2022

EXPLORING HOW SCRIPTS, DRAMA, ART, AND SENSORY STIMULATION CAN CONTRIBUTE TO AUTISTIC STUDENTS' READING COMPREHENSION AND ENJOYMENT OF FICTION TEXT

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EXPLORING HOW SCRIPTS, DRAMA, ART, AND SENSORY STIMULATION CAN CONTRIBUTE TO AUTISTIC STUDENTS' READING COMPREHENSION AND ENJOYMENT OF FICTION TEXT

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

to the faculty of the

DEPARTMENT OF EDUCATION SPECIALTIES

of

THE SCHOOL OF EDUCATION

at

ST. JOHN'S UNIVERSITY
New York
by
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Date Submitted 2/14/2022 Date Approved 5/17/2022

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ABSTRACT

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The focus in this exploratory multiple case study was to examine the reading comprehension and enjoyment of four male, English-speaking teenage students with autism spectrum disorder (ASD) during a 12-week Story Club series. Parents' perceptions of their teenager's reading comprehension were also considered. Story Club involved modifying a young adult novel into a script format after which students embodied character roles and engaged in rehearsals and performances. Furthermore, students designed artwork and theater props, received social-emotional instruction from a drama therapist, and were exposed to sensory experiences, all of which were aligned with literary events from the story. Because interventions such as explicit instruction, adapted text, and graphic organizers have been shown to be impactful for certain students with ASD, I explored how adapting the book, *The Boxcar Children*, into a script format, with simplified language and explicit social-emotional instruction, would affect student enjoyment and comprehension. Major findings from this study revealed the potential benefits of punctuation and exaggerated letters on students' intonation and emotional understanding of the characters' experiences, the impact of music on student enjoyment and comprehension, the encouragement and support of each student toward themselves and each other, and how mediated semiotic tools served as supports to comprehension.

ACKNOWLEDGEMENTS

I would like to dedicate this dissertation to my mother, Jan Melville, who worked at St. John's University for over 20 years with the goal of a tuition-free educational journey for me. Without her grand plan and emotional support, I would not have completed this program! I love you! And to my father, Tom Melville, who would have been yelling in cheer and delight this whole time. DBR. Last, to Dr. Dandelion, my loyal and trusted fuzzy assistant.

My cup of gratitude overflows and I have so many people to thank. First, thank you to my advisors, Dr. Sampson and Dr. Cook. The enormity of my academic propulsion from your past classes and current advisement is extraordinary. Dr. Sampson, thank you for your guidance, patience, kindness, and sharp expertise. Dr. Cook, thank you for your clear direction, keen insights, and excitement of tables and figures.

Liz McDonough, thank you for your no-where-near-the-box thinking, humor, support, and years of collaboration! It was an honor to work alongside you for the past 7 years. You are a true master of your craft.

Kristin Schinella, thank you for your encouragement and unending support of my research and creativity! I am forever grateful for the opportunities you have carved out for me and for fanning the flames of my passions.

To the students themselves, thank you for trusting me and for teaching me! I am honored to have worked with you.

Special recognition to my support group: Vincent Melville & his parents; the McKees; my lovely boyfriend, Paul Koster; Sarah Puffin Brauer; Todd Moss; Andy Dieden; the Carranos; the Garrys; the Bellerose Melvilles; Jess King & Denis Morton.

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CHAPTER 1: INTRODUCTION

Background of the Problem

Literacy skills, which include reading, writing, speaking, and listening, provide the foundation for improving quality of life (Carnahan & Williamson, 2010), and yet there is a bracket of students within the autism spectrum (ASD) who are unable to comprehend what they read despite being proficient decoders. Autistic students are on the rise and entering public school mainstream and special education classrooms at a high rate. This heterogenous group of students have diverse profiles and may learn differently than their neurotypical peers. Frequently, teachers are unprepared to teach this community, as most teacher preparation programs lack the necessary training for educators to be resourced enough to serve this faction. Extreme variances in learning styles, sensory preferences, behaviors, and cognition further contribute to the inequities students with ASD may encounter in classroom settings.

ASD is a developmental difference affecting approximately one out of every 54 children, a statistic the Autism and Developmental Disabilities Monitoring Network (Centers for Disease Control and Prevention, 2022) calculated when they gathered samples from 11 participating communities across the United States. The individuals in the data set were 8 years old, because by this age most autistic people are identified for services (Centers for Disease Control and Prevention, 2020). ASD is characterized in the latest version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–5*) as follows:

> Autism spectrum disorder is characterized by persistent deficits in social communication and social interaction across multiple contexts, including deficits

> in social reciprocity, nonverbal communicative behaviors used for social interaction, and skills in developing, maintaining, and understanding relationships. In addition to the social communication deficits, the diagnosis of autism spectrum disorder requires the presence of restricted, repetitive patterns of behavior, interests, or activities. (American Psychiatric Association, 2013, p. 31)

The number of autistic students enrolling in general education classes is on the rise, although teachers have not been given proper guidance on how to serve this population (Brown et al., 2013; Finch et al., 2013). The lack of guidance might be, in part, due to the innate heterogeneity of the population itself and the systemic confusion surrounding how to best serve them. Because educators need more direction and researchers have asked for further investigations, I designed this study to explore the perplexities of how some autistic students can decode competently without comprehending what the words mean (Bethune & Wood, 2013). Though this fluency without meaning dichotomy can be viewed as surprising, if considered at a deeper level it is quintessential to this population to crack codes. Organized systems can make more sense to autistic people than concepts that involve flexible thinking. Conversely, reading comprehension is an extremely complex process that can be ambiguous, evasive, and multidimensional. Obstacles to comprehension for students with ASD can include rigidity, attention, differences in background knowledge (Brown et al., 2013), social-emotional confusion, Theory of Mind (ToM) blocks, executive function breakdowns, preoccupation or aversion to sensory input, focus on details rather than the gestalt (Williamson et al., 2012), narrow interests, and engagement in repetitive behaviors.

Schools can be an overwhelming experience for this population because of their social variances and common sensory processing differences, which can overload them to the point of distraction (Harrison & Hare, 2004; O'Neill & Jones, 1997) or distress. Furthermore, successfully educating autistic students to reach their potential can be an unfair expectation put on teachers to accomplish without the crucial and proper guidance (Ruppar et al., 2017).

The Problem Statement

Certain students with ASD have strengths in decoding text although they struggle with reading comprehension. This is partly related to the social-emotional events, incompatible background knowledge, cognitive rigidity, and figurative language prevalent throughout fiction literature (Nguyen et al., 2015). Because comprehension is the goal of reading, when a lack of comprehension is the main barrier, it is critical to investigate the obstruction or reading will become literally meaningless. Students with ASD deserve the same type of quality of life others enjoy through literature and literary expression.

Children on the spectrum see the world through different lenses than their neurotypical counterparts, and so they often do not have the relevant information to draw upon when reading. Between social communication, certain behavior challenges, as well as sensory aversion or preoccupation, autistic students make sense of the world around them in a variety of ways that are not necessarily shared by their same-aged peers. This community often has different cognitive and behavior styles, so perspective-taking, metacognitive skills, and background knowledge are sometimes substituted by remarkable abilities and information that we are just beginning to learn about. When

neurodivergent people read fiction text, we might be asking them to inhabit a world of which they know little.

Figurative language refers to words or phrases that have abstract meaning (e.g., it's raining cats and dogs) and encompasses idioms, similes, metaphors, analogous expressions, and personification, which are all commonly used devices to enhance writing. However, for students with ASD, the use of such figurative language often has the opposite effect because these students are largely concrete thinkers. Consider a concrete thinker reading an idiom and picturing it literally and how that could change the meaning (e.g., I'm all ears). Furthermore, pronouns confuse this population because pronouns are inconsistent, unpredictable, and abstract (Williamson et al., 2012). Because perspective-taking is already a challenge for students with ASD, being able to follow "the who" behind each pronoun is an additional hurdle.

Related to following "the who" in a story, theory of mind (ToM) is a particularly salient phenomenon. ToM is essentially the ability to predict behavior based on the mental states of others, an area in which this population struggles and that is central to their social communication divergences (Nguyen et al., 2015; Williamson et al., 2012). ToM is the ability to understand, empathize, and make predictions based on the perspectives of characters, which is a critical skill when attempting to follow a storyline (Williamson et al., 2012). ToM affects this population in terms of not only how they operate and interact with the world around them, but how they interact and relate to narrative text, as these skills are needed to make sense of characters' behaviors (Colle et al., 2008).

Purpose Statement

The purpose of this study was to explore the reading comprehension challenges of four male, English-speaking autistic teenage students in Northern California. I redesigned a traditional book by adding interventions that included script formats, drama exercises, social-emotional instruction, artwork, aligned sensory stimulation, rehearsals, and performances during Story Club, which was a virtual series of 12 classes. I examined the social dynamics among the students as rehearsals occurred and observed their behaviors during the performances. I sought to understand whether concrete artwork, sensory integrations, and social-emotional instruction from a drama therapist benefitted the students' overall enjoyment and understanding of the story. Furthermore, three of the parents of these students had expressed concern about their children's comprehension weaknesses with fiction literature so I explored their perceptions before and after the classes to determine whether they shifted or not. In this research, reading comprehension challenges were defined as reading proficiently but without making meaning from the words due to issues with concrete thinking, ToM, attention, or differences in background knowledge.

Research Questions

1. How can scripts, drama, art, and sensory stimulation support the reading comprehension and reading enjoyment of fiction text for four male autistic teenagers in Northern California?
2. Do parent perceptions of the reading comprehension of their autistic teenagers shift after Story Club participation?

Theoretical Framework and Rationale

In reading about Vygotsky's (2012) view on language, I became increasingly convinced that his sociocultural theory was the appropriate theoretical framework for my study. Vygotsky had many passions, including theater, literature, art, philosophy, psychology, and even working with "handicapped" children. In fact, Vygotsky was instrumental in the opening of the Institute for the Study of Handicapped Children in Russia (Vygotsky, 2012). Vygotsky posited that drama, play, and creativity were crucial aspects of the social world for children to learn (Daniels & Downes, 2018). He maintained that language acquisition is sociocultural in nature, meaning humans do not have words as thoughts until they socialize with others to gain the verbiage. According to Vygotsky (1978), cognitive development is a highly social process and its progression happens in two stages. The first stage is through social interactions. Following this social stage, the second stage occurs within the individual. Only then can humans internalize the words (symbols) to organize thoughts (that were once nonverbal images). Therefore, language and literacy are first social. Then, once mastered through involvement with a "more knowledgeable other," language can belong to the individual internally.

However, this process is more complicated for those with ASD. Because the social component that is core to communication and interaction is compromised in autistic students, their cognitive development often has gaps. Consequently, their development can look like an isolated experience, as they are left to make meaning of the world on their own. Their interpretations and cognitive development can seem different, delayed, or distorted. Because they are confronted by all these layers in every facet of life, students with ASD compensate and cope in unique ways.

I designed Story Club to bridge the participants' siloed perspectives to a more community mind as they socialized, co-created book-related artwork, and read from the scripts. In this study, scripts served to organize the story and assign the students roles. Students had a social scene in which they participated with the exact dialogue of what to say, their mediated semiotic tool, which, according to Smagorinsky (2012), is the mediational means by which learning is accomplished. Furthermore, students experienced instruction on social-emotional events from a drama therapist (referred to as LM) whom I worked alongside. This collaborative action was intended to help the learners practice and internalize everyday sociocultural interactions. I believed this structure and repetition had the potential to benefit students with ASD.

In addition to each student having a character role, the format was more concrete and aligned with their strengths. The students participated in virtual rehearsals and performances on Zoom, which I posited would be helpful as repeated readings support comprehension. The scripts did not include irrelevant and figurative language, which are historically known to confuse students with ASD. As research shows executive functioning may contribute to difficulty with text monitoring and self-correcting (Carnahan & Williamson, 2010), I was curious to observe whether the repeated guided readings and the physical integration of props, art, and sensory materials would help students translate the major events of the story.

Vygotsky highlighted the importance of social action scaffolded with semiotic mediation suited to developmental levels (John-Steiner & Mahn, 1996). Developmental levels, according to Vygotsky (1978), can be assessed through the zone of proximal development (ZPD). The purpose of operating from the ZPD lens is to delineate the

student's immediate future goals based on their current dynamic, developmental state. Therefore, the educator is meeting the student where they are cognitively at and guiding them forward. The educator and the student first practice together and the goal is eventual independence.

Vygotsky (1993) explicated his rejection of studies in which researchers claimed students with special needs are not capable of abstract thought and should learn only concrete skills in isolation. Vygotsky posited that concrete learning is necessary as *scaffolds* to abstract thinking. These scaffolds can be any bridge from what the student is capable of (e.g., their ZPD) to what the teacher wants them to achieve or grasp, and ideally the learners will observe and imitate the behavior/skill/concept in order to conceptualize it (Vygotsky, 1978). Language is seen as an example of a scaffold because language is first used concretely to communicate with others, and then once that happens, this abstract concept is internalized to organize one's own thoughts. Vygotsky believed social learning paves the way for internal development, not vice versa.

In this study, I used semiotic mediation and multisensory engagement within each student's ZPD via drama, which encompassed modeling with more knowledgeable others, imitation, joint attention, and play. This followed Vygotsky's theories in the sense that I designed scripts with these four specific students in mind and used supports and props that I believed would benefit the students as the scaffolds were framed within their ZPD to help them comprehend the fiction novel, *The Boxcar Children*.

I observed each student's abilities and level of development to guide my decisions regarding what to implement. I chose a fiction text because fiction is abstract and difficult for concrete thinkers to understand. Furthermore, figurative language, pronouns, and

simple social-emotional elements add an extra dimension of troublesome text. Consequently, in considering Vygotsky's (1978) claim that concrete scaffolds can be a doorway to abstract concepts, I created the scripts to eliminate confusion by omitting unnecessary text and including a clearly outlined dialogue and setting descriptions, thereby reinventing the story in a more concrete way. The acting out of the script involved kinesthetic movement, tactile exercises, sounds, and visuals for the learners to be as immersed as possible.

Because a major obstacle to comprehension can be the social-emotional dynamics between characters, the students read the script multiple times and acted out the emotions of the characters with direction from the drama therapist and myself. Vygotsky (1978) stated learning in joined activities is beneficial to the ability to co-construct meaning and truly interact with the story, so I was curious to see whether the co-construction of schemas led to comprehension. The multisensory elements were designed to broaden comprehension and ideally enable the students to either activate or construct a schema.

I thought a lot about the difficulty with ToM that some with autism face while creating Story Club. I conjoined ToM with sociocultural theory throughout the entire Story Club by emphasizing and explicitly demonstrating the relationships between characters and how their thoughts and feelings might be discerned. Furthermore, I related characters' experiences to the background knowledge I knew the students possessed from my prior work with them. I not only looked at the students' ToM in the reading and acting of lines, but also of the students' ToM during class. For example, I wanted to observe whether one student would prompt the other when it was their line when

normally during a traditional read-aloud there was very little spontaneous interaction among these peers.

Significance of the Study

It is both encouraging and disheartening to see how far education has come with Response to Intervention and environments for students with different abilities throughout the past 50 years. There is an interesting parallel to how students with ASD were viewed throughout history. As a result of activism and research, there has been ample progress in mentality and unanimous concern about environments, treatment, and modifications, though little in terms of specific interventions.

Currently, research shows many teachers are unprepared to teach students with ASD as there is a lack of ASD training in teacher preparation programs (Loiacono & Valenti, 2010; Probst & Leppert, 2008). Neurotypical students struggle with reading comprehension in different ways and teachers are better equipped to address those challenges. For example, neurotypical students might struggle with barriers to comprehension such as phonemic awareness, phonics, vocabulary, and fluency or they might struggle with comprehension strategies such as self-monitoring (Frankel et al., 2011). Students with ASD can struggle with the same issues, but often have additional challenges that are tremendous impediments to reading comprehension, and more research needs to be done on these specific challenges (McIntyre et al., 2017).

As the rate of ASD diagnoses increases and consequently the rate of attendance in general education classes increases (National Center for Education Statistics, 2019), more studies are warranted on how to bring this unique population toward its potential, including surpassing functional goals (concrete) and moving toward the fostering of

critical thinking (abstract). I designed this study as an attempt to find ways to have reading make sense to those students who fit this profile of high decoding ability but low comprehension, including giving them opportunities to listen, read, observe, and enact all within an organized structure.

