancy and misunderstandings exist, requiring modeling and guidance. Transitioning from researcher to teacher, I promoted parallel play and encouraged neurotypical students to initiate activities. Addressing the challenge of self-initiation, I modeled practical questions for positive responses. Assertiveness training was given for situations involving shared equipment. Additionally, I identified instructional assistants as valuable resources for support and monitoring on the playground. An inclusive atmosphere was fostered by actively facilitating positive interactions, demonstrating the necessity for ongoing education and facilitator modeling on the playground.

To conclude this summary of findings, the four data collection tools highlighted that, collectively, participants synthesized a substantial amount of information, and subtle shifts in attitude were shown in their written responses. Their growth was only sometimes fully reflected in their score on the *Engagement Continuum*. It is crucial to recognize that changes in attitude can be gradual, and a transition from understanding to empathy may not consistently be shown on the charts. Some participants may have demonstrated improvements that were not entirely captured by a higher score on this scale; however, these subtle shifts were apparent in their interactions on the playground, indicating a change in attitude beyond what the numerical scores might suggest.

Interpretation of Findings

This action research project aimed to answer whether a unit of autism awareness taught to neurotypical students improved their understanding and engagement with neurodiverse students

on the playground. After carefully analyzing the findings, data indicated that my instruction unit improved understanding and engagement between neurotypical and neurodiverse students. Four key outcomes emerged from the intervention. The interpretation of findings are presented thematically, examining how elements from the literature review, combined with these results, were similar and different and how they contributed to enhanced understanding and engagement. First, I focus on how peer education influences understanding, then explore how deeper understanding positively impacts attitudes toward students with special needs. Next, I examine how exposure and interaction improved engagement and finally consider essential elements that should be incorporated into future units of instruction.

Peer Education Influences Understanding

Collected data suggests that peer education improved student understanding, and the quantitative results confirm that a unit taught on autism awareness raised awareness. These data emphasize the significance of this intervention, intending to promote understanding and facilitate engagement. This finding corresponds with Ginevra and colleagues (2021), who also found that providing accurate information about disabilities could improve attitudes toward peers with special needs. Their study highlighted the potential for changing children's attitudes, underscoring the importance of early interventions to foster positive attitudes toward disability.

I wrote my unit of intervention within the social emotional learning (SEL) framework, emphasizing the development of empathy by teaching students about the positive traits and strengths of individuals with autism. The approach involved bridging connections between neurotypical and neurodiverse students through shared similarities. Additionally, the intervention incorporated descriptive and explanatory instruction as essential components to be discussed and supported.

Teaching autism awareness within the social-emotional learning framework, focusing on self-awareness, attitude, social awareness, and empathy, helped to create an inclusive environment by encouraging neurotypical students to seek out students with special needs on the playground. It encourages students to appreciate differences, develop empathy for those who act and behave differently on the playground and adopt a positive and accepting attitude toward all. The social-emotional framework supported by the research of Ginevra et al. (2021) discovered that cognitive and behavioral interventions effectively enhanced attitudes, feelings, stereotypes, and behavioral intentions toward peers with disabilities. Further, the Collaborative for Academic, Social, and Emotional Learning (CASEL) emphasizes social awareness, which involves recognizing and fostering empathy for the emotions and viewpoints of others. It also underscores the importance of acknowledging and appreciating diverse life experiences and perspectives, even when faced with differences (*Advancing Social and Emotional Learning - CASEL*, 2023).

Learning through a social-emotional framework also promotes equity by emphasizing every individual's value to a community. Hodges and colleagues (2021) report that increasing self-awareness and recognizing strengths and differences allows participants to empathize with those who experience school differently (p. 3239). The resulting social awareness fosters inclusivity. These social and emotional competencies are crucial life skills for navigating diverse social situations, fostering positive relationships, and promoting a more inclusive and understanding community.