The rise in diagnosis is a concern for both educators and parents, and additionally fuels the debates on the causes of ASD (Loiacono & Valenti, 2010; Miller et al., 2013), which seem to be multidimensional, including both genetic components and environmental variables (Feinstein, 2010). Regardless of the causes, what has remained consistent is the vacillating symptoms of ASD. Moreover, special education students are often merged together without consideration of their individual differences (Baglieri, 2016). I hoped to make a case for granting more attention to not only students with ASD as a whole, but to these students individually. I targeted four teenagers with ASD using a multiple case study design to explore whether transforming a fiction story into simplified scripts, adding in social-emotional enactments, and simultaneously activating students' senses supported their enjoyment, engagement, and overall comprehension. For example, I explored whether the students had higher enjoyment levels of a story if they were able to smell aromas that were mentioned in the book or if they were able to make, feel, or play with props from the story. I investigated whether sensory exposures and tactile stimulation served as a pathway to comprehension, especially when combined with drama and scripts.

Vygotsky (1993) believed that when students with disabilities encountered obstacles to development and could not progress further on their own, more knowledgeable others are the remedy, allowing students with disabilities to keep

evolving. “Cultural development is the main area for compensation of deficiency when further organic development is impossible, in this respect, the path of cultural development is unlimited” (Vygotsky, 1993, p. 169). My study was about exploring other cultural paths, including scripts, props, artwork, rehearsals, and an audience, to support autistic students’ reading comprehension development.

Definition of Terms

The following definitions are provided to ensure understanding of these terms throughout the study. I developed any definitions not accompanied by a citation.

Autism spectrum disorder (ASD): Autism spectrum disorder is characterized within the *DSM–5* by

> persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interaction, and skills in developing, maintaining, and understanding relationships. In addition to the social communication deficits, the diagnosis of autism spectrum disorder requires the presence of restricted, repetitive patterns of behavior, interests, or activities. (American Psychiatric Association, 2013, p. 31)

Drama therapist: The drama therapist (LM) in this study is also a licensed marriage and family therapist (MFT). LM has a bachelor’s degree in undergraduate drama from NYU’s Tisch School of the Arts and a master’s in counseling psychology from the California Institute of Integral Studies and has been working with students with autism and their families for more than 15 years. LM taught the participants in this study social-emotional schemata in a theatrical and playful way through modeling, original

music, role play, imitation, and games. LM and I have worked together for years at a school in Northern California and in our own after-school program.

Reading comprehension: The ability to make meaning from text by building a mental model of the text (Brown et al., 2013).

Scaffold: A temporary prop that helps move students from what they know to what they need to know (Gillis et al., 2017).

Story Club: An experience derived from a story (i.e., *The Boxcar Children*) where the story was modified into a simple script and exercises were added. Exercises included drama games, story prop creation, social-emotional instruction, and sensory stimulation with the purpose of deepening comprehension and enjoyment of fiction text.

Theory of Mind (ToM): The ability to understand, empathize with, and make predictions based on the perspectives of characters, which is a critical skill when attempting to follow a storyline (Williamson et al., 2012).

Weak central coherence: "Students with ASD demonstrate attention to and memory for specific details and rote facts over conceptual or 'big picture' ideas. The implications of such a detailed focus are enormous when making meaning from text" (Carnahan & Williamson, 2010, p. 32).

Zone of proximal development (ZPD): "The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 2012, p. 86).

CHAPTER 2: REVIEW OF THE LITERATURE

Reading Comprehension

Comprehension does not necessarily come naturally after an individual learns word recognition processes (Hennessy, 2021). According to The National Assessment of Educational Progress (2019), approximately one third of students in Grades 4 and 8 declare that they can definitely understand the meaning of something they have read. Similar results emerged from the quantitative tests students were administered with only 35% of students reading at the proficient level in Grade 4 and 36% in Grade 8. Furthermore, the scores of students with disabilities were 12% reading proficiently in Grade 4 and 9% reading proficiently in Grade 8.

Reading comprehension is a personal and highly interactive journey. There are a multitude of interconnected neural components that contribute to comprehension. Comprehension involves linguistic knowledge, schema construction or activation, and metacognitive strategies that all occur concurrently (Cho & Ma, 2020). Linguistic knowledge is multidimensional in nature and encompasses both listening comprehension and reading comprehension and is influenced by vocabulary, grammar, and discourse level (Chiu, 2018). Oral language is also a large component of reading comprehension because reading proficiency is a language-based ability, and any difficulties with language are a challenge to comprehension (Hennessy, 2021). Furthermore, once these components of comprehension are synergized and functional, there are psychological and experiential factors that infiltrate and influence the comprehension process such as motivation, confidence, culture, background, trauma, and learning preferences.

Hennessy (2021) noted the reader brings their own strengths and weaknesses to the text, along with their expressive and receptive language ability, cognitive capacities and skills, and executive functioning levels. From there, the reader must contend with different types of sentences and structures to organize idea units. Simultaneously, the reader must tap into their knowledge of the topic and the new concepts presented in the text to understand the global coherence. This is a complex process that depends highly on the student's language comprehension capabilities, cognition, and memory.

According to the Simple View of Reading (Gough & Tunmer, 1986), reading comprehension is the product of successful decoding combined with linguistic awareness. Gough and Tunmer (1986) delineated the roots of reading disabilities and identified three classifications of reading disability, including dyslexia, hyperlexia, or a "garden variety." Essentially, according to Gough and Tunmer, dyslexia is the inability to decode, hyperlexia is the inability to comprehend coupled with the ability to decode, and the garden variety is a mixture of both. This simplistic outlook of reading disability excludes the specific hurdles students with ASD encounter, though it does offer a good starting point from which to dissect the complex nature of reading comprehension.

Frankel et al. (2011) identified three approaches to improving comprehension for those with disabilities: focusing on the phonological deficit; focusing on reading comprehension strategies; and focusing on balanced, individualized instruction. The bedrock of my dissertation study was on the balanced and individualized instruction model, combining reading comprehension strategies with individualized content and delivery depending on students' needs.

Reading Comprehension for Neurodiverse Students

There is a growing body of research regarding ASD and the reading comprehension challenges that are unique to this population. However, it is crucial to note and stress the extreme heterogeneity of autistic people. Someone who is autistic does not necessarily have reading comprehension challenges (Brown et al., 2013). This is merely one learning profile within this community. Most researchers agree on two areas: there is not enough teacher preparation to expect teachers to adequately serve this population, and there needs to be more research on reading comprehension in the ASD population in general (Finch et al., 2013).

Neurotypical students who have reading comprehension challenges usually grapple with decoding issues, fluency deficits, and linguistic difficulties (Nation, 2019). Further reading comprehension difficulties for neurotypical students may include a lack of background knowledge, vocabulary, and language comprehension (Hennessy, 2021). Broadly speaking, teachers are more adept at tackling these issues than the issues that are unique to the ASD community, chiefly because there is a dearth of evidence on the specifics of ASD differences in reading comprehension and therefore a lack of effective recommended classroom strategies (Finch et al., 2013). For example, neurotypical students might benefit from a framework that activates background knowledge before reading, teaches comprehension monitoring during reading, and offers a variety of expressions of learning after the reading. There are a multitude of strategies that fit into such a framework, but a student with ASD might not have access to the metacognitive strategies necessary for comprehension monitoring. A student with ASD may not be aware of whether they know a word or do not know a word when monitoring for

comprehension or they may not have the awareness of whether they understood what they just read. Metacognitive skills that are critical to comprehension are higher-order cerebral processes that often need to be significantly scaffolded for students with disabilities.

The research that has been published on reading comprehension and ASD offers varying positions on the most paramount issues affecting this population, which could be due to the significantly different profiles of those on the spectrum. The omnifarious nature of the autism spectrum complicates the mission to find solutions for reading comprehension. McIntyre et al. (2017) posited that structural oral language impairments and the comorbidity of attention deficit hyperactivity disorder (ADHD) might explain the low reading comprehension achievement among students with ASD. More specifically, McIntyre et al. found that social communication impairments and higher-order language cognition such as retelling, inference generating, and global coherence of the text were compromised areas for those with ASD. Their study did show that, overall, students with ASD performed lower than their neurotypical peers and peers with ADHD in reading comprehension, which debunked their initial claim that the comorbidity of ADHD might be one of the major reasons students with ASD struggle with comprehension. However, other researchers agreed with the possibility that attention affects comprehension, particularly that someone with ASD might focus their attention on something they find interesting in a story, not necessarily the content-relevant information (Loth et al., 2011).

Tzuriel and Groman (2017) identified both language impairments within the individual and figurative language within literature as towering obstacles for these concrete thinkers. O'Connor and Klein (2004) mentioned pronouns in literature being

nonconcrete entities that potentially confuse students with ASD, coupled with the need for background knowledge they may not possess. Similarly, Brown et al. (2013) found in their meta-analysis that prior knowledge is a crucial element because when an individual reads, there needs to be a connection from background knowledge, or event schemas, to the text because that is how a person relates to the story and makes meaning. Brown et al. explicated the differences in background knowledge, specifically semantic knowledge, and interpersonal knowledge. Semantic knowledge is the word meaning along with the ability to access the exact representation for the specific word meaning appropriate for that given text. Interpersonal knowledge is having the relevant social experience to draw upon when one encounters a similar literary event in a story. The semantic or interpersonal schemas then allows the reader to relate prior knowledge to the event in the story to make sense of what the author is describing.

As such, there are several ways in which students with ASD can run into trouble: having limited vocabulary, having limited representations, or having inflexible thinking around specific representations.

In addition to physical background schemas, interpersonal knowledge has also been noted as a threat to comprehension for students with ASD (Brown et al., 2013). Additional research aligned with Brown et al.'s (2013) assertion that interpersonal knowledge is a concern and went further, pointing to weak central coherence, ToM, and executive functioning as significant barriers to reading comprehension (Finnegan & Accardo, 2018; Williamson et al., 2012). Weak central coherence prevents reading comprehension because the reader concentrates on minor details and story elements, thereby missing major connections and events, which mirrors how Loth et al. (2011)

described attention hurdles for those with ASD. Moreover, weak central coherence makes it difficult to exercise higher-level cognitive abilities, such as forming inferences or retelling the plot, because the gestalt of the story is required for such activities (Tzuriel & Groman, 2017). Loth et al. (2011) took it a step further in their study when they tested the impact of event schemas on ToM. Event schemas are characterized by the general knowledge of what happens at common real-life events such as birthday parties. Their results showed students who passed basic ToM tests were still challenged with social schemas but more so by weak central coherence because central coherence influences how people interpret and experience events. Those who failed basic ToM tests had significantly affected event schemas because of their inability to understand another person's behaviors and actions or infer what will happen next.

Conversely, and surprisingly, Saldaña and Frith (2006) found in their study that students with ASD do not necessarily have difficulties with inferencing or drawing on world knowledge (including event schemas). Instead, they found students with ASD may struggle with the suppression of inaccurate schemas that are activated by a story, compounded by the confusion caused by pronouns and text processing. Saldaña and Frith suggested researchers need to explore why the comprehension of text is challenging despite students with ASD having the capability to draw inferences and access background knowledge. Saldaña and Frith found in their experimental study that students were able to make simple inferences about both the social and physical worlds when presented with three-sentence vignettes.

In 2011, Loth et al. went on to further investigate event knowledge and highlighted in their study that in laboratory settings, the experimenter explicitly points

out what is most relevant to the student. Consequently, the student is much more likely to be successful with an isolated task as opposed to real-life scenarios where the student needs to spontaneously and independently select the important features from which to make inferences. They found in their study that students with ASD do not show the same bias for selective recall of seemingly important information. Most notably and progressively, they called for society to look for differences, not only deficits, to increase the understanding of how people on the spectrum operate in the world. Perhaps Saldaña and Frith's vignettes were controlled enough for students with ASD, akin to the laboratory setting.

Trillingsgaard (1999) studied children with high-functioning autism, all with an IQ above 90, and their ability to generate longer scripts of event knowledge. According to Trillingsgaard, scripts are related to comprehension because both need solid social reasoning and mental models, which are areas that can be compromised in students with ASD. Results showed autistic people, compared with a control group of neurotypical people, were less likely to create a flexible and detailed script and more likely to recall their sequence of events in a factual manner without room for real-life variables. In this sense, it seems as though students with ASD might be able to infer and reason when there are fewer details and more rigidity, and when the students are prompted to generate longer accounts with expressive language of event schemas, their inflexibility and social reasoning can impede the process.

Possibilities of other comprehension perplexities have been found. Students with ASD have varying executive functioning capacities that further complicate reading comprehension. Executive functioning enables a person to organize and classify story

information; use working memory to recall or make predictions; and self-monitor to know when to reread, look up a word, or review what happened (Finnegan & Accardo, 2018; Williamson et al., 2012).

Recommendations to Support Comprehension for Students With ASD

Researchers are gathering mounting evidence on what practices could potentially have the largest impact on students with ASD. An important finding within the literature is the educator's continual professional development to enlarge their toolkit so that when they are attuned to a student in this vastly heterogeneous community, they have a wide selection of scaffolds and interventions at their disposal, giving the student the highest chance of success.

The findings discovered in my review pointed toward multiple scaffolds for supporting hyperlexic students with ASD as they work to understand literature: (a) graphic organizers, (b) direct instruction (c) adapted text, (d) strategy instruction for comprehension monitoring and executive functioning, (e) teaching ToM within the context of the literature, and (f) building or activating schemata that are aligned with the text. The specific supports I address in this review are graphic organizers, adapted text, teaching ToM, and building or activating schemata.

Graphic Organizers. Multiple sources (Apitz et al., 2017; Bethune & Wood, 2013; Finnegan & Mazin, 2016) have shown graphic organizers are powerful and effective tools with which to help students with ASD improve their reading comprehension. When students lack executive functioning skills, explicit strategy instruction has been proven to be effective, along with sorting activities in word story graphic organizers. Graphic organizers are a broad scaffold and can be modified and used

to identify parts of the story such as characters, setting, main idea, problem, and solution. They can also be adapted to address elements the teacher focuses on that day. Appendix A is an example of a simple graphic organizer I used with the students during Story Club to organize the characters the students encountered that day.

Snyder et al. (2017) pointed to graphic organizers and adapted text as effective interventions for students with developmental disabilities, such as ASD. They added that these interventions are most beneficial when paired with direct instruction. Direct instruction is an intentional structure that encompasses clear teaching with examples and modeling, guided practice, independent work, and generalization, which can be beneficial for concrete tasks such as using a graphic organizer (Gillis et al., 2017).

Adapted Text. Adapted texts have also been mentioned in many articles as a promising technique for students with ASD. Hudson et al. (2013) demonstrated the benefits of summarizing stories, pairing keywords with picture symbols, and emphasizing the main idea. Apitz et al. (2017) offered steps to build lessons for students with disabilities, particularly adapted text. They suggested to first make an outline of the story, then intentionally choose functional vocabulary, and then write the adapted text with appropriate scaffolding for easier accessibility (e.g., page "fluffers" such as a sponge to help with page turning, laminated pages that allow students to use dry erase markers on).

Anaphoric cueing refers to strategies that help readers to connect a pronoun to the character to which it refers (Finnegan & Accardo, 2018). First, teachers should explain what pronouns are as well as their purpose. Then, educators can embed anaphoric cueing into a graphic organizer to let students know visually which pronouns are used to refer to which characters. For example, in *The Boxcar Children*, I could make a graphic organizer

with the character Henry and have a key with the pronouns *he*, *him*, *his*. However, in this dissertation project, I opted to eliminate pronouns as much as possible and I put the book into a script format so the dialogues were straightforward.

In agreement with Apitz et al. (2017), Ruppar et al. (2017) offered additional suggestions about text adjustments to meet students within their developmental ranges by adding pictures, symbols, and enlarged print to build accessibility, interest, and motivation. Furthermore, Ruppar et al. recommended shared reading, embedded instruction, and time delay to increase the literacy skills of students with disabilities. Shared reading is a potentially effective strategy in which proficient readers help struggling readers work through the text. Proficient readers can be peers or another person serving as a model of how to read the text and might include appropriate monitoring strategies.

Teaching ToM. A crucial foundational feature for the development of ToM is joint attention, and perhaps the most important component of joint attention is the desire to have the shared attention with another person (Baron-Cohen, 1997). Can educators teach students with autism the desire to share attention with another person? Wolfberg (2009) maintained that this desire can be taught through guided play. Integrated play groups (Wolfberg, 2009) are comprehensive play interventions that offer communication and play guidance to small groups of novice and expert players. Within these groups, both neurotypical and neurodiverse individuals are supported with a group facilitator to explore symbolic play and joint attention. Through Wolfberg's 6-month series with the same participants present, autistic students displayed growing capacities for reciprocal

social interactions and symbolic representation, both crucial skills for reading comprehension of narrative texts.

Although integrated play groups are cumulative and intentional formulas that may be too difficult for a teacher to replicate with fidelity in the classroom, parts of the model can be implemented. Joint attention exercises, theater games, role plays, and social games can cultivate social skills, including ToM, in students with ASD (Hartigan, 2012). For example, one possible game can include acting out and guessing feelings as students look at body language to figure out social scenarios. Assessing students' baseline and growth is imperative for the educator to offer appropriate play options (e.g., functional play versus simple pretend play).

Building or Activating Schemata. Readers are dependent on their schemata library to provide plausible interpretations of book events because a text is never completely explicit, especially narratives (Alvarez & Risko, 1989). Schemata are mental models a person can visualize when separated from the "thing" they picture. For example, when reading text that describes a birthday party, the reader will then picture a similar birthday party they went to and relate the experience to the story to construct meaning. According to Saldaña and Frith (2006), when students read without having the correct social or physical world knowledge to draw upon, it becomes unlikely that they will be able to infer what will happen or form connections to make meaning from the text. Inferencing allows the reader to be able to fill in what is not explicitly stated in the text by digging into their social and physical world knowledge, which is crucial to building the mental model of the story (Saldaña & Frith, 2006). Students with ASD often have difficulty synergizing their own information with new information to create new

schemata (McKenzie et al., 2010). Grandin (2020) stated concrete facts are more attainable than abstract concepts that require students to fill information in from their own background knowledge or critical thinking. Grandin suggested teaching students to break the question or sentence apart, thereby taking information in increments they can digest, and then searching their own mental files that may correspond in order to make meaning.

One way to support schemata activation or construction is vocabulary instruction. Pre-teaching key vocabulary can be an effective way to prepare students for success. Students with ASD may experience difficulty with activating the appropriate representation of a given text even if they know what the word means in other contexts (Koppenhaver, 2010). Therefore, pre-teaching the word in the exact context in which it is used in the upcoming lesson can align students with success. There are ample routes to teaching vocabulary and the right strategy will depend on the students. Erickson and Koppenhaver (2020) suggested describing new words conceptually with words with which students are already familiar using word webs or images. Furthermore, exposure to the new words in multiple contexts throughout the day increases the chances of acquisition and expression.

Poor readers can benefit from not only schema activation but also schema construction if their existing knowledge vault is either incomplete or has an inadequate representation of the mental model needed for the specific text they are about to read Alvarez and Risko (1989) pointed out that problem-solving lessons and activities can provide learners with situations that might help them build the necessary information to make meaning from the text. Further, such lessons can include varied contexts across

disciplines so cases can be examined from multiple perspectives. Compatible formats to carry out such activities include, but are not limited to, written documents, artwork such as paintings, artifacts, videos, and role plays.

In *The Way I See It*, Grandin (2020) stated people with ASD are bottom-up thinkers and learn by first recognizing simple details and examples they can categorize and build on to form a more complex concept. This collecting of details can be in the form of multiple literature examples as well as real-world scenarios. When I reached out to Dr. Grandin for clarification around emotional content in a story, Dr. Grandin said,

> Students on the spectrum are bottom-up thinkers. Everything is learned by specific examples. To understand the emotional content of a narrative story, you will have to explain a few stories to them. This will make it possible to recognize what the emotions are in a similar story read in the future. (personal communication, December 6, 2021)

Reading Comprehension Strategy Instruction

Direct reading comprehension strategy instruction in areas such as summarization, main idea, prediction, and inferencing is beneficial for students with ASD because these crucial elements of reading comprehension are often compromised in this population (Koppenhaver, 2010). Jitendra et al. (1998) offered a seven-lesson format to teach students with learning disabilities how to look for the main idea, which could possibly help students with ASD with their weak central coherence and summarization competency. Although Jitendra et al. did not focus on students with ASD, giving direct instruction in main idea identification is a useful skill for all struggling readers. The seven-part series focuses on the simplest formula for finding the main idea and each

subsequent lesson increases in complexity. For example, during lesson one, the student is asked just to identify the main person and the action of that person (or animal), as compared to lesson five where the student is trained to look at the multiple-choice items in which the main ideas are phrased as where or why statements.

Summarization is an important skill for students and can also support central coherence. Teachers should explicitly define what summarization is and model when and how to use it. Guided practice can follow these steps, perhaps while students are simultaneously being peer tutored or working in cooperative learning groups (Koppenhaver, 2010). Another way to teach summarization is to have an anchor activity where students take turns telling their favorite thing to do in 10 words or less. Then, the students can read or listen to a paragraph and use the same 10-word-or-less formula to generate a sentence about what was read (Erickson & Koppenhaver, 2020).

Inference-making strategy instruction is also beneficial to students with ASD. Reed and Lynn (2016) found in their experimental study that students with learning disabilities who were taught inference-making strategies scored higher on posttests than on pretests before they were directly taught. According to Spector (2006), making inferences is based on a person's ability to connect background knowledge to clues in the text. In the book, *Between the Lines, Enhancing Inferencing Skills*, Spector offered a breakdown of different types of common inferences encountered in text in ascending order from simplest to more complex, and accompanying scenarios with which to practice the skills.

Furthermore, when assessing for comprehension, teachers can explicitly teach Question-Answer Relationship (QAR) strategies (Taffy, 1982). This is a useful way to

educate students on different types of questions and where to find the answers to those varying queries. Students learn the answers can be found either in the text or in their heads. Background knowledge would need to be ignited to answer the questions from "their heads," which should also be taught. This classification of questions can make the process more straightforward for students, leading them closer to success.

Additional Noteworthy Strategies

There are additional interventions mentioned in certain articles but not others, such as motivating text, electronic devices, and explicit figurative language instruction. I believe these topics will grow in popularity with additional research. Specific interventions that need more attention are direct instruction, graphic organizers, supported electronic texts, self-directed strategies, shared learning, ways to interpret figurative language, and social skills instruction to help ToM development. Zein et al. (2014) recommended considering the theoretical explanations of weak central coherence and ToM as a rationale for the development of specific interventions to support reading comprehension. Another potential area for future research according to this article is using Applied Behavioral Analysis (ABA) strategies that work well for students with ASD specifically for reading comprehension support.

Movement Means More Than Movement

For students with ASD, kinesthetic actions from drama are more than exercise—they are a way for them to engage in the nonverbal behaviors that may be more of a first language to them. Their bodily movements might act as translation of the words, as they can essentially embody the language and digest it from head to toe. In fact, Lumby (2011) demonstrated in his study examining enjoyment and learning that students relish

bodily movement. Kinesthetic activity can lead to greater enjoyment of the class, and as such, learning is a byproduct of being put into a flow state, or optimal learning zone (Lumby, 2011). The keys to producing a flow state within students seem to be the degree of control offered to students, a change in the physical environment, and bodily movement (Lumby, 2011).

A Call for More Research

Snyder et al. (2017) expressed that evaluating reading comprehension for autistic people is new and concerns surrounding methodological rigor are to be expected, along with gaps and flaws. They pointed out that researchers should support one another as they, together, build upon each other's findings and make strong advancements in this area. Researchers consistently declare that more attention needs to be given to reading comprehension and autism as there is a dearth of research on the topic (Brow, et al., 2013; Whalon et al., 2009) coupled with such varying degrees of severity, differences, and preferences within the autism spectrum itself.

The Research and This Study

As I conducted this literature review, I learned that shared reading, direct instruction, the use of graphic organizers, schema building, and ToM instruction are beneficial supports for students with ASD, which aligns well with Vygotsky's sociocultural theoretical framework. I added these accommodations into my study with drama, play, socialization with mediated semiotic tools, explicit social-emotional instruction, and repeated shared readings. Additionally, I redesigned the text from a traditional novel into simplified scripts, which served as adapted text. Research shows students who are involved in repeated readings, as in theater, make significant

improvements in their automaticity, fluency, and comprehension (Young & Ortlieb, 2018).

Although automaticity and fluency will not necessarily lead to comprehension in this population, repeated readings help in addition to other interventions such as drama. According to Daniels and Downes (2018), students can socially shape who they are and play with identity and imagination when participating in drama. In this study, the drama activities served multiple functions, including schemata construction. The schematic themes that LM and I aimed to co-construct included complex paradigms such as social-emotional states and empathic responses, and simpler constructs such as physical events that transpired in the plot.

Baron-Cohen (1997) stated joint attention and gaze following are foundational skills to ToM that many students with ASD did not develop during early childhood. Drama exercises include pretend play, imitation, and joint attention, which indicates drama can be a gateway to the development of ToM. Similarly, Wolfberg (2009) found that peer play among students with ASD stimulates and nurtures each child's capacity for reciprocal social interaction and symbolic representation. Students with ASD rarely engage in symbolic pretend play and will more likely use toys as objects rather than as symbols (Wolfberg, 2009), and so structured activities that nurture the capacity to engage in this type of behavior can enlarge students' capability.

In addition to these benefits of drama, students engage in gross motor kinesics, which supports the embodiment of their new social role and reciprocal connections to each other. According to Radford et al. (2004), kinesthetic actions can assist in bridging the sensory to the conceptual and merge the concrete and abstract together. Although

their study was grounded in mathematic abstractions, they posited that perceptual activities, including gestures, mediated action, speech, and signs, all indirectly support knowledge formation by imagining, interpreting, and reinterpreting concepts continuously. Radford et al. encouraged more research in this area.

I examined ToM not only within the context of the play but also within the social dynamics of the "cast" during rehearsals. I wanted to observe whether students were more aware of each other in the virtual room when there was a concrete order of dialogue within the script, and whether this dynamic gave them a pathway to be interconnected with each other. According to de Villiers (2005), advanced ToM enables children to be cognizant of their own beliefs and distinguish them from the beliefs and feelings of others within a shared reality. From there, children can use this information to understand or even predict the actions and feelings of others. From my literature review, it became evident that book modifications can help autistic students understand text. As a result, I transformed the book *The Boxcar Children* into a script format, which helped reduce pronouns and irrelevant details that may have caused confusion. Anaphoric cueing, or explicitly displaying to whom the pronouns refer, can serve as helpful clues for students with ASD to follow the characters and plot (Saldaña & Frith, 2006). This anaphoric cueing recommendation was my inspiration to reduce pronouns altogether and have the format be as straightforward as possible.

Because students with ASD often have difficulties with symbolic thinking and representation, which are foundational skills to ToM, I had the students make props to act as symbols of the events in the story, along with ample visuals. Furthermore, most of the classes were structured in a way that required the students to have joint attention and eye

gaze on the screens in front of them. I always had the script dialogues on the screen for all the participants to track. In this way, the students were able to look at each other and at the same object, which, according to Baron-Cohen (1997), is triadic representation because the self is aware of another agent, and both self and agent are attending to the same object. Triadic representation is a subgroup of ToM (Baron-Cohen, 1997).

As there are increasing numbers of students with ASD streaming into the education system, schools should cater to this type of learner. It has become evident that there is a lack of effective resources and strategies for this specific population, particularly in reading comprehension. This leaves educators confused and frustrated as they may not have the proper training to support these students, causing this population to be underserved. From this literature review, I found multiple researchers who agreed that graphic organizers and adapted text are helpful, particularly when coupled with direct instruction strategies. Additional research needs to be conducted so the ASD community receives an effective, research-based curriculum to satisfy their unique needs for reading comprehension and to specifically discern whether the addition of graphic organizers, adapted text, and direct instruction helps them comprehend text. This study was my attempt to amplify and enlarge the discussion of ways to increase the reading comprehension of students with ASD using drama, art, explicit ToM instruction, graphic organizers, and adapted text.

CHAPTER 3: METHODOLOGY

Case Studies and Research Questions

Although there are some commonalities regarding literacy among students with ASD, their abilities ultimately fall along a spectrum, just like other students. Further research is needed on students with ASD because currently these students are enigmas in the classroom and are not adequately served because they have been grouped together in special education with others who have vastly different needs. I specifically developed two research questions to guide the data collection and analysis (Barone, 2011) in this study while working with four teenagers with ASD and their caregivers:

1. How can drama, scripts, art, and sensory stimulation support the reading comprehension and reading enjoyment of fiction text for four male teenagers with ASD in Northern California?
2. Do parent perceptions of the reading comprehension of their teenagers with ASD shift after Story Club participation?

Three of the four participants' parents had expressed concern about their children's difficulty with reading comprehension and fiction text. Having their input provided a more holistic account of each student as the students had limited language and were unable to verbally elaborate on their experiences. I used multiple sources of data to ensure the quality of this study (Barone, 2011), including observations, films of the observations, field notes, student enjoyment surveys, work samples, and parent interviews. After identifying themes in the interviews, I cross checked my interpretations to ensure their accuracy.

One of the most important ways to ensure credibility in case study research is for the researcher to spend an ample amount of time in the field to observe patterns of behavior and to also look for negative evidence against their own biases (Barone, 2011). With this in mind, I worked with the students over the course of 3 months for 1 hour per week as a participant researcher and observer. In the history of research on ASD, qualitative studies and narratives have proven to be powerful avenues for voices to be heard and people to join together to develop new perspectives in the service of this disempowered community (Waltz, 2013).

There are many possible ways to construct a case study, including the exploration of an unusual, unique, or special case or cases (Lichtman, 2013). I used a sociocultural framework to study the experiences of four students with reading comprehension challenges and their responses to drama, adapted text, ToM instruction, art, and multisensory interventions during Story Club. There is a significant range of abilities within the autistic population, making case studies an appropriate method. This case study was descriptive and demonstrated that many factors contribute to the complexity of reading comprehension among students with this particular profile of ASD (Merriam, as cited in Terrell, 2016).

According to Yin (2018), "Case study research comprises an all-encompassing mode of inquiry, with its own logic of design, data collection techniques, and specific approaches to data analysis" (p. 16) in order to answer questions about a specific person or group. The data components of this case study included parent interviews, student observations, exploration of scripts as adapted text and role assignment to students, rehearsals and performances, observations of the students afterwards because the sessions

were filmed, work samples, comprehension questionnaires, enjoyment surveys, and self-perception surveys.

I was the researcher, teacher, and investigator (Lichtman, 2013) as I endeavored to explore whether drama and multisensory exercises, such as related artwork and prop making, are effective methods with which to translate fiction literature to students with ASD so they can make meaning despite their sensory overload and social-emotional confusion. Furthermore, I wanted to understand the perceptions of parents regarding their child's reading comprehension before and after the Story Club.

The Determined, Theatrical, Remarkable Participants

The participants were four male teenagers with ASD and their parents. All the students resided in Northern California. I assigned each student a pseudonym: Alex, Barry, Caden, and Denver. I called their parents Parent A, B, C, and D, matching the child's first initial.

Caden is a 16-year-old boy with ASD and ADHD. He has attended the same school for the past 7 years and has a strong bond with me because I was his teacher for 4 years. Caden takes great pleasure in learning and is fond of both fiction and nonfiction. His fiction book choices are often cartoons and fairy tales in comic book format. Caden can read at the third- to fourth-grade level and is possibly drawn to comic books because the dialogue, actions, and emotions are clearer than traditional text as there are illustrations and speech/thought bubbles. Caden has moderate autism and has learned how to express himself in simple phrases. Caden has auditory processing complications and, when asked questions, will respond when given extra time to process. When communicating with Caden, a beneficial modification is written words rather than

spoken; therefore, I typed out directions, comments, and questions I wanted Caden to process.

Alex is an 18-year-old boy with moderate ASD. Alex can decode words and reads at the fourth-grade level; however, he often does not comprehend what he reads when it is fiction content. Parent A reported that reading comprehension is Alex's weakest academic portion of school and said Alex avoids reading if given the choice. Parent A reported Alex has benefited from digital platforms such as Lexia to make gains in reading comprehension and attributed these gains to the visuals, the simplicity, the fun, and the fact that Alex cannot progress without mastery of the unit. During Story Club, Alex shined when the stage direction from LM was to rap his lines from the script. Alex usually had flat intonation and difficulty attending to the scripts but when his lines in the play required rapping, Alex was fully engaged. Alex did not attend class regularly and I was curious what would have happened if all of Alex's lines involved rapping. Unfortunately, I did not get the opportunity to experiment with this idea.

Denver seemed to be right at home with Story Club, as he is a natural performer and singer. He also likes to read and make different voices. He was so kindhearted, connected, engaged, and complimentary to everyone present. At one point in the club, all the students attempted to make mean faces to imitate one of the characters and Denver had a difficult time doing it. Denver especially loved the parts he got to sing. This was a huge benefit of having LM present. Without her, I would not have thought to even ask the students to sing. I often play music in my classes, but I do not actually have the students make the music. LM's offerings added so much to Denver's enjoyment as he delights in performing and playing.

Barry is the other student with whom I worked in the past. Barry absolutely loves plays and luxuriates in performing musicals. Barry has apraxia of speech, which makes his speech indiscernible, which is one reason why he seemed to find a sense of delight in the scripts and the ability for everyone to read along. Barry was always prepared and took his class time very seriously. He was a steady supporter of his peers. To show his enthusiasm, Barry would often rock, clap, laugh, smile, and cheer. Parent B attested that Barry is a natural performer, so this format was of high interest to him. However, Barry usually gravitates toward nonfiction when reading on his own, which Parent B surmised was likely due to elusive characters' dynamics and hard-to-follow plots. These four participants were a blessing to me; their unrivaled tolerance and acceptance were demonstrations of pure goodness. See Table 1 for further insights on each student.