The literature review demonstrated that education focusing on positivity and emphasizing similarities played a crucial role in attitude and behavioral intentions. A study by Campbell et al. (2019) illustrated that when descriptive information, like age and shared interests, was shared between a child on the autism spectrum and participants, it positively affected attitudes and

behavioral intentions. Di Maggio et al. (2021) also emphasized the importance of how peers with disabilities are portrayed, noting that presenting positive information about their strengths has a beneficial impact on attitudes toward disabilities. Likewise, teaching from an asset-based frame and emphasizing similarities was key. A positive presentation of peers with disabilities is a predictor of positive attitudes. Attitudes matter as neurotypical attitudes significantly influence the school life of students with autism.

In my experience as a physical education teacher, conducting class meetings and creating opportunities to discuss individual strengths and weaknesses, especially in physical education, has often proven effective. This practice allows students to comprehend and visually observe how each person can contribute effectively in various ways. While teaching the autism awareness unit in a similar style, and highlighting strengths and weaknesses, I was able to align with the social and emotional competencies highlighted in the research and emphasizing their significance as life skills for navigating diverse social situations.

Deeper Understanding Impacts Attitudes

The data from this action research project suggested that as students gain a deeper understanding of those with different gifts and abilities, their attitudes improve, reducing misunderstandings and fear. Improved attitudes, in turn, facilitate positive and proactive responses to unfamiliar behavior. Teaching a unit on autism may help break down stereotypes associated with neurodivergent conditions because it challenges preconceived notions and encourages an understanding of the strengths and abilities of individuals with autism. According to deBoer et al.'s (2012) study, improving knowledge about disabilities is the starting point for intervention. Their research found that typically developing students became more accepting when their knowledge and understanding of peers with disabilities increased. Positive attitudes

among peers were identified as crucial for the successful social outcomes of inclusive education (p.389).

Exposure Improves Engagement

Following the intervention and exposure during recess, the study's findings revealed an improvement in neurotypical students' engagement with students with special needs on the playground. These results directly addressed the research question: *Would a unit of instruction enhance engagement on the playground?* Harry Triandis' (1971) research highlighted that attitudes are significantly influenced by positive or negative experiences, acting as predispositions to action. Research indicates that the most effective means of altering attitudes involves providing information and fostering repeated positive exposure. For example, Campbell (2004) and colleagues suggest that the most effective approach to improving perceptions and attitudes toward students on the autism spectrum is by using descriptive and explanatory information to educate peers about autism awareness. Hodges and colleagues (2021) report that exposure in an inclusive setting improves engagement (p.3236). Therefore, education improves favorable attitudes, and positive exposure improves engagement.

Additionally, as I reviewed the literature, I learned that peer intervention benefits interventionalists (Hume et al., 2019); however, training students in the field to engage actively is needed. The systematic observation data indicated that the instruction of physical engagement on the playground needs more attention. There are several different ways educators can improve this area of instruction. For example, Brock et al. (2018) highlight that "peer-focused interventions involve training and prompting peers to use strategies that promote positive play and interaction with students with ASD" (p. 2224). The need for training is consistent with the importance of comprehensive stakeholder involvement. My research indicated a need for adult

instruction on the playground. Several instructional assistants are lining the perimeter of the play structure, which could be enlisted to help model positive and supportive engagement, teaching respectful approaches between neurotypical students and students with special needs.

Additional Elements to Consider

An unexpected finding emerged, highlighting the need to present autism awareness within a broader ability awareness context. Focusing solely on autistic students may have been discriminatory, and adopting a broader approach aligns with ethical, legal, and moral considerations. This would promote an understanding of diverse abilities, creating an inclusive and respectful environment that values each individual without isolating or stigmatizing any specific group. Understanding autism within this framework emphasizes that neurodiversity is a natural part of the broader spectrum of human abilities. It helps neurotypical students develop a deeper understanding of the challenges individuals with autism may face, which fosters empathy. A more comprehensive and respectful approach to understanding and appreciating individual differences fosters a culture that values diversity.