Table 1

Student Brief

	Alex	Barry	Caden	Denver
Age	18	18	16	18
Previous relationship with researcher (Y/N)	N	Y	Y	Y
Reading level	Grade 4	Grade 3–4	Grade 3–4	Unknown
Gravitate toward fiction, nonfiction, or both	Nonfiction	Nonfiction when reading independently	Both	Both
Various interests	Horseback riding, rapping, socializing, art, math	Star Trek, performing, music, cooking, making t-shirts	Scooby Doo, fairy tales, music, books, hiking, art, geography	Singing, socializing, performing, music, voice generating for characters

Procedures

Planning this research was like booking a vacation, making the itinerary, and organizing the events without a budget or a travel agent. Alternatively, and perhaps more accurately, planning this research was like designing 3 months of lessons for a class, but instead of having flexibility and adaptability, being married to the original plan and needing to persevere. Though the research process unfolded in real time, it proved to be disorienting. I had to repeatedly surrender and practice faith. For me, that meant I needed to carry on when goals went awry and make the best of the complications that arose.

More specifically, the three participants I chose when forming my proposal almost all canceled. Two completely backed out and one had an unexpected trip that made his participation uncertain. The dissertation proposal period was extensive and between the formulation and the execution, my subjects abandoned the project because of timing complications. Initially, in the drafting phase, I was compelled to investigate students with specific types of autism profiles with whom I had worked extensively. However, life circumstances changed for two of the subjects and they could no longer participate. Therefore, I recruited Barry, Alex, and Denver without truly knowing their reading comprehension capabilities. Denver and Alex were recommended to me by the drama therapist, LM, and by another colleague. Alex's parent attested that reading comprehension is Alex's weakest academic area and stated he does not prefer to read. Alex reads at the fourth-grade level. Conversely, Denver's parent reported Denver enjoys fiction and understands the events in text but struggles with cause/effect and narrative comprehension. Parent D contemplated Denver's connection to the narrative dynamic

because Denver does not seem to be intrigued by the plot but wants to go through the sequence of the book in a more systematized way.

Barry was a student I knew well as a result of having worked with him for a few years. However, I did not initially have him in mind for the study because I thought his comprehension was higher than that of the initial students who had to cancel. This was one of the ways in which I had to surrender and trust the process as it unfolded. I wanted to ensure I had enough students to study, and I thought Barry would enjoy the class because he usually liked my teaching style, so I decided to include him. This turn of events helped the study dynamically evolve even though initially I resisted the change.

Caden was one of the initial students I had in mind to investigate and his trip finished just in time for the genesis of Story Club. I have worked with Caden for 7 years and am truly fascinated with how he learns and navigates the world. Caden is a kind, peaceful, and accepting individual and a true example of inclusion even though he has not always been included himself. As a result of Caden's trip concluding in time to join Story Club, I had four participants in total.

I came into the study slightly frustrated by the dissolution of my original plan, which was compounded by the fact that my entire project was designed to be conducted in person and because of the COVID-19 pandemic it was mandatory that all research be conducted online. Furthermore, once I finally had new participants, scheduling the classes with them was incredibly challenging. I initially thought we would have two classes per week for 12 weeks. However, there was only one window of time per week during which all four students were available simultaneously. I had to eliminate one class and be grateful that the students had one available slot per week for the next 3 months.

Furthermore, I planned on having three Story Club performances in total but that had to be cut down to two, also because of availability. Due to the nature of online learning, to ensure the students had the necessary materials, I made weekly trips to the post office after receiving my Amazon orders in the hope that they would arrive in time for our Thursday Zoom gatherings. It became costly to buy the separate materials and mailing them out was an extra fee. Despite these adjustments, the classes themselves went well. Of course, there were some imperfections throughout, such as my own mistakes in the scripts, student (and teacher) weariness at the end of a long day, and Zoom fatigue in general.

Last, though the parents agreed to complete the interviews and surveys during the beginning stage, having the surveys and interviews actualize were two different things. I had one family complete a questionnaire with the same interview questions to substitute for the Zoom interview because they were in the middle of a move. Another parent completely opted out, and I surmise the reason was the redundancy of the questions on the post-performance survey and the interview questions. One parent met with me on Zoom for the post-interview and another parent filled in the interview questions via email.

A collection of events I would like to celebrate about Story Club was the 12 classes themselves during which two to four students showed up each week and gave their all. They were fantastic participants who displayed their vulnerabilities, unabashedly paraded themselves virtually, and rooted each other on week after week. They all reported liking the class every single week. The students were lucky to have a drama therapist, LM, show up and actively participate weekly. LM provided acting coaching,

social-emotional instruction, and original boxcar songs that the students sang to their parents during the performances. LM added dimensions of soul, joy, and insight to the classes that would have been unattainable otherwise. LM also had a great command of the online space, despite it being an awkward setting for classes and performances. Eventually I went from feeling as though I booked an all-inclusive vacation on a deserted island to feeling as though I was cruising out at sea on a boat being pulled here and there; regardless, I remained safe and steady with my anchors no matter what. Those anchors were my proposal plan, my advisor, LM, and the students themselves.

To address the research questions, I first had consent forms filled out (see Appendices A-E) and then I conducted one-on-one parent interviews before Story Club began (see Appendix F), one-on-one parent interviews after Story Club ended (see Appendix G), student enjoyment and self-perception surveys (see Appendix H), student work samples, observations, transcription, coding, and analysis over 3 months to explore the results and analyze the codes and themes.

Data collection began in May of 2021 and included recorded parent one-on-one interviews on Zoom. After conducting the interviews, I began the Story Club lessons and explored students' interactions with their peers and with the text both during and after classes because they were filmed. The lessons continued through September. Once compete, in September, I endeavored to conduct another set of separate recorded parent one-on-one interviews to gather their impressions of the classes. I analyzed, coded, and categorized themes within the videos and from the transcribed interviews. Both obvious codes and subtle categories were expected. Expected codes were as follows: empathy toward characters, joint schema construction, social connection, and self-expression.

From the codes, I developed themes upon analysis. Table 2 reflects the timeline for the study.

Table 2

Timeline for Data Collection and Analysis

Date range	Data collection and analysis
May 2021	Scripts created (see Appendix I) Parent one-on-one interviews Students participate in Story Club Surveyed after each class
May–September 2021	Verbal assent of participants Story Club is approximately 1+ hours per week Comprehension questions (see Appendix J) 12 weeks in total, 13 hours of class to observe Researcher field notes Parent surveys after performances (see Appendix K)
October 2021	View and explore filmed classes Transcribe interviews (software) Code to find themes (expected and unexpected themes) Analyze work samples Create qualitative codebook
November 2021–January 2022	Write findings
January 2022	Complete

Data Collection

The data collection tools consisted of recorded parent one-on-one interviews through Zoom, participant observations, student self-perception surveys, student

enjoyment surveys, and work samples that consisted of simple comprehension questions at the end of the chapters and a drawing or a verbal retelling of the literary events.

Qualitative Data From Researcher

I was the primary source of data collection and gathered 1 to 2 hours of filmed Zoom classes per week that reflected Story Club sessions. There were 13 hours of sessions in total. The sessions were enhanced by art, props, music, scripts with simplified language, and character roles for the students to play. There was also a drama therapist present to integrate social-emotional instruction into Story Club. I used descriptive and reflective field notes to record any immediate reactions and insights, along with post-session reflections. Specific behaviors I looked for included spontaneous student interactions, scripted student interactions, a decrease in prompting to participate (which might indicate engagement), and the overall emotions of the students throughout the classes.

Qualitative Data From Students

Surveys. I administered surveys to gauge students' enjoyment levels and self-perceptions after each session of Story Club. Students were able to circle the face of the emotion(s) they felt after the class and circle how they thought they did during the class. I gave the students the same surveys after each class to observe how they felt and their self-competency during the sessions. Not all students filled out and submitted their surveys for each class, but the majority of the students did so.

Work Samples. I asked the students simple comprehension questions at the end of each class to see whether they understood the basic events in the story. I also asked

them to retell the story in pictures or words (oral, drawn, or written depending on their preference) and they could use the graphic organizers if they found them helpful.

Qualitative Data From Parents

Interviews Before Story Club. I recorded parent one-on-one interviews via Zoom before we began the classes. The questions included, "Tell me about your child's experience with fiction stories," "What is your child's biggest impediment to reading comprehension when it comes to fiction," "What is your child's greatest strength in this area," and "What has helped your child succeed in reading comprehension so far?"

Interviews After Story Club. I also conducted one-on-one interviews with the parents after the 12-week period to see whether their perceptions changed. I reviewed their prior answers and asked the same questions to see whether their answers changed. I also asked them, "What are your reactions to the classes and performances" and "How do you think your child did in these classes regarding reading comprehension as compared to previous LA [language arts] classes?" Not all of the parents opted into the interviews. Two opted out and two opted in. Of the two who opted in, one interview was on Zoom and another filled the questions out in writing.

Post-Performance Survey. The students participated in Story Club Zoom performances where they were able to act out the story in front of their parents and other audience members. The performances were special to the students and their parents as they all seemed to beam with pride. The students were delighted to get as into character as possible and express themselves in illustrious and memorable ways. This is also where the performers were able to sing the songs that LM masterly curated. After the performances, I distributed surveys to the parents to fill out.

Data Analysis

I analyzed the recordings of the sessions and categorized themes around behaviors, events, comprehension, and emotions. Some themes were expected, and I suspected there would be unusual themes as well. Possibilities for expected codes stemming from these themes were empathy toward characters, joint schema construction, social connection, and self-expression. Upon discovery, I categorized, analyzed, and logged the codes in the qualitative codebook. I juxtaposed the discussion among the participants to see whether their levels of engagement with each other were different when "in character" versus when they were sharing the space but not acting. I looked for signs of empathy toward characters such as a look of concern or a particular response on their survey (e.g., "I feel kind"). I attempted to discern whether the art activities activated or constructed schemas, which would ultimately and ideally contribute to gains in comprehension if the schemas were actualized. I found it easy to locate instances when the participants expressed themselves because that is when they lit up, and these instances frequently involved artwork, music, singing, or reading the script.

An analytic strategy (Yin, 2018) was important to construct as well. The theoretical proposition that guided my study was that students with ASD need individualized reading comprehension scaffolds. This proposition guided the development of my research questions and my data collection plan and ultimately guided my data analysis, including the rival explanations. I employed pattern matching to analyze whether predicted patterns matched with empirical patterns after the data collection. For example, my expected patterns were that the students would get four out of five on 80% (or more) of their comprehension assessments and would enjoy 80% or

more of the classes. After I collected and analyzed all the data, I was able to determine that my predicted patterns matched my empirical patterns.

Trustworthiness

To ensure credibility within my study, I used Terrell's (2016) outline of suggestions that included the following:

- prolonged engagement to build trust and rapport with informants and the environmental culture,
- persistent observations,
- triangulation among all forms of data,
- peer debriefers to examine my materials and provide feedback,
- negative case analysis that went against the uncovered themes

My prolonged engagement with the participants was 3 months to extensively witness the students in this Zoom environment with each other. During these 3 months, I reviewed the films to observe subtle behaviors I may have missed while running the class. I re-watched the classes again after the entire series was over to uncover more with a posterior perspective. Triangulation transpired through multiple forms of data, including observations, surveys, interviews, and student work samples. I analyzed the data extensively and made cross-connections and interpretations.

Furthermore, an important approach to trustworthiness is a way of writing called "thick" description, which was explained by Creswell and Poth (2018) as an intentional writing style that includes rich details to express the cultural concepts of the participants. Thick description can include quotations confirming the social structure, kinship, political structure, and social relations or functions that mirror the culture of the community being

studied (Creswell & Poth, 2018, p. 94), with the purpose of having the reader experience the phenomenon. As I summarized the classes, I endeavored to engage in reflexivity with the aim of neutrality and transparency while telling the story of the four participants.

Member checking is a vital way to support trustworthiness. Questions researchers can ask themselves about the participants include, "How will they see the write-up? Will they be offended? Will they hide their true feelings and perspectives?" (Creswell & Poth, 2018, p. 229). Member checking can directly remediate these questions so participants have an opportunity to review their remarks and the researcher's interpretations or summarizations of the remarks. After writing the dissertation sections, I extracted excerpts that pertained specifically to a participant and double checked with the members for accuracy and appropriateness. Four out of four families responded and confirmed the summaries and briefs of their child. I also sent the entire dissertation draft to LM to ask whether she approved of its accuracy and descriptions. LM expressed positivity and support of the paper.

A colleague of mine, or peer debriefer (Terrell, 2016), in the PhD in Literacy program at St. John's University reviewed my trustworthiness section and offered guidance. This colleague suggested adding more information on member checking and researcher bias, specifically from Creswell and Poth (2018).

Explicit Information About the Researcher

Creswell and Poth (2018) recommended that the researcher engage in reflexivity by documenting their experience with the phenomenon being explored in addition to how these past experiences might shape their interpretations. In accordance with this guidance, I documented my history with this population as follows. In 2014, I was hired

at a school for students with ASD in Northern California to work as an assistant teacher. I eventually became the art teacher, and then the language arts teacher, followed by the Literacy Specialist. I have been fascinated with the specific challenges that affect the reading comprehension for autistic students that I outlined in the literature review.

The largest strides students have made with me while working at this school have been when I have created my own materials with the students in mind and added in numerous modalities for them to engage with and learn from. Moreover, this school is progressive and focuses on social-emotional relationships and creative interventions for students with ASD. My experiences as a lesson and curriculum designer have influenced my perspectives and biases. I believe students need multiple modalities to engage with and I also believe many students with ASD benefit from social-emotional instruction, video modeling, and role plays to understand the dynamics in a fiction story.

Furthermore, the drama therapist and I have worked together at this school and in our own after-school program for approximately 7 years. We have similar mindsets about this population, which was also difficult to separate from while I documented my interpretations of events and social dynamics. My attempt to combat my conditioning came in the form of rival explanations, or negative case analysis (Terrell, 2016), that are sprinkled throughout the paper to concretely draw attention to how my experiences and biases can influence my own understanding, which had the potential to infiltrate the study without my knowing.

CHAPTER 4: FINDINGS

Parent Interviews

I conducted four initial pre-Story Club parent interviews, one for each student. The interviews lasted less than 20 minutes each.

Parent A (parent of Alex) expressed that Alex reads at a fourth-grade level and has weak comprehension, but he has strong working memory as shown by his ability to memorize words without grasping their meaning. Parent A reported Alex does not choose to read on his own, but when he must, he enjoys taking turns reading aloud with her. Parent A is trying to make reading fun for her son, so she subscribes to *National Geographic* magazine for kids to satisfy Alex's gravitation toward nonfiction but also with the hope of piquing his interest in fiction because the magazine includes some playful, fiction stories.

Parent B (parent of Barry) reported that her son gravitated more toward nonfiction than fiction as well, and toward books with ample dialogue or a script format. Barry benefits from multimedia type of learning when on Zoom, as he enjoys embodying the role and the story. Barry also is a performer at heart. Barry struggles with the main ideas versus minor details, executive functioning, and social-emotional events in stories.

Parent C (parent of Caden) reported Caden loves reading and has great visualization processes but does need support with the visuals. Once he sees the visual, perhaps in a film version, he can hold onto and remember it. Parent C also stated one of Caden's strengths in reading is the ability to decode—he is a great decoder. Parent C reported that Caden benefits from an educator helping him relate the story to events in real life because he has challenges with making text-to-self connections independently.

Parent D (parent of Denver) reported Denver enjoys fiction literature a lot but is unsure whether Denver is picking up all the character motivations and emotions in the story. Denver understands the events but the other parts of the equation are sometimes lost, including cause and effect. Denver is sometimes resistant to answering questions as well, and that resistance makes it even more challenging to assess his comprehension. Parent D contemplated whether Denver has a connection to the narrative dynamic because Denver does not seem to be intrigued by the plot but wants to go through the sequence of the book in a more systematized way.

Research Question 1

How can drama, scripts, art, and sensory stimulation support the reading comprehension and reading enjoyment of fiction text for four male autistic teenagers in Northern California?

The scripts, drama, art, and sensory experiences were crucial for the students to "wear the story." I use the phrase "wear the story" because I wanted the book to feel immersive by providing the students with continuous interactive experiences with the characters and events, coupled with sensory activities. I was curious whether incorporating more of these elements would lead to a deeper understanding of the text. It appears that in the classes with more extension activities that included art and sensory projects, the students digested and processed the story at deeper levels. It was imperative that I constantly brought the story into the sensory projects, as otherwise it was easy for the students to separate the extension from the story, which might have acted as a distraction rather than a comprehension enhancement.

Drama: And (Social) Action!

The drama aspect of the class was led by LM, a licensed MFT and drama therapist. LM has written and directed many school plays and has worked for over 15 years with students with ASD around their emotions and the emotional states of others. This transferred exceptionally well into Story Club as the students were reading scripts, acting, and role playing the characters' fluctuating emotional states. In the first class, LM talked about and demonstrated the emotion "cross," as the character in the first chapter encountered a cross person. We talked about the multiple meanings of the word and what it meant in this exact context. This kind of cognitive flexibility can be challenging for students with ASD because they can be fixed to certain ideas.

The good news is that a classroom teacher does not need this level of expertise to use scripts and role plays for more effective instruction for students with ASD. Moreover, this instruction on social-emotional dynamics can benefit more than just students with ASD. Educators who are aware of the benefits of this type of instruction can incorporate it into any story they are reading. Visuals and role playing are highly effective and usually enjoyed. Furthermore, recruiting the school counselor or the speech and language pathologist to support and collaborate could help reinforce concepts and the generalization of skills across the curriculum. Vygotsky (1978) stressed the importance of social action for students to first understand the social world around them and then to eventually be a part of the orchestration of culture once the rules and roles are understood. Vygotsky believed social action can take forms such as art, theater, and play, which can then act as a psychological mediation to symbolism and imagery (Daniel & Downes, 2018; Vygotsky, 2012).

Scripts

The scripts were helpful for the students though it was time consuming to adapt each chapter into a simplified, color-coded script with visuals. Therefore, this might be an unrealistic expectation for teachers to do for their lesson plans. However, the most unexpected and enlightening revelation from this process was how impactful punctuation and exaggerated letters were for the students to know what emotions to portray and what intonation to use. I caught on to the impact of the punctuation in class six and then experimented with it in subsequent classes. Caden, Barry, and Denver were all affected by the punctuation and exaggerated letters. Caden was the most affected, followed by Denver and then Barry. In a sense, this is an example of Vygotsky's claim that scaffolding simple, concrete elements can be a gateway to more abstract composition for students with disabilities (Vygotsky, 1978). Alex did not seem to change his intonation either way, which indicates each student must be viewed as a unique individual. What may be effective for one or some students may not be effective for all students. The only thing that affected Alex's intonation was when he was asked to rap—Alex glowed when rapping!

The color coding of the scripts was also important for some of the students to track the progression. I became aware of this one day when I incorrectly color coded and it threw off some of the students. Barry had to be prompted multiple times when it was his turn, when he usually knew independently. It was unclear whether this was because Barry was dependent on the color coding because Story Club conditioned him to be, or whether color coding is genuinely a good system for students. However, a rival

explanation could be that Barry was just tired this day and "off," and his behavior was unrelated to the color coding of the scripts. More research could be done in this area.

Additional modifications within the scripts included the use of enlarged text and visuals. The enlarged text and visuals evolved from my observations of the students, discussions with LM, and, most importantly, the students' individual ZPDs, which informed the scaffolds (see Appendix L). Furthermore, Vygotsky highlighted the crucial aspect of social experiences and social action in learning from a more knowledgeable other (John-Steiner & Mahn, 1996). In this sense, peers, teachers, and scripts can all play the role of the more knowledgeable other. Because students with ASD sometimes have social communication struggles, the scripts are great models of how dialogue works.

The Joy of Art

I mailed the students clay that we used often to make props (i.e., symbols) from the story, hold up to the cameras, and incorporate into the drama. The students made cookies, cherries, bread, and items for a sick character. The students drew a lot as well to solidify events from the book. Designing an actual box to create a boxcar model while we listened to train songs seemed to be pleasurable for the students. These were all attempts to bridge the concrete to the abstract. The students seemed to thoroughly enjoy these exercises and looked proud of their accomplishments. One of my concerns was that they looked at the art activities as separate from the storyline, so I continuously brought the activity back to the story so the students did not lose sight of why they were making the prop. For example, at one point one of the characters got sick and I asked the students to make the character something using the clay to help him feel better. Denver made a cough drop, Caden made soup, and Barry made orange juice. I told them how kind they

were to make those things for the character in the hopes of reinforcing the connection to the text and encourage critical thinking and empathy (e.g., “What would make Victor feel better? What makes you feel better when you are sick?”).

Sensory Stimulation

Sensory exposures were the most challenging extension to accommodate while distance learning, especially because the students were not independent. Therefore, it was crucial to coordinate with the parents, who were sometimes busy or unavailable at the time of Story Club. Because of the transformation from in-person classes to online classes, I was not able to add the sensory additions as frequently as I planned otherwise. For example, I would have included much more food and aromas if I had control over the environment in which the students were learning.

There was one class where a character in the story was given cookies. I encouraged students to bake cookies beforehand so they could smell and eat them when the story corresponded with cookie consumption. Barry baked cookies and looked very proud of his enormous plate full of perfectly-browned chocolate chip treats. The other students had their own store-bought cookies that they enjoyed as well. There was a corresponding cookie art activity that I did on the computer and the students replicated what I did at their homes (see Appendix M).

Reading Comprehension, the Reason to Read

After each class, I asked the students five comprehension questions that were aligned with the social-emotional instruction, the art, and the sensory extensions that aligned with the book. The questions were in a multiple-choice context with only two options (i.e., a or b). Alex scored an 80% on one set of comprehension questions, Barry

scored a mean score of 89% on 11 sets of comprehension questions, Caden scored a mean score of 90% on 11 sets of comprehension questions, and Denver scored a mean score of 92% on 11 sets of comprehension questions. Alex came to seven classes, but he always had to leave early. There was only one day that I had him take the quiz, which is why he only had one data point.

The empirical scores matched my predicted patterns, indicating the Story Club format was beneficial to the students' comprehension. A rival explanation, however, would be that the comprehension questions were too easy and there were only two options. Research shows that for students with ASD (Snyder et al., 2017), having fewer multiple-choice options gives them a higher chance of getting the answer correct and the other choices can distract them, which was my rationale for only having the two options. I am curious to see how scores would change if I increased the multiple-choice options or if a neutral party came up with the comprehension questions.

Enjoyment: The Boxcar Boys Just Want to Have Fun

On 100% of the surveys, the students reported "liking" the class. They reported other feelings such as fun, kind, excited, bored, happy, and tired. In a post-interview, Alex's parent reported how the "fun" mail Alex received weekly made him excited for Story Club, even though he did not like reading. Alex was excited and happy to come to the club each week and he really enjoyed the social and performance aspects. Parent B said Barry "loved Story Club whereas in the past his reaction ranged from liking the class to really disliking the class when taught in a very traditional manner." Parent C and Parent D opted out of the post-interview, but their surveys indicated their sons enjoyed Story Club each week.

Research Question 2

Do parent perceptions of the reading comprehension of their autistic teenagers shift after Story Club participation?

Results showed 50% of the parents' perceptions changed and 50% did not change. Parent A reported in her post-interview that though her perceptions did not change, she did glean insights about what supports and modifications work well for Alex's comprehension and enjoyment of fiction literature. Parent B reported that his perception changed and his son loved Story Club. Parent C reported her perception changed as well. Parent D reported his perception had not changed. Parent D concurred with Parent A in believing his son enjoyed Story Club and that it was an effective way to teach students with ASD.

All the parents (100%) reported that Story Club seemed to be an effective way to have their child understand fiction text, that their child enjoyed Story Club, and that their child felt successful during Story Club. These results indicate to me that though parents' perceptions about their child and fiction text may not change, Story Club is an effective and enjoyable way to teach fiction text to children with ASD.

The Class Series Trajectory: I Love This! Yay, This Again! Is it Over Yet?

There are many unique qualities about Zoom classes that I never previously planned to know so intimately. Since the start of the COVID-19 pandemic, the world has relied on Zoom and other virtual platforms to conduct live classes. In some ways, Zoom is better for teaching because there is one focal place to look. Students with ASD can sometimes be visually or auditorily distracted or preoccupied. Because there is one place to look for the class, the social roles are slightly clearer. The rest of the environment is up

to that individual person. The beneficial aspects of this are that students can control their household temperature and noise, students can use their own facilities, and students (hopefully) have access to their favorite food and drink. The pitfalls of this are that, as a teacher, I cannot control or enhance the physical environment as planned. I had visions of engaging more of the students' senses on a regular basis. That was a tremendous obstacle on Zoom because I could only buy and mail so much to them. Another downfall of Zoom is that there is an awkward dimension that exists nowhere else. This elusive dimension includes the slightest delay so when people begin speaking at the same time and then stop at the same time, it is shocking. The social laws on Zoom are slightly distorted for undetermined reasons.

In retrospect, the 12-part series was too long. Despite students and parents reporting that they enjoyed every class, the gestalt of the emotional energy indicated the first third of classes were exciting, the second third of classes were stabilizing and enjoyable, and the last third of the classes dragged on. If I had to plan it again, I might shift Story Club to an eight-part series or less.

The classes were more challenging to schedule than I anticipated. Having all the students home and available at the same time proved to be difficult. My initial plan was to have two online classes per week that were at least 60 minutes long. What transpired was one class per week that was on average 60 minutes. I recorded 13 hours of classes that I re-watched, looking for each theme once it emerged from my data analysis. The unexpected themes that arose were inclusion exemplars and the dependence on punctuation to know intonation and perhaps to know the social-emotional tone of the

characters. The expected themes that emerged were empathy toward characters, joint schema construction, social connection, and self-expression.

Class One: June 17, 2021, 1 Hour and 10 Minutes

I was nervous before the students came on. I felt as though I had no plan and I had forgotten how to teach, which were both erroneous conclusions. Once the students began strolling in from the "waiting room," which unfortunately had no couch or magazines, I felt immediate relief. Each student with ASD is unique, but one thing about this group is that they were all endearing, charming, hilarious, and fun-loving. Once they came in, I felt comforted because they were warm and friendly and I remembered what a gift it was to have them in my life.

Alex, Barry, and Denver were present for class one. The students met each other, met the characters, and acted out the first chapter from *The Boxcar Children*. Barry and Denver appeared to enjoy the sociocultural environment and reading the script. Alex appeared slightly distracted and perhaps bored. Denver stated "good job" and cheered Barry on. When LM introduced the chapter song that she wrote, Denver and Barry lit up. This class was slightly awkward because it was the first one. There was no spontaneous dialogue between the students like I predicted and expected. The students needed further mediated semiotic tools to interact with each other, which, according to Vygotsky (1978), can be the language itself or other objects.

I realized after this class that one of the major pitfalls of online learning is materials. It dawned on me that I had to get the materials and mail them out to the students each week. That ended up being time consuming and expensive but without materials it would have been very difficult to have the students engaged with their hands,

which is a huge component of sensory learning. Moreover, as engagement in art can be a pathway from external imagery to internal imagery, it was crucial to get the materials out each week.

Class Two: June 24, 2021, 1 Hour and 25 Minutes

Barry and Caden were present for Class 2 and both were smiling. Caden had a hard time reading his lines with intonation. There was no exaggerated punctuation like I began experimenting with in upcoming weeks. There was a crucial difference between how Caden read after the punctuation and letters were exaggerated versus how he read with grammatically correct punctuation and spelling.

Caden tried to prompt Barry to read his lines but did not have the language to say, "It's your turn," and instead said (in response to the last character line, "I want a cup"), "Here's a cup. Here you go," which indicated to me that he was alert, attending, and aware that it was Barry's turn, and yet he still did not have the appropriate language.

The students enjoyed creating actual boxcars from cardboard boxes and miniature furniture. According to Vygotsky, it is important for vulnerable populations who might not connect socially to tap into their creativity in school, possibly becoming a pathway to social connections (as cited in Daniels & Downes, 2018). Vygotsky's thoughts on this seemed accurate when the students showed each other their perspectives on the artwork. Caden and Barry looked proud of their creativity.

LM helped the participants embody the characters by having them hide behind a prop, just like the characters hid behind a bush in the story. LM also stressed what body sensations a person might feel if they are scared (e.g., tense shoulders, fast heartbeat) because the characters were scared when they hid.

Class Three: July 1, 2021, 1 Hour and 16 Minutes

At one point in the class, Alex took a long time to realize it was his turn to read. The other students waited patiently and did not prompt him. Once Alex realized it was his turn, he read, and his peers were excited for him. In retrospect, I should have scaffolded the language more. This is an area I would like to explore further in the future. I could have scaffolded the language to use when it was one of the other students' turns. Merely telling the students they could prompt their friend that it was their turn was not a strong enough scaffold. Just auditorily hearing that direction was out of their ZPDs. They needed more suitable mediated semiotic tools to master this goal; perhaps a visual on a popsicle stick would have worked.

Further along, Alex attended and acted out what Denver read and gave him a "thumbs up" in support. The students got excited to act out the feelings in the story during the reflection. LM encouraged them to act out and feel the words as they read the summary and demonstrated. LM seemed to be a liaison to the emotional world and appropriate cultural responses to life circumstances.

The artwork was enjoyable for the students, yet also necessary because it served as a comprehension tool not only for the book but for sociocultural norms. Furthermore, the artwork helped slow the story down to give the students time to process events, with an emphasis on the paramount circumstances that transpired. This was especially useful because a common trait among this population is their incredible attention to detail, which can make the main ideas elusive. When the main ideas are turned into artwork (e.g., making an actual boxcar out of a cardboard box, paint, and decorations; making a mock vegetable garden out of clay and play dirt; or plucking cherries off a branch), it

becomes easier to imagine the gestalt, which might increase the likelihood that the students will understand the plot.

This was the first class where LM challenged the students to accompany the script reading with more emotion and intonation. LM advised me to insert clear directions about what voice to use (e.g., "Benny talks in a scared voice"). The students responded to this change, and the intervention seemed successful. However, the comprehension questions were at the end of the long class, and I think that affected the scores. This was when I began considering that the classes were too long for Zoom. Caden told me repeatedly at the end that "it's 5:11!" which indicated he was wondering when class would be over.

Class Four: July 8, 2021, 1 Hour and 18 Minutes

The students were excited to be present and spontaneously greeted each other. I mailed the students blueberry bushes made out of cardstock and tissue paper blueberries so they could pluck the berries off during the part in the story where the characters go blueberry picking. I also mailed them wool felted dogs that served as a prop of the dog named Watch that appears (see Appendix N). The students enjoyed using those props. The dogs had paperclips secured to their front paws to mirror what happened in the chapter when the dog had a thorn stuck in its front paw that had to be taken out and bandaged by the character. The students had to do that extraction with their pretend dog. I wondered if practice not only helped with comprehension but also helped build empathy.

The review of Chapter 3 was done through the artwork the students created the week prior, and then we read through the main ideas that were explicitly delineated. The artwork seemed to be successful symbols of the previous chapter. The students seemed proud of themselves and more grounded in the class. It became evident during this class

that the students took their roles seriously. In the review, when asked about what a character named Henry did, Denver, who played Henry, said, “Yes that’s what I did. I did that!” Denver also went on to correct LM about the events of the story because she made up a line in the spirit of flexibility. Denver was not flexible with that line, yet he did display accurate comprehension.

When it was Alex’s turn to sing a part, Denver rooted him on, saying, “You [were] perfect. I love it!” Their rooting on of each other was heartwarming and their self-confidence was inspiring. Denver said, “I’m really good at rapping,” and Alex said multiple times, “Check it out. I got this.” These were two concrete qualities that mirrored Vygotsky’s (1978) perspective on students learning and practicing societal and cultural designs through social action.

There was also a musical activity in this class. LM had the idea to use the melody of “Under the Boardwalk” but to change the lyrics to be aligned with the story plot (i.e., “Under the boxcar we’ll be having some fun, under the boxcar there will be blueberries and bread”). LM asked the students for help with the words and then they happily took turns singing the song while co-constructing the lyrics. The songs themselves also became symbols of the plot.

Class Five: August 12, 2021, 1 Hour and 22 Minutes

All the students seemed thrilled to attend the class. When Barry arrived a few minutes late, Alex spontaneously verbally greeted Barry and the others waved. Barry smiled and waved back. The group had a review of the previous class visuals and the students recalled what happened in the previous chapters. The students were able to

remember each event according to the picture; however, they were not able to sequence the visuals. Sequencing confused them, even when LM provided a musical hint.

For this class, the students received a jar filled with kinetic dirt with miniature plastic items that one might find in a garbage dump (see Appendix O) because that is where the boxcar children go in this chapter. The students looked pleased to have these jars and prior props they had nearby. LM decided to go over the word "phew" and what relief feels like and the body sensations that go along with it (e.g., relaxed versus tense shoulders). Then the participants role played the feeling of going from scared and tense to relief. The point of this exercise was to stress the characters' emotional experience in this chapter when they find out the noise in the woods is just a friendly dog, and not a bear or other danger. We broke to draw a dog before we proceeded to the script. The participants looked slightly tired. I put on a Dolly Parton song about a dog for the students to listen to while they drew, and they seemed energized by that. As soon as the students started reading again, they looked like they were centered.