Another unexpected finding emerged in the literature shortly after I began my research. It is crucial to emphasize that certain students on the autism spectrum may actively choose solitary activities, and they may not seek or desire intervention support (Locke et al., 2016). They may decide they do not want social engagement and opt out of social activity (Odom, 2019). Some students perch on the play structure or wander the playground perimeter with their hands on their ears. There are times I, as a familiar teacher, will try to engage with them, and they are content continuing in their activity.

This action research project investigated the impact of an autism awareness unit on neurotypical students' understanding and engagement with neurodiverse peers on the playground.

It contributes to the field by supporting research that has already been done. The findings supported by the literature reveal that the instructional unit enhanced understanding and interaction between neurotypical and neurodiverse students, leading to four key outcomes. These findings may be helpful when setting goals for neurotypical students' engagement with special needs students on the playground. This intervention began filling a gap at my site by informing students on campus of others different than themselves and highlighting students who were uninvolved at recess.

Reflections on Limitations

I encountered several limitations throughout this nine-week action research study. First, the time needed for students to grasp new information and develop social and emotional skills was short. This type of growth is gradual and takes time. Additionally, the small sample size (n=36) hinders the generalizability of results to broader populations or different grade levels.

Unfavorable weather conditions during the spring, marked by significant rain, also impacted data collection during recess, leading to frequent cancellations or modifications that could impact the reliability of observations. Additionally, consideration must be given to participants' prior exposure to students with autism, as some had family or neighbor connections that may have influenced their understanding, potentially affecting the study's outcomes.

The study introduces subjectivity through the qualitative-to-quantitative scoring process using the Autism Engagement Continuum, which may have led to potential bias in my interpreted results.

Finally, I experienced a notable challenge incorporating the autism awareness unit within the broader context of an Ability Awareness Unit. Future instruction will begin with an overview

of special education categories, the definition of the least restrictive environment, and instruction on each category before proceeding with the autism spectrum disorder unit.

Plan for Further Action

From Interaction to Participation

My research question asked if a unit of autism awareness would improve student understanding and interaction on the playground. In their study *Closing the Gap Between Theory and Practice*, Hodges et al. (2021) emphasize improving the participation of students on the autism spectrum and their typically developing peers. Their research suggests that students' active engagement in diverse activities with typically developing students provides a feeling of belonging. Participation, in simple interaction, contributes to a sense of connectedness, which is a step closer to the goal of inclusion.

I will continue teaching ability awareness, using this information to enhance participation and foster a sense of connectedness. Continuing my autism awareness unit, this time within the broader context of ability awareness, I will extend the instruction to the third grade at my site. I will continue to maintain brief conversations with classes that include students with special needs in their PE sessions, providing explanations about behaviors and offering engagement suggestions like, "patiently bounce the ball together," "show him how to pull the flags," or "communicate your need for personal space."

Personal Journey Forward

Numerous educational injustices exist, and I am particularly passionate about addressing the inequities surrounding the inclusion of students with special needs within the general education setting. In my commitment to promoting equity and justice for all students, I see my next step as an educator and advocate for students with special needs. I see a gap between the

potential and practice of inclusion, specifically participation in general education at public school campuses. I will continue to learn about autism and how best to educate others effectively. I choose to educate students and support staff who lack awareness and who misunderstand the characteristics of the disability. To address this gap, I will provide tools to ensure adequate care, support, and best practices for working with these students to create a more inclusive and supportive learning environment that encourages participation for all students.

In conclusion, my journey through the MATL program has been a transformative experience, shedding light on the power of praxis, equity, and the need to challenge the status quo. I am committed to furthering my impact as an educator by obtaining an autism specialist certificate and remaining dedicated to practicing praxis, ensuring I continue promoting equity and inspiring positive change in education.

Summary

The elementary school playground is a dynamic space where neurotypical students engage in social activities, while those with autism spectrum disorder (ASD) may prefer independent play on fixed equipment. This disparity in play styles can lead to misunderstandings, highlighting the importance of inclusivity in recess activities. The inclusion of neurodiverse students is not just a matter of social justice and equity; it also fosters a sense of belonging, enhances social development, builds empathy, reduces stigma, and cultivates essential life skills, ultimately celebrating the diversity of the entire school community.

This action research project aimed to assess the impact of an autism awareness unit on neurotypical peers' understanding, attitude, empathy, and engagement with neurodiverse students on the playground. The intervention involved a four-week autism awareness unit taught to

neurotypical third graders, with nine weeks of playground observations providing rich data indicating improvements in interactions and engagement.

The findings of this study suggest a positive impact on participants, demonstrated through the growth in written responses, translated to the Autism Engagement Continuum, and assigned quantitative scores. This change was evident from pre-unit tickets to post-unit tickets and weekly lesson exit tickets. The interpretation of findings underscores the significance of accurate information and dispelling misunderstandings, leading to improved attitudes and increased empathy toward students with special needs. Finally, the systematic observation tool indicated more engagement amongst neurotypical and special needs students on the playground.

In conclusion, peer education is valuable for informing and improving student interactions. The results emphasize the importance of including all students in recess activities, empowering educators to foster compassionate, social justice-minded change agents within their communities.

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Appendices

Appendix A

Pre-Post Autism Awareness Ticket

*Have you heard the word **Autism**? Yes or No*

*If yes, can you tell me **what** it is? or*

***Describe a person** with Autism: or*

*Can you catch autism (is it **contagious**)? Yes or No*

***Describe a behavior** or action? or*

*When around a person with Autism, what **feelings** do you have? or*

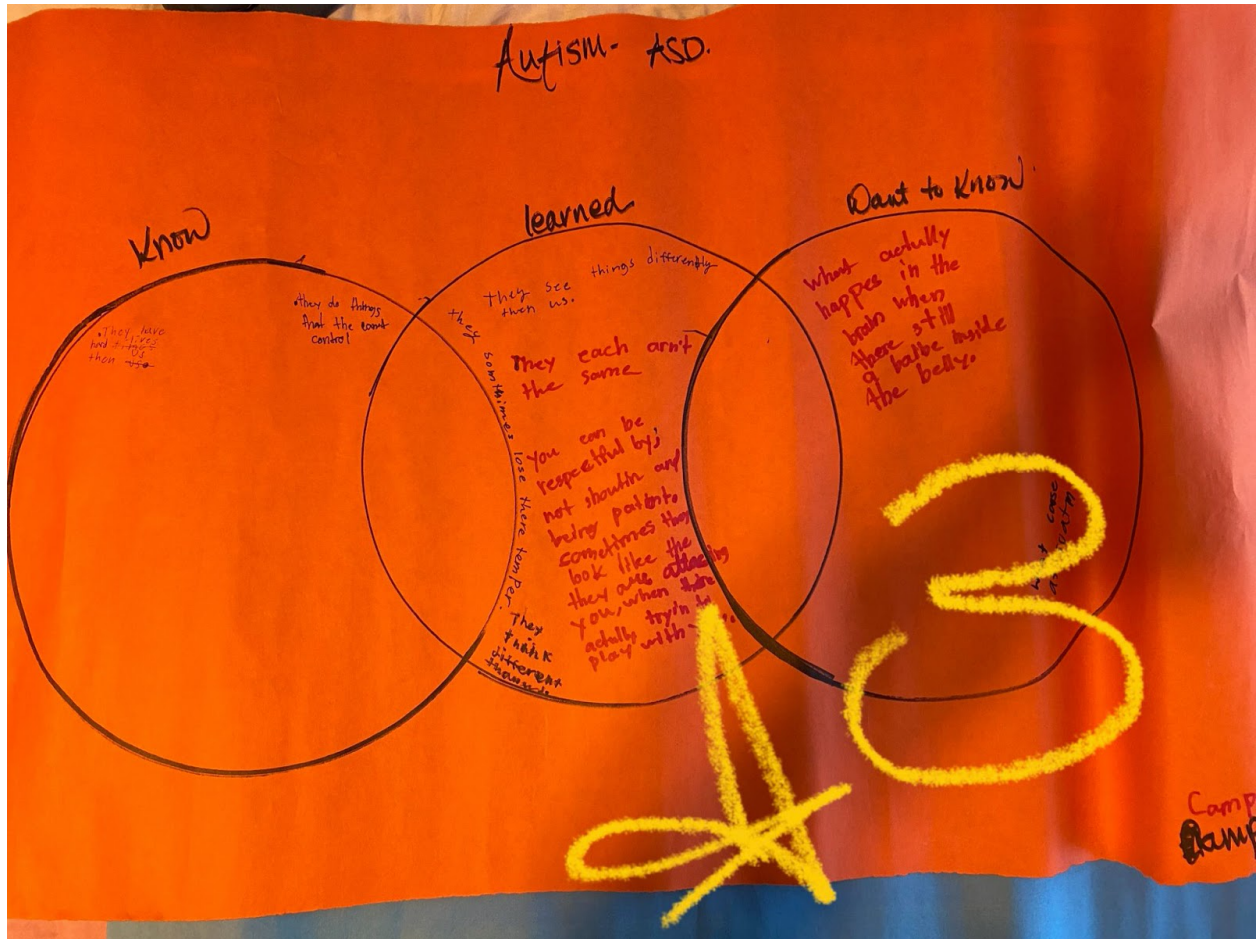
*Have you talked with, **played with** or helped someone with a disability? Yes or No*