Class Six: August 19, 2021, 1 Hour and 6 Minutes

The students began with a rehearsal because they had a performance for their parents in two classes. I changed the Zoom names from the students' names to the characters they were playing to help everyone remember their role. I explicitly told the students during this class that if someone was taking a long time to go, they could say to their classmate, "It's your turn," just to see if that would help them prompt each other. However, it became clear that the participants needed a more concrete mediated semiotic tool to accomplish that level of agency. I realized this in my data analysis period, and it was too late to try this intervention.

LM gave ample stage direction as she aimed to get the students to actualize their roles. LM also wrote original songs to go along with the chapter themes. One student sang and when he was finished, Caden was quietly clapping for him. When it was Caden's turn to sing, Barry and Denver were engrossed and smiling in support. Barry beamed with pride as he read his lines, possibly because he has apraxia of speech, which makes it difficult to understand what he says when he talks without scripts or assistive technology. In this format, he can speak at length while people follow because everyone has the script.

Music, exaggerated punctuation, and letters became crucial mediated semiotic tools to aid in the students' comprehension. Caden read his lines in an extremely flat intonation before the addition of exaggerated punctuation. The overemphasized punctuation served to get Caden's arousal up while simultaneously providing a concretized system of discerning the character's emotional state. Alex also read in a monotone voice. Once LM invited him to rap, Alex lit up. The music and singing seemed to awaken the students' spirits. Denver stated, "I just really like this boxcar song. I really got into it," Alex said, "I just love the blueberry rap," and Denver stated, "I feel delighted about that [the singing]." The students shined in this chapter and expressed themselves in wonderous ways that were truly a blessing to witness.

After the rehearsal, we reviewed the prior week using the jars with the dirt and the items the kids found at the "dump." Caden is very literal and so he answered what he found in his "treasure" jar, rather than what the boxcar children found. LM gave Caden options, and he was able to recall where the children went and found treasures. Giving

the students two to three choices seemed to be an extremely effective way to help them recall events from previous chapters.

This was such a full class, but the students were champions. This class included making cookies out of clay to use as props during our reading. The students were typically engaged when their hands were involved, especially when working over the computer as it was easier to be distracted when we were all spread out.

The students could not pinpoint why a character would put a cookie in their pocket and pretend to eat it, which was not surprising because that took critical thinking, such as "Henry is pretending to eat the cookie so that Mrs. Moore thought he ate it, but he really planned to save it to take back to the boxcar and share with his siblings." To stress the point of Henry being generous and sharing his cookies, we did an activity. The students each made 10 clay cookies. They had to divide the 10 clay cookies up between four different plates, pretending they were the four siblings. Barry even baked a plate of cookies before class, as I wanted the students to be able to smell and taste cookies as well. The other students also had treats to eat. If I had control over the physical environment, this would have been one of the days we baked cookies together, combining tactile, olfactory, taste, vision, and sound while reading the script. More research can be done in this area as it may benefit students' memories, background knowledge, social awareness, and enjoyment. This practice seemed impactful for Caden, who in his survey after class reported feeling "kind" when he normally answered "happy." It is possible that his kindness indicated empathy for the character who shared his cookies with his siblings. A rival explanation could be that this was unrelated and Caden just felt kind because he had a good day at school.

Class Seven: August 26, 2021, 41 Minutes

The students jumped right into rehearsing for the performance on the 31st but became confused because I had the wrong colors in the script. Denver came in a little late ("Well hello there!" Denver shouted) and that gave me the opportunity to quickly correct the script colors to those to which the students were accustomed. It seemed the students depended on systems like this (e.g., color codes and punctuation) to understand and organize the content, track their turns, and stay regulated. This was the first class in which I was fully convinced that the students were wholeheartedly affected by punctuation and that I could exaggerate the punctation to help the students discern the characters' emotional states. LM also put additional stage direction in the script that helped the students understand and demonstrate the emotional states (e.g., "In a scared voice," "Benny does a big yawn").

The rehearsal was joyful and the students were cheering each other on, dancing, and swaying. They were jubilant and fully engaged. As the class progressed and we moved from the rehearsal to Chapter 7, some of the students showed signs of fatigue, but seemed to be energized when it was their turn to read lines. At one point in this chapter, the character Henry goes to work at a garden. I sent each student a box with kinetic dirt and vegetables made from clay. The students were instructed to put the dirt in the box and arrange the vegetables (see Appendix P). Then, they had to practice "thinning the vegetables" as the character does in the story. There was a point in this class where the character took a bundle of vegetables home with him. When I asked what the character would do with the vegetables, one student called out, "make soup," which surprised me because this student typically needed to be prompted to make guesses. It is important to

note, however, that this student was with his mother on Zoom, and it was unclear whether his mother prompted him. However, I missed my own line and that same student prompted me by reading it for me. Caden was particularly attentive and focused today. Caden also prompted me to say my line after him. It was incredible. All the students scored 100% on the comprehension questions for this class.

Class Eight: August 31, 2021, 1 Hour and 9 Minutes

At one point in this class, Caden mirrored LM's gestures of laying logs in the brook. My impression was that Caden did this to keep himself alert and attentive. It seems as though Caden's hands are a gateway to his brain. Caden often struggles with racing thoughts, which he described as "videos in my head," as he answered on one of his surveys. Caden wanted the videos to shut off but it was difficult for him to do that. His hands might be a good intervention to keep bringing him back to the present moment and to combat the barrage of videos. Hands-on activities might be an important strategy to use with Caden to support his attention and comprehension. I mailed home paper rocks for the students to cut out and a picture of a brook. The characters in the story build a dam so they can have a little pool in the brook. I had the students cut out the rocks and glue them in their paper brooks to design their own dam along with the characters.

The participants were excited to find the eggs I sent home because the characters find eggs in the book and cook them for dinner. Barry was not holding up his eggs and I did not think he had his materials even though I sent them to his home. This is another complication with online learning. The educator cannot control who has their materials for class as they are not physically in the same room.

The rehearsal and performance were reminders of how impactful singing, music, and performing were to this group in Story Club. Caden and Denver were supportive of Barry as he sang. Caden was proud of himself when he sang his song perfectly. The students were excited when their parents arrived at the performance on Zoom. During the actual performance, the students acted in an over-exaggerated manner, indicating to me that they were making significant efforts to replicate appropriate displays of emotion.

Class Nine: September 9, 2021, 44 Minutes

This class was all about cherry picking and the students were picking cherries off a branch that I mailed home to them (see Appendix Q). The students seemed to really enjoy plucking the red plastic cherries off the foot-long branch. This tactile activity elevated their arousal by physically challenging them. The class discussed cherries and cherry desserts while they made clay cherries. The discussion was intended to add depth to the chapter while simultaneously making text-to-self connections. The students seemed slightly bored and disengaged with this chapter. The energy began to shift from "Great, this again!" to the last third of the classes as stated in the heading, "Is it over yet?"

Class 10: September 19, 2021, 59 Minutes

I asked the students without giving them reminders about what happened in last week's chapter, and they could not recall. I reminded them of our activity when I said, "Remember when you plucked things?" Denver shouted, "Oh, I remember . . . Cherries!" I asked the students, "Why were we picking cherries last week? What happened in the chapter?" and the learners needed two options to recall. Caden answered, "Because it's fun!" Caden responded once I gave him two options and he still could not recall the correct one, so I showed the students the visuals of the chapter to remind them. I was

surprised that they could not connect the cherry-plucking activity to the events in the chapter. To me, this indicated weak central coherence, or strong attention to detail. It is possible that the students were so engaged in the moment, focusing on the plucking of the cherries and the feel of the stick, that they lost the project's connection to the book. A rival explanation could be that the students forgot the chapter they read the week prior, and the cherry-plucking activity was not successful in igniting their memory of the week before.

Once we began choosing roles for the class, the participants became energized for their parts. I put on a popular song by One Republic and the students became even more energized and got into their roles, but then their energy fizzled out by the end of the song, so I cut it off early. There was an event in the book called "Field Day" where one of the characters runs in a race and the song is all about running. I mailed the students home a flag and a trophy to remind them that the character won the race. Caden asked me, "Where did you get this flag?" I answered, "I got the flag off of Amazon." Caden replied, "How awful. Where did you get this trophy from?" I responded, "I also got the trophy off of awful Amazon." Caden replied, "Get out. Get out and stay out." I was surprised that Caden had such strong feelings about Amazon. His caretaker explained that he had a campaign going at his home against Amazon and was trying to stop his family from using its services. Caden liked going to stores. This prompted a discussion among the group members of who liked Amazon and who disliked Amazon, which enabled the students to practice different opinions and perspectives. Caden said, "I don't want to support Amazon." This was profound for Caden because he usually did not express such strong opinions so he must have felt triggered. Denver said, "I do want to support Amazon."

This was an example from Story Club where the mediated semiotic tools caused disturbances, which was unexpected to me and noteworthy. What was also noteworthy was Caden's ability to express himself in this sense and that Caden allowed the space for Denver to disagree.

We got into the rehearsal after the chapter. The students again read with correct intonation from the stressed punctuation and exaggerated letters (e.g., "Everybody RUNNNNNNNnnnnnnnnnN!!!!!!")

Class 11: September 23, 2021, 57 Minutes

Denver was able to recall the reason we had checkered flags in the previous class, as he stated, "That is when I won the race." Denver played the role of the character who won the race, which piqued my curiosity of his embodiment of the character as he referred to the character as "I" in his recall.

During this class, one of the characters got sick. I asked the students what they could make the character out of clay to aid in the character's restored health. Barry shouted out, "Orange juice." Caden's caretaker explained to him, "If you were sick, what would make you feel better?" Caden responded with, "Soup!" Denver took his time thinking of what he could make and eventually reported a cough drop. This was an exercise in building empathy for the character; however, I was unsure whether the participants put the emotional connection together even though they intellectually understood that the character was sick and needed nourishment. This seemed like another pattern of compartmentalizing the details rather than synergizing the components of class, which led me to be curious about how I can help students with ASD to synergize the different components of this class.

I gave Caden too many lines this class and he exhibited fatigue and said, “That’s a lot!” He then allowed me to take over. He said, “That’s too much!” I applauded Caden for setting boundaries. That does not always come easily to students with ASD, and it took LM a multitude of years of work with Caden to enable him to advocate for himself, so it was a display of growth and self-expression.

At the end of class, I gave the students the option of choosing music to listen to with their friends. They loved this. Denver sang along, Caden was up dancing, and Barry was rocking in his seat along to the Dolly Parton and Otis Redding tunes.

Class 12: September 30, 2021, 58 Minutes

In this class, we read the final chapter of the book. We encountered the emotion “cross” again in this chapter and the last time was in the first and second chapters. LM asked the students if they remembered what cross meant. Denver remembered what it meant and Caden made the facial expression before he could say the word “mad.” This piqued my interest about muscle memory and how role-playing could affect learning. It appeared Caden was able to role play the meaning before he conjured up the language for it, which to me mirrored Vygotsky’s (John-Steiner & Mahn, 1996) stance on social action and language leading to internal language. According to John-Steiner and Mahn (1996), Vygotsky believed that by being immersed in a community with more knowledgeable others, a child can pick up symbols and language that can (hopefully) eventually translate to internal dialogue and imagery. Caden relied on his external action of scrunching his face to lead him to think of the word “mad.”

The final performance was at the end of this class. The students got very energized and excited about the performance and their audience. The participants were

natural performers and enjoyed entertaining the crowd. The performances of Story Club were great because they were something for the students to look forward to and helped the class move along without it being too monotonous. By the time this class was over, I think everyone was relieved. Three months proved to be too long as the story seemed to be drawn out. Perhaps it would be better with a different book in the mix or 4-week increments per story. The parents and students looked proud!

Unexpected Themes

Punctuation as Guides to Intonation, Character Moods, and Motives. It was endearing to see just how concrete these students' minds are, as they were looking to systematize and organize experiences. It became evident as the classes progressed that the students depended on the punctuation as maps to expression and moods within the plot. Once I caught on, I began to explore exaggerated punctuation and exaggerated letters (e.g., "EVERYBODY CALM DOWNNNNNnnn!!!!!!!!!"). It was interesting to see how students reacted to the exaggerated punctuation. I began to wonder whether this would be an effective approach to providing students with ASD social-emotional clues as sometimes the moods and motives of characters can be elusive. The punctuation and exaggerated letters could be color coded for different meanings (e.g., a red exclamation point means mad, and a green exclamation point means excited).

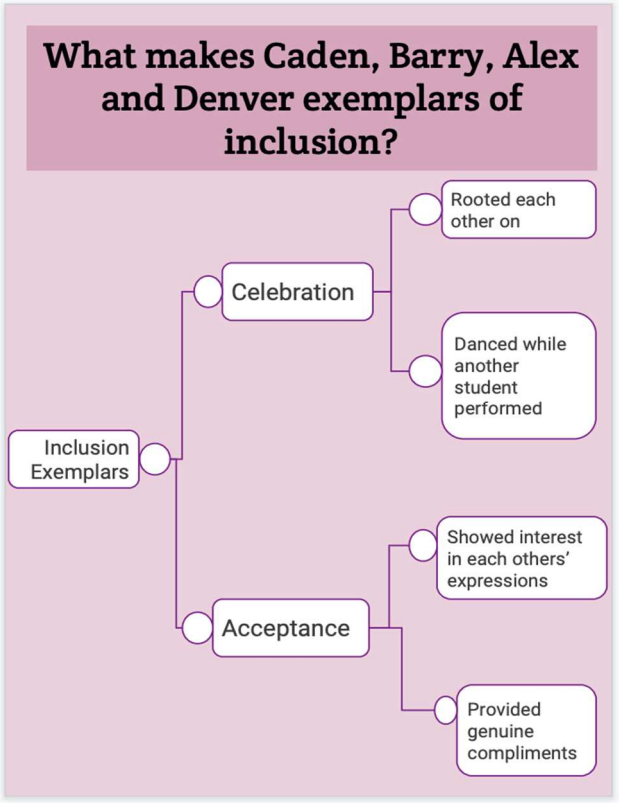
Students With ASD as Exemplars of Inclusion: What Neurotypicals Can Learn From Them. A theme that stood out to me as I watched the class videos was how accepting and kind these students were of themselves and others. They reminded me of the very qualities that we, as educators, try to instill in our neurotypical populations, such as acceptance, inclusion, tolerance, and kindness. I believe neurotypical populations can

glean some goodness from people on the spectrum. In inclusion settings, educators can shift the intentions and goals from how we expect a student with ASD to behave socially to perhaps how other students can behave more inclusively.

Of course, there are skills and concepts that educators want to instill in students with ASD from an academic and social standpoint. I am suggesting, however, that we adopt a more balanced view of their presence and purpose in general education classrooms. With this exchange, many autistic students can teach the neurotypical population about tolerance and acceptance. Undeniably, this is not the case for all students with ASD but for the people for whom this is relevant, shining a light on their sensitivity and care of others, with their consent, can be a way to help them feel as though they have something extraordinary to offer. The participants routinely cheered each other on, danced while each other performed, offered genuine compliments, and made space to allow others to be expressive (see Figure 1).

Figure 1

Exemplar of Inclusion



Music as a Portal to Energy and Comprehension. LM's addition of singing proved to engage, invigorate, and propel the students. At times during the classes when the students seemed stultified, one of the tools that elevated their arousal was singing or listening to music they chose. The singing of songs was supportive of the students' comprehension and allowed the participants to express themselves in empowering ways. Listening to their chosen music seemed to give them the break their minds and bodies craved, and the choice in the music may have made them feel in control.

Expected Themes

Empathy Toward Characters. Empathy is central to social communication and involves both cognitive and affective processes (Bos & Stokes, 2019). Previous research

indicated autistic individuals have impaired empathy (Baron-Cohen, 1997), though Bos and Stokes (2019) posited that previous research focused exclusively on cognitive empathy, ignoring affective empathy. This incomplete focus is misleading. Bos and Stokes pointed out that autistic individuals have normal levels of affective empathy even though they may not have matched cognitive empathy. As such, it might be a confusing and overwhelming experience to feel the feelings of others without the mental understanding.