*Tell me about an **interaction** you have had: or*

*We can learn many things from people with disabilities, (on the back) **what have you learned?***

Appendix B

Group Autism KWL Chart



Appendix C

Lesson Exit Ticket

What is one thing you learned today about autism spectrum disorder?

Appendix D

Systematic Observation on the Playground Field Notes

Systematic Observation Checklist

date	time	notes
NT initiations (social interactions)		
high initiating (series of equipment or activity used)	10:45	at the playground
greeting verbal		
greeting non-verbal		
offer assistance or current activity or offer to play (not specific game)		
ask to play (not specific game)		
ask to engage (not well socially)		
negative initiation		
class		
AM or PM		
Types of play (activity)		
teacher directed		
child with or from		
open space		
ball		
game		
other		
crises (for my information, not part of research paper)		
eye contact		
eye with toys		
looks to eye contact		
share object or equipment		
social communication		
ask that reflects interest		
any		

Handwritten notes:
- trouble identify info interactions looking successful
- ideas how to reach engagement to game
- observe social process
- peer with help leads to carrying out ball
- using friends not working

Field Notes

interaction	engagement	notes

Handwritten notes:
- 3rd grade recess
- 9:40-9:55
- 11:00-11:15
- need to iterate - via canvas for some - say excuse me please - about something - say out turn
- more school to field & data structure

Week #4 Multiple

direction	greeting	offer assistance	ask to engage	play
fixed equipment				
open space				
game or equipment				
other/total				
direction	greeting	offer assistance	ask to engage	play
fixed equipment				
open space				
game or equipment				
other/total				
direction	greeting	offer assistance	ask to engage	play
fixed equipment				
open space				
game or equipment				
other/total				

Handwritten notes:
- identify period willing to interact
- spread receptive to interaction
- limitation 1A's not on record
- straight & westy
- 1A's

Appendix E

Lesson Plan 1

Session 1: Introduction to the Program

I presented the nature of my unit, *Autism Awareness and Engagement: Supporting Interactions between Neurotypical and Neurodiverse Students on the Playground*. I gave an outline for the next four weeks. The purpose was to educate through information, simulation and activity about individual differences and students who learn and behave differently. With this new information, participants would have “tools” to engage with all students on the playground. These lessons were 50 minutes, in the participants’ self-contained classroom.

Session Objective: The purpose of this lesson was to determine participants baseline understanding and engagement of students with disabilities. It also was to give them an introduction to autism spectrum disorder including descriptive information and explanatory information.

Materials:

- pre/post *Autism Understanding and Engagement ticket*
- Google slide with video
- Premade KWL charts and pens
- Playdough
- Exit tickets

Procedure:

- Welcome participants to class and introduce the unit and the first session objective (2 minutes)
- Participants immediately filled out the pre/post *Autism Understanding and Engagement ticket* (5 minutes)
- Show video: *Amazing Things Can Happen* (2 minutes)
- (Whole class) Questions and comments? (3 minutes)
- KWL chart (group project), move to floor with table group to fill out (10 minutes)
- Playdough perspective lesson: (independent), move back to seat (15 minutes)
- Whole class discussion about perspective (3 minutes)
- Exit ticket: (7 minutes)

Assessment:

Exit ticket: What is one thing you have learned today?

Conclusion:

Next week we will be doing a simulation. It will be loud and smelly and the lights will be bright and wild. I just want to give you a heads up, the first few minutes of class next week will be a little overwhelming!

Prep before the next session:

Make five senses ticket
Get all the materials such as lights, speaker, computer,
Make google slide
Exit ticket: Third grade journal entry pages

Appendix F

Lesson Plan 2

Session 2: Simulation- sensory overload

I reiterated the nature of my unit: Autism Awareness and Engagement. The purpose of the unit was to learn about students who learn and behave differently. With new information, participants would have “tools” to engage with all students on the playground. This lesson was 50 minutes, and took place in the participants’ self-contained classroom.

Session Objective: The purpose of this lesson was to introduce students to an overwhelming environment that simulates overstimulated senses, something some students with Autism experience, to learn and review self-calming strategies, using descriptive, explanatory and directive information.

Simulation: Amongst a freshly sprayed Lemon Febreze, with strobe lights flashing, alarms ringing from one speaker and music from another, simultaneously giving a monologue about a day of skiing, students were given an entrance ticket that asked them to name the five senses.

Materials:

- Three strobe lights, computer with music through classroom speakers, alarms through phone and portable speaker, monologue through bullhorn and can of Febreze to spray around the room
- Entrance ticket: 5 senses sheet
- Google slide with video
- Book: Andy and his Yellow Frisbee
- Exit tickets

Procedure:

- Meet students in the hall and remind them, they are entering a chaotic environment. You have 3 minutes to please take a seat and fill out the entrance ticket I am handing you. (5 minutes)
- Turn everything off, collect sheets, introduce self-calming strategies (push hands together, 5 finger breathing, close eyes and picture self by a body of water) (5 minutes)
- Review how that felt and explain ASD students’ propensity to over stimulation (3 minutes)
- Reiterate my purpose and how this will help them empathize with others. (5 minutes)
- Read book: Andy and his Yellow Frisbee (15 minutes)
- Discussion coping strategies (5 minutes)
- Video: (2 minutes)
- Exit ticket: journal entry (10 minutes)

Assessment:

Exit ticket: How would it feel to walk into an overstimulated class?

Conclusion:

Next week we will be reading a book about Autism, and filling in a workbook.

Prep before the next session:

- Gather books: What About Nick and
- workbooks: Get to Know Me published by Organization for Autism Research
- Make google slide

Appendix G

Lesson Plan 3

Session 3: Kit for Kids, Autism Curriculum by Organization for Autism Research

I reiterated the nature of my unit; Autism Awareness and Engagement. The purpose of the unit was to learn about students who learn and behave differently and with this new information participants would have “tools” to engage with all students on the playground. The goal for the day is to teach the Kit for Kids Autism Curriculum. This lesson will be 50 minutes, in the participants’ self-contained classroom.

Session Objective: Today, through the Kit for Kids Curriculum, we will meet Nick, a fictitious character who has Autism.