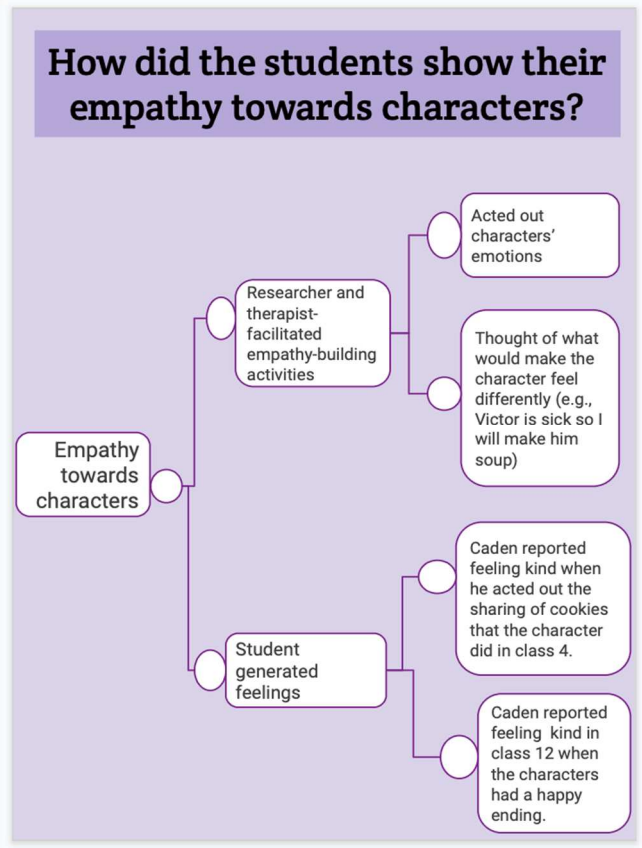
I integrated ToM-building exercises into Story Club, such as the acting out of the scene when the characters were scared and hiding. I wondered whether the ToM-strengthening activities would lead to cognitive empathy, paving the way to affective empathy felt toward the characters. The subsuming dialogue included why the boxcar children were scared and what they felt in their bodies. The class constructed clay props that aided in the corresponding role plays. These mediated semiotic tools were an attempt to synergize the language of experiences, comprehension, empathy, and conveyed emotion for the purposes of stage direction. The students were responsive and able to receive the information and display their understanding through their facial expressions, tone of voice, and body movements. I would like to explore this more in the future because it was challenging to discern whether the students felt empathy toward the characters or compartmentalized the exercises in more of a systematic and rote way.

In class six, Caden expressed that he felt kind in his survey, when he usually answered happy. This was the class where we talked about one of the characters in the book saving a cookie in his pocket so he could share it with his siblings when he got home. We had an exercise of making cookie props out of clay and then dividing the

cookies four ways to give them out to the other characters in the story. To me, this indicated Caden felt kind because in this role play, he shared his cookies. There was one other class where Caden reported feeling kind. That was the very last class when the characters had their happy ending in the story. Caden delighted in happy endings and wanted everybody to be cheerful so I can see how this happy ending made him feel kindness toward the characters (see Figure 2).

Figure 2

Empathy Toward Characters



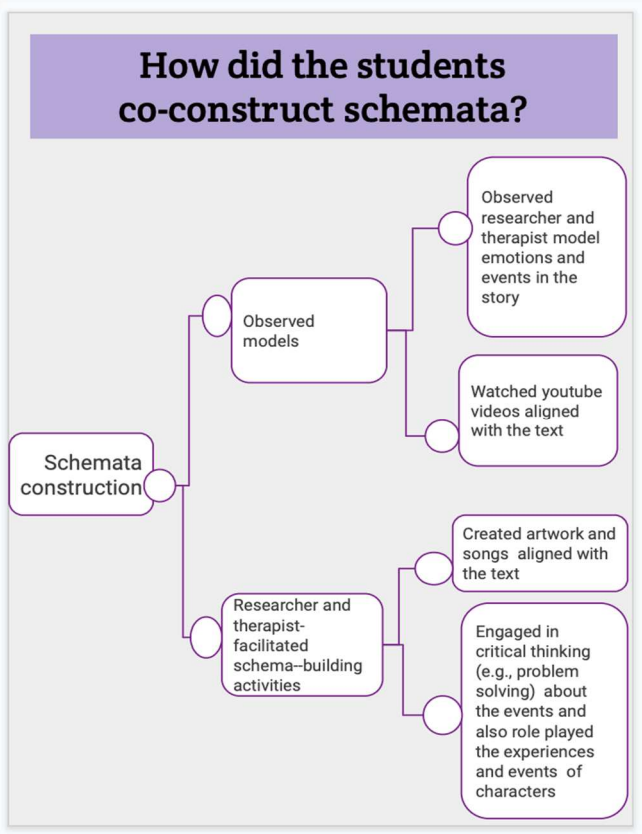
Joint Schema Construction. Students with ASD sometimes lack the background knowledge needed for a story to make sense, which is why building schemata and concepts can help with comprehension. It is well known that activating background

knowledge helps both neurotypical and neurodiverse groups achieve higher reading comprehension (Cho & Ma, 2020). During this class series, I tried to build and activate as much background knowledge as possible, mainly through symbolism such as art and drama such as role plays, to help the participants connect their experiences to the story. The construction of schemata took the forms of co-writing song lyrics; designing artwork and props using paint, clay, boxes, kinetic dirt, and trinkets sent home; the embodiment of the roles; the scripts acted out; watching videos demonstrating a particular event (e.g., blueberry picking); and building relationships with the characters, including role playing the emotions and scenes (see Figure 3).

The students enjoyed all the social story-making and it seemed to make a difference in their comprehension. A rival opinion might indicate that slowing down the pacing of the story or the repeated readings are what made the difference. In the future, another study could be designed to quantitatively explore these notions to measure the correlations, causations, and differences for further information.

Figure 3

Constructing Schemata



Self-Expression. It appeared the students expressed themselves and were empowered throughout this series. Two students answered, "I felt proud of myself" and "I did a great job" on their surveys 100% of the time; one student reported he felt like that in 90% of the classes; and one student answered proud of himself in 90% of the classes and felt he did a great job in 100% of the classes. Furthermore, Caden expressed himself when he was emphatic about his distaste for Amazon, the fact that he did not want to read so many lines, and his stellar theatrical performance. Denver expressed himself in a multitude of ways, including smashing the box office with his chill-inducing version of the "Under the Boxcar" song. Alex's rap performances were pure joy as was his love of horses that he injected into the story sporadically. Barry was a fantastic performer, and he

beamed with pride as he sang and read his lines. This series was spectacular for me as the researcher. The humanity, goodness, joy, and pure hilarity at times filled me with admiration and respect, and I hope that transferred throughout this paper.

Story Club and Student Reading Comprehension and Enjoyment

The research question of "How can drama, scripts, art, and sensory stimulation support the reading comprehension and reading enjoyment of fiction text for four male teenagers with ASD in Northern California?" can be broken down into two different questions, and I will do that in the next sections.

Reading Comprehension

To calculate comprehension scores, I averaged the students' quiz scores. Alex scored an 80%, Barry scored an 89%, Caden scored a 90%, and Denver scored a 92%. According to these scores, the students were able to comprehend the text and make meaning from the scripts. My predicted pattern matched the empirical patterns in this regard; however, it is unclear which element supported comprehension the most— the drama, scripts, sensory experiences, ToM instruction, or all of them combined. Future research could explore the differences between those elements. In my observations of the classes, the drama and the exaggerated punctuation helped the students understand the story events and interpersonal dynamics of characters. The drama concretized the emotions of the characters so the students could experience and play with the emotions in a similar way. The role plays of character emotions helped the learners connect with the events that transpired. The scripts kept them on task and accountable to their role and each other.

The exaggerated punctuation complemented the drama activities extremely well because it allowed the students to voice more confidently the dialogue of the characters with a matched emotion (e.g., exclamation points meant to exclaim the sentence and act surprised or scared). The exaggerated punctuation was an unexpected phenomenon to emerge from the project. This punctuation phenomenon enhanced the drama exercises because it allowed the students to match the punctuation to the intonation, and then match the intonation to the emotion.

Bridges like these, that connected concrete punctuation to abstract emotion, were the tools I set out to uncover because of Vygotsky's (1978) theory on concrete semiotic tools acting as pathways for the capacity of abstract understanding. Although I did not foresee this intervention being realized, I was excited to witness it emerge. Because of my excitement about punctuation power, I would encourage more research to be done around punctuation acting as guides and connectors to emotion in text because there is a possibility that I am making connections that are not there due to my closeness to the project.

The artwork and sensory experiences involved in the series acted as both concrete tools and abstract symbols of the plot. In class five, the learners engaged with wooden sticks that I found on a hike, which I then glued plastic cherries on. If the class had been in person rather than on Zoom, I would have had real cherries there for students to eat and a cherry tree craft for them to build. However, because I was mailing out the materials, I had to use plastic cherries. The exercise was to pluck the cherries off the branch just like the characters did in the corresponding chapter. This was a way for the students to have the sensory experience of looking, feeling, and experiencing the "pull"

of the cherry off the tree. Furthermore, it allowed the students to have a concrete symbol to solidify the cherry-picking chapter of the book as a support to their own ability to visualize the event in their minds. Students also worked on constructing their own boxcars out of cardboard boxes and images I mailed to them to decorate. They used paint sticks and their imaginations to figure out how they would decorate a boxcar if they were going to live in one, just like the characters did. It seems these multisensory actions were an effective strategy to facilitate comprehension, as all the students scored an 80% or more average on the quizzes.

However, it is important to note that one student did not struggle with comprehension as much as the other students, and his parent reported on the survey that even though the child enjoyed the classes, the child would have comprehended the events even without the mediated semiotic tools such as art, drama, scripts, and sensory involvement. My interpretation of this is that although the drama, art, scripts, and sensory experiences were beneficial to some, they were merely enjoyable to others.

Reading Enjoyment

When the students filled out the survey after class, they chose from "I liked the class" or "I did not like the class." All the students reported a positive response to the class on every survey. Therefore, my interpretation of those responses is that the drama, scripts, artwork, and multisensory activities were enjoyed by all the students, whether those elements contributed to increased comprehension of the fiction text. Furthermore, I would venture to say that because most of the students did benefit from the drama, scripts, art, and sensory experiences and enjoyed those aspects of Story Club, they might be advantageous components to the classroom setting.

Caden, Alex, Barry, and Denver were able to feel successful, which may have contributed to their enjoyment, as indicated on their self-perception surveys, during Story Club (see Table 3). Students reported more positive self-perceptions than negative ones, more often. The most frequently reported categories were "I tried my best," "I did great," and "I felt proud," followed by "I could have done better." "I felt confused" and "I felt embarrassed" were reported the least (see Table 3 and Figure 4).

It might be an unrealistic expectation for teachers to add these elements to their already-filled schedules due to lack of finances or a lack of time to generate creative solutions to comprehension challenges for a small portion of their classroom population. Therefore, further research could be done for these topics, along with curriculum development that is informed by the research.

Table 3

Participants' Self-Perceptions During Each Class, Per Each Student

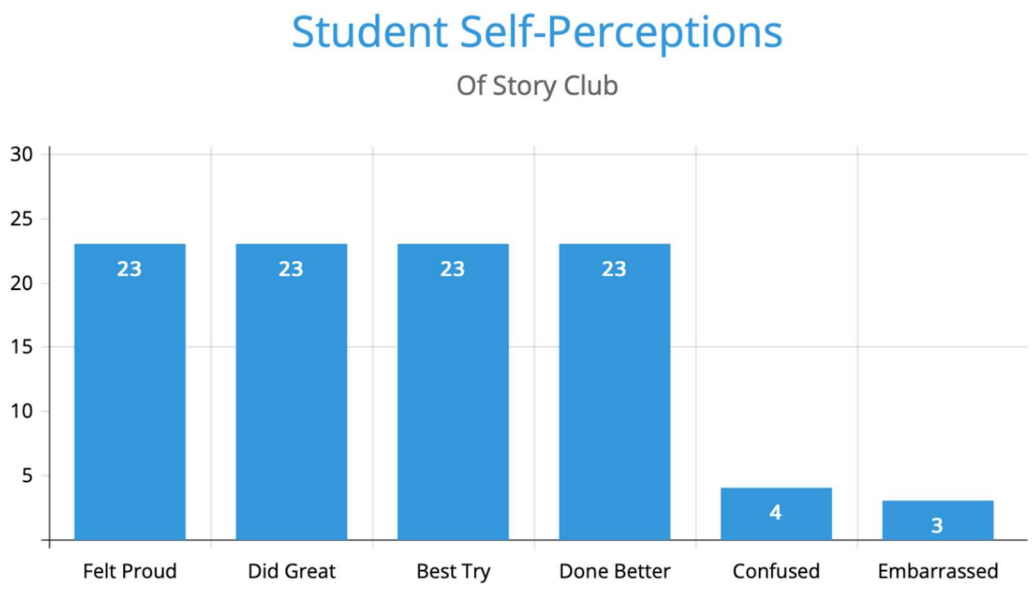
	Tried best	Did great	Felt proud	Could have done better	Felt confused	Felt embarrassed
Class 1	*	*	*	*	*	
Class 2	**	**	**	*		
Class 3	***	*	****	*	*	
Class 4	**	**	**	*		
Class 5	***	**	**	**	*	*
Class 6	**	**	**	**		
Class 7	***	***	***	**	*	*

	Tried best	Did great	Felt proud	Could have done better	Felt confused	Felt embarrassed
Class 8	**	**	**	**		
Class 9	*	*	*	*		*
Class 10	**	**	**	**		
Class 11	**	**	**	**		
Class 12	n/a	n/a	n/a	n/a	n/a	n/a

Note. The purple symbol * represents Alex, the orange symbol * represents Barry, the green symbol * represents Caden, and the red symbol * represents Denver. Student surveys were not submitted for class 12.

Figure 4

Number of Reported Self-Perceptions



Parent Perceptions of the Reading Comprehension of Their Teenagers With ASD After Story Club Participation

In the first post-performance survey, three parents were surprised at how well their child comprehended the fiction text and in the second post-performance survey two parents had changed perceptions. In the second post-performance survey, one parent did not have a changed perception. All the parents reported on both surveys that their teenagers seemed to enjoy Story Club and seemed to believe they were successful at Story Club (see Table 4). Table 4 demonstrates the yes/no responses from the parents in the first and second surveys. The statements on the left side of the table represent the questions asked and the numbers indicate how many parents responded "yes" and how many responded "no". For example, the first survey prompt "I was surprised at how my child comprehended the story" had three "yes" responses and one "no" response.

Table 4

Parent Surveys Post-Performance

Survey prompts	First Survey		Second Survey	
	Yes	No	Yes	No
Surprised at how child comprehended	3	1	2	1
Comprehended the story as much as expected	4	0	2	1
Story Club effective for comprehension	4	0	3	0
Child enjoyed Story Club	4	0	3	0

Child felt they did a good job	4	0	3	0
Perception changed	n/a	n/a	2	1

When asked what the most effective aspect of Story Club, one parent reported that the students "have to stay focused and follow when it's their turn" because it is in a script format. Another parent reported "the variety of techniques to bring the story off the page and into real life" was the most effective aspect of Story Club. The parent comments on the surveys indicated to me that the influence of Vygotsky's theories made it through the computer and landed into the parents' own minds. One parent mentioned the shared community comprehension experience, which was indicative of Vygotsky's (1978) "social action." Vygotsky wrote about the importance of the cultural influences on the individual's internal world and noted individuals must interact socially to first glean meaning before they internalize it. It was meaningful that one parent mentioned that the learners were comprehending the story together, as opposed to individually.

Another parent stated the tools and props that were mailed home each week that aided in their student's arousal levels and attention before and during Story Club, eliminating the need to escape. This signaled that Story Club operated from a place that was within this student's ZPD, which eliminated his typical need to avoid reading. Furthermore, the tools supported his relationship to the characters and events in the story and acted as a connector from the story to his life.

One parent made the suggestion that instead of the verbal prompt to use a gestural or visual prompt, which in this setting might be less intrusive when her son forgot his turn. The request of a hand signal was a fantastic idea that I wish I had the opportunity to

implement. When this student would sometimes miss his line, I would typically say his name to prompt him. Conversely, if the student was not looking at the screen, it could be an even more intrusive prompt because it would require the visual, along with the pause, and then the verbal. This idea is worth experimenting with and further research could be done on prompting levels within a virtual setting. Typical prompting hierarchies may not accurately translate to the Zoom setting, so if verbal prompting in person is less restrictive than a visual or gestural prompt, that may not necessarily be the case on the computer. Another avenue to consider would be using the chat function. Perhaps before I called the student's name I could send them a chat to remind them about their line. If the chat function was ineffective, calling the name could be used as a follow up.

In addition to the surveys, I also interviewed two parents. The other two parents declined the interview, which I surmise was due to the repetitiveness of the questions between the survey and the interviews. One parent (Parent A) reported that although her perception of her son's reading comprehension did not change after Story Club, she had more strategies and tools to use to help him visualize and engage with the story. Parent B stressed how beneficial it was to have the book come to life so her child could engage with the text multimodally (see Table 5).

Table 5

Parent Survey Remarks

	Most effective part of Story Club	Would like to see changed about Story Club
Survey 1	They have to stay focused and follow when it is their turn.	Nothing
	The use of a variety of techniques to bring the story off the page and into real life!	I wish I'd been able to see the sessions so, given that, I'm not sure what I can say. Oh—perhaps encouraging/cajoling/requiring parents to buy the text, or sharing it with us. Then we could follow along with what they're doing outside of the session.
	I thought the interaction of the students across their parts was really good—like they were comprehending the story together, not just one by one.	Maybe a hand signal or other way to help him follow along his lines. I feel if he would have stayed the full hour versus 30 minutes he would've sussed out when to read his part. He enjoyed the rapping way more than the normal reading parts.
	Being with their peers, the props that were sent each week, and breaking the story down into script was extremely beneficial to my child so he didn't check out too much and want to escape Story Club.	
Survey 2	The role play.	Not being on Zoom.
	The varied approach to reading using drama, music, art, etc. to bring the story to life. This is a very effective approach to reading comprehension that was clearly enjoyed by all participants!	Nothing.
	Animating and performing things with peers—interacting meaningfully.	I wish I'd been able to observe more—not a change for club, just a comment about my time.

CHAPTER 5: DISCUSSION

Reflecting upon the data as a whole and reading between the lines brought to my attention the fact that the students highly enjoyed playing, learning, and interacting with each other. This realization is noteworthy in and of itself because ASD is said to affect students' capacities to socialize and play. Because ASD diagnoses are often deficit-laden, I want to contribute to the strength-focused discussion and shed light on the capabilities of autistic people. Once again, ASD is characterized in the latest version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–5*) as follows:

> Autism spectrum disorder is characterized by persistent deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interaction, and skills in developing, maintaining, and understanding relationships. In addition to the social communication deficits, the diagnosis of autism spectrum disorder requires the presence of restricted, repetitive patterns of behavior, interests, or activities. (American Psychiatric Association, 2013, p. 31)

This definition highlights deficits in social communication and social interactions. In the future, I would like to explore and challenge the characteristics outlined within the *DSM–5*. Though students with ASD may express sociability and interconnectedness outside of sociocultural norms, their desire to connect and their joy from those interactions are apparent. Further research is needed to understand how students with ASD are already socializing with each other and how educators can facilitate even greater connections because, according to the *DSM–5* description, these students do not understand social relationships or social reciprocity. However, in my experience, autistic students do not

always match the profile in the *DSM–5*. Autistic people frequently do exhibit social reciprocity and have the capacity for relationships. For example, during my observations of Story Club, I noticed the students making facial expressions, engaging in echolalic utterances, and using hand gestures to communicate with LM, myself, and each other. Further research could be done to determine whether these are preferred modes of communication for students with ASD. In this sense, the "more knowledgeable other" would be the students with ASD.

Furthermore, during Story Club, the participants displayed complex emotional intelligence such as exhibiting empathy as they rooted each other on and were in complete acceptance of each other's differences. They seemed to appreciate each other on many levels. The students provided long periods of space where they patiently waited for other students to respond and took delight in each other's expressions. They were true exemplars of inclusion, which was both heartwarming to witness and an eye-opening discovery. Possible rival explanations could be that certain students may have been frustrated or annoyed with their peers but did not express it in a way that I picked up on, and that these four students were not representative of the whole population.

Implications

There are numerous implications for the results, including a sociocultural shift in how society views autism. Society's labels and diagnoses put people in a box and make it easier for humans to classify, understand, and organize the population. However, society may need to shift to a more flexible and inclusive view of differences. Rather than defining areas in which a person or group is deficit just because they have a different way of expressing the same desires (e.g., to connect with others, to be comfortable, etc.),

society can shift to a mindset of curiosity and look in wonder at how this growing group achieves community and purpose. This paradigm shift is in swing already, partly because of the work of autism advocates and autistic people themselves.

However, it is important to note that some people with ASD do need significant support in achieving basic life skills and require considerable assistance with communication and connection to others. I understand and validate the level of dependence that certain members of this population will always display. No matter where a person lies on the spectrum, growth and evolution need to happen from that person's ZPD.

A new way of looking at the different levels of support could be a shift away from grouping the community into a whole. An upheaval in the *DSM–5* definition of ASD might be beneficial in serving this population. For instance, having more individual profiles of various ASD phenomena, including both strengths and areas of growth, rather than merely deficits, could provide a more accurate portrayal of autistic people. A more balanced view of this heterogenous community could ultimately influence perceptions of autism (including self-perceptions of autistic people), the language of research articles, and treatment, practice, and instruction. According to Vygotsky (1993), "The new point of view prescribes taking into account not only the child's negative characteristics, not only his minuses, but also a positive contour of his personality. This view presents a picture of complex developmental paths" (p. 169).

Learning Profiles

Kover et al. (2013) encouraged meaningful subgroups in the ASD phenotype to be developed in their study on expressive versus receptive vocabulary, and I hope we are

heading in that direction. There are enormous variances within this population and the most salient point I would like to stress is the need for more educational profiles for students with ASD that look at different patterns of learning and behaviors of certain subgroups, as well as recommended materials, accommodations, supports, and curricula to go along with each profile. I encourage research to be done investigating the impacts of diagnostic criteria on practice, instruction, and curriculum, and how those areas would change (or not) if there was a fairer view of the "disorder."

Sensory Alignment

Furthermore, it has become apparent to me that a portion of autistic people may operate from a more sensory-like dimension of reality. Some students I have come across seem to be living in a much deeper sensorial plane of existence. I would be curious to learn more about the sensorial levels that I cannot access, and whether literature and technology can be aligned with those planes.

Curriculum Development

Further implications include robust curricula development for students with ASD, including the key features that were found to be beneficial during Story Club. Because the extreme modifications of the novel to a script format with simplified text and ample visuals may be unrealistic for teachers to tackle, having this already done for a variety of popular novels could provide equity when students on the spectrum are present in general education classrooms. Additionally, ASD book alterations could provide special education teachers with more resources for effective instruction for students with a variety of developmental disabilities. Furthermore, curriculum developers who are

experts in autism could partner up with popular companies to advise or to adapt already published work.

I encourage more research to be done on punctuation marks and how their use could potentially affect comprehension for students with ASD and be used as a system to promote independence. More specifically, I wonder whether creating a system for punctation marks and teaching that system to students with ASD might act as a concrete visual to clue them in on the abstract character emotions that are not explicitly stated in a story (e.g., red exclamation point means mad, green exclamation point means excited, purple exclamation point means shocked, etc.). There could potentially be punctuation keys on each page for the students to refer to so they can crack the emotion code on the page. This is a system that might lead to more autonomy when reading a story and possibly increase enjoyment.

Music: An Invaluable Tool

All the students connected deeply with the music portion of Story Club, provided by LM. The addition of music into literature classes could be a universally enjoyable enhancement. If an educator does not have musical tenacity, having students pick a song from YouTube to share that relates to the plot is simple to incorporate. During Story Club, there were several classes where we ended with the students choosing a song to share. This was a highly preferred activity because it allowed the students to express themselves without the need to talk. They could pick the song, dance, and share a piece of themselves with their peers. From my perspective, it looked as though the students were delighted with sharing a space that was full of musical movement and free of verbal input.

Art for Meaning

Similarly, adding basic art and prop-building to literature lessons could be a great improvement to classrooms, especially for students who struggle with symbolic thinking. If a teacher does not have artistic ability or confidence, perhaps they could reach out the art teacher, who could possibly support the class or create a literature-based art project during art time. Collaboration across disciplines is a great way to reinforce the plot, and possibly even generalize concepts.

Collaboration Across Disciplines

People on the autism spectrum might struggle with the generalization of ideas and skills. For example, if they learn one skill in a particular class, sometimes that is the only environment in which they can replicate that task. Therefore, incorporating different educators and therapists into the story to reinforce plot elements throughout the day can be particularly helpful for this population. For example, the drama therapist or school counselor would be an incredible support to reinforce characters' emotions, behaviors, or skills. Similarly, the occupational therapist can perhaps work on movements that are within the book and the speech therapist can help reinforce the social dialogue and dynamics among characters. Students with ASD usually benefit from repetition. Once the initial goal or concept is achieved through repetition, evolution of a lesson or skill built from the newly acquired knowledge raises the chances of a successful progression of learning. More research could be done to determine whether this system can be practiced across multiple settings and people to support generalization.

I plan to experiment with this idea of generalization at the school where I work using a novel as an anchor to the school curriculum and building the other disciples

around it. In this way, the students would have multiple exposures throughout the day of vocabulary, schemata, content, social-emotional dynamics, and the physical theme itself. Multiple educators and therapists would work together using the same book to extend lessons and activities in their departments. This will increase cohesion, exposure, and hopefully generalization. Furthermore, students of all ages would have access to the same content, thereby increasing the chances of purpose, community, and meaningful connection.

Parent Involvement

Parent involvement is another avenue worthy of exploration. One parent indicated on the survey that they wished they had been able to witness more classes to see what transpired. I did not send any videos to parents due to confidentiality; however, if I did a class like this in the future, I might seek parent permission to film and disperse classes to those in the class so the parents can observe and build on the classes at home.

Limitations

It was crucial that I practiced reflexivity as I engaged in this qualitative study because I had my own biases that were sure to influence my perspective. Therefore, it was critical that I operated in a culturally responsive way, including spending enough time observing the students to challenge my own thinking. During the observations, I was constantly challenged to pull myself out of the experience to view the videos with fresh eyes. Moreover, I needed to look for negative evidence to combat my subconscious perspectives and challenge and reevaluate my preferred views. For example, were the students scoring well on the comprehension questions because they were fully

understanding the events in the book because of Story Club or were they scoring well on the questions because I made the questions too easy?

A further limitation was the small sample size of the study, which makes the results challenging to generalize. I would encourage further research on this topic with the addition of quantitative measures to support the qualitative findings in a mixed methods design.

Last, the amount of preparation needed to convert the text into this format may make this type of intervention unrealistic in terms of globality. The prolonged nature of reconstructing the text, the cost of materials, and the need for artistic ability make this intervention an unrealistic way to teach students on a regular basis if it is solely left to the educators to create.

Summary Statement

Literacy is unique to each person, and it is something that differentiates humans from the rest of the animal kingdom. It is the need to leave a legacy, to not be forgotten. Writing and reading can be a medium to meditation, a way to slow the brain down. It can be an avenue for an agoraphobic person to travel, or a pathway for an unlovable person to fall in love. Literacy can be a way to forget and also a way to remember. It is a way for cavemen to make vision boards, a way for the disciples to write the bible, and for scholars and preachers to write and read speeches.

There is such relief when one is experiencing an elusive sensation or feeling once the name of it is declared. If there is a word for it, one cannot be alone in experiencing it. Words are a social, connecting, and comforting agreements of symbols. Literacy includes letters, words, spacing, lines, blank paper, imagination, images, sounds, media, and most

importantly, connection to other beings whether real, imagined, alive or deceased. Literacy is even thoughts and prayers. According to Vygotsky (2012), thoughts are initially nonverbal, perhaps images, and only through socialization does language develop to communicate. Once that happens externally, people can then internalize the words, which organizes thoughts into language. Words can become prayers, words can become begging, words can become signs held up by homeless people asking for food, words can then become empathy and generosity by passersby who read them.

Literacy can be a way for students with ASD to make sense of the world. Vygotsky (1993) urged that special education and pedagogy must work with students to "correct the break in social interaction by using some other path." My dissertation is about exploring other paths, including scripts, mediated semiotic tools, artwork, drama, and the senses to see how that influences comprehension and enjoyment. I cannot imagine a life without literacy, and I hope that my dissertation contributes to new pathways for students with ASD to access the infinite possibilities of words, expression, and connection.

APPENDIX A

Student Verbal Assent Scripts

Verbal Assent Script to Take Part in Research

Title of Research Study: Exploring Both Parent Perceptions of and Autistic Students' Experiences with Reading Comprehension and Enjoyment Through Story Club

Principal Investigator: Kathleen Melville, Department of Education Specialties, Graduate Programs in Literacy Education, St. John's University

SCRIPT

Hi, my name is Kathleen Melville. If you have any questions about what I am telling you, you can ask me at any time.

I want to tell you about a research study we are doing. In this study, we want to find out more about reading comprehension and enjoyment in teenagers with different and amazing brains.

You are being asked to be in this because you are a teenager on the autism spectrum (I will make sure students already know they have autism before I state this) with an amazing brain.

If it is okay with you, I will ask you to: (1) participate in Zoom Language Arts classes with me, two times a week, for one hour and fifteen minutes, for three months [I will show him a calendar and a clock]; (2) Make art during class; (3) Read a script with me and other students and then pretend to be a character in a play; (4) Read your character lines; (5) Act out your character lines with help from me and another adult; (6) Read and then answer five questions about the story after acting to help me understand what you know; (7) Read and then answer questions about whether you enjoyed class or not; (8) Read and then answer questions about how you think you did during class.

Some of the things that we will ask you to do might make you uncomfortable or be hard to do. Some of the questions might be hard to answer. If you get too tired or if this seems too silly just let me know. If you want to stop at any time, just tell me and we will stop.

You don't have to be in this research study. It is up to you. You can say yes now and still change your mind later. All you have to do is tell me. No one will be mad at you if you change your mind.

Your parents say it is okay for you to be in this study. If you have questions for me or for your parents you can ask them now or later.

Do you have any questions? Are you willing to (1) participate in Zoom Language Arts classes with me, two times a week, for one hour and fifteen minutes, for three months [I will show him a calendar and a clock]; (2) Make art during class; (3) Read a script with me and other students and then pretend to be a character in a play; (4) Read your character lines; (5) Act out your character lines with help from me and another adult; (6) Read and then answer five questions about the story after acting to help me understand what you know; (7) Read and then answer questions about whether you enjoyed class or not; (8) Read and then answer questions about how you think you did during class?

Child's/Participant's response**:** ☐Yes ☐No

Check which applies below:

☐ The child is capable of understanding the study

☐ The child is not capable of understanding the study

☐ The child's parent or guardian has already signed a consent document.

_____

Printed Name of Child Participant

Researcher's Signature

I have fully explained the research study described by this form. I have answered the participant and/or parent/guardians' questions and will answer any future questions to the best of my ability. I will tell the family and/or the person taking part in this research of any changes in the procedures or in the possible harms/possible benefits of the study that may affect their health or their willingness to stay in the study.

_____

Kathleen Melville (Print)

_____

Kathleen Melville (Sign) Date Time

APPENDIX B

Parent of the Participant Permission Form

Dear Parent of Participant:

Your son has been selected to participate in a study to learn more about reading comprehension and enjoyment in students with autism spectrum disorder. This study will be conducted by Kathleen Melville, Department of Education Specialties, Graduate Programs in Literacy Education, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Sampson, Department of Education Specialties, Graduate Programs in Literacy Education.

If you agree to allow your child to participate in this study, your child will be given 2.5 hours per week of virtual reading comprehension lessons during "Story Club", using a modified novel and multisensory projects. The study is anticipated to be a minimum of twenty sessions with a minimum of one hour per session. All sessions will be recorded on Zoom or another virtual platform such as WebEx. The videos will be kept in a locked computer and destroyed after the study is complete. There are no known risks associated with your child participating in this research beyond those of everyday life.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the effects of "Story Club" and may help to make to increase option for teaching literacy to students with autism.

Confidentiality of your child's records will be strictly maintained by removing your name and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the interview documentation and will be stored in a locked file. Your responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others. Your responses will be kept confidential by the researcher.

Participation in this study is voluntary. You may refuse to participate or withdraw your child at any time without penalty. Nonparticipation or withdrawal will not affect your child's grades or academic standing.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Kathleen Melville, Kathleen.melville99@stjohns.edu, or the faculty sponsor, Dr. Sampson, at sampsonm@stjohns.edu, St. John's University, 101 Astor Place, Room 246, New York, New York 10003.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

Yes, I agree to have my **son/daughter** participate in the study described above.

_____ _____

Parent's Signature Date

Yes, I agree to allow the researcher permission to **video** sessions with my child.

_____ _____

Parent's Signature Date

APPENDIX C

Drama Therapist Consent Form

Dear Participant:

You have been invited to participate in a study to learn more about reading comprehension and enjoyment in students with autism spectrum disorder. This study will be conducted by Kathleen Melville, Department of Education Specialties, Graduate Programs in Literacy Education, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Sampson, Department of Education Specialties, Graduate Programs in Literacy Education.

If you agree to participate in this study, you will be asked to provide social emotional experiential learning and drama coaching for 2.5 hours per week of virtual reading comprehension lessons during "Story Club", using a modified novel and multisensory projects, alongside the researcher. The study is anticipated to be a minimum of twenty sessions with a minimum of one hour per session. All sessions will be recorded on Zoom or another virtual platform such as WebEx. The videos will be kept in a locked computer and destroyed after the study is complete. There are no known risks associated with your participation in this research beyond those of everyday life.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the effects of the iPad on literacy instruction for children with autism and it may benefit teaching procedures used with your students.

Confidentiality of your research records and your child's records will be strictly maintained by removing your name and any identifiers will be replaced with a number. Consent forms