Materials:

- Class set of books: *What about Nick*
- Google slide with video published by Organization for Autism Research
- Workbooks: *Get to Know Me* reproduced at the district copy center with permission from OAR
- Exit tickets

Procedure:

- Welcome participants to class and introduce the unit. (3 minutes)
- Show video: [What's up with Nick?](#) (3 minutes)
- Questions and comments? (4 minutes)
- Have participants read book: *What About Nick* (10 minutes)
- Whole class discussion: Why does the book fold differently than a typical reading book. (10 minutes)
- Introduce workbook: *Get to Know Me* and discuss the last two pages- How to be a Good Friend. Give participants time to work (15 minutes)
- Exit ticket: (5 minutes)

Assessment:

Exit ticket: With your new information, what is one thing you will do differently on the playground this week?

Conclusion:

Next week we will be wrapping up this unit. We will have a communication simulation, review what we have learned, finish the KWL charts as a group and fill out the pre/post-understanding and engagement tickets individually.

Prep before the next session:

- Make pre/post understanding and engagement tickets
- Make google slide
- Make notecards with Communication direction phrases
- Gather all materials: 6 color cones: TP, fidget props, first aid kit, sweatshirt and jacket, granola bars and oranges, water bottles,

Appendix H

Lesson Plan 4

Session 4: Communication Activity and Conclusion

Begin class by asking the whole group, what has been the purpose of our time together these last 4 weeks? Reiterate, learning about autism, and understanding students with autism, builds an acceptance that encourages interaction. The end goal is that participants use their new information and tools to engage with all students on the playground. This lesson will be 50 minutes, in the participants' self-contained classroom.

Session Objective: The purpose of this lesson is to simulate difficulty communicating a need. Then to address any outstanding questions or comments, discuss and record new information as a small group on KWL chart, and finally to assess the effectiveness of the unit by filling out the *Pre/Post Autism Understanding and Engagement Ticket*.

Materials:

- Notecards with Communication or direction phrases
- Station materials: 6 color cones: TP, fidget props, first aid kit, sweatshirt and jacket, granola bars and oranges, water bottles, Pre/post-understanding and engagement tickets
- Google slide with video
- Premade KWL charts and pens
- Playdough
- Exit tickets

Procedure:

- Review what we have learned these past 3 weeks. (10 minute)
- Communication Simulation- with partner (10 minutes)
- Debrief - whole class (5 minutes)
- **Video:** [Making Friends with Children of all Abilities](#)
- Review how to be a friend from workbook (5 minutes)
- KWL chart (10 minutes)
- Exit ticket: (10 minutes)

Assessment:

Exit ticket: *Pre/post Autism Understanding and Engagement ticket*

Conclusion:

- You have learned a valuable perspective.
- We don't all see and experience the same.
- It is our responsibility to be patient with all people.
- Disabilities are beautiful, a form of human difference
- We all are unique and all have a purpose.

Appendix I

The Autism Engagement Continuum

score	0	1	2	3	4
code	No indication	Awareness	Understanding	Empathy	Engagement
Category notes	No indication of understanding or awareness.	<p>Awareness is a one time thing.</p> <p>Participants show limited knowledge.</p> <p>Facts, skills or information is listed.</p> <p>Words that signaled awareness: different, similar, they, perspective, communicate, stimulation,</p>	<p>Understanding is realized.</p> <p>Acceptance comes from a place of understanding.</p> <p>Acceptance is a constant process of regard and respect.</p> <p>Words that signaled understanding: accept, sad, badly, kindness, feelings, we,</p>	<p>Empathy includes inclusive language.</p> <p>There is a cognitive perspective, an affective feeling, or an attitude of concern.</p> <p>Patience is demonstrated.</p> <p>NT students acknowledge they are part of the solution.</p> <p>Phrases that indicated empathy: perspective, feel for</p>	<p>Prosocial behavior includes a plan to, an intention or a desire to interact or engage.</p> <p>To help, to play or interact.</p> <p>Words that signaled engagement; together, helped, played,</p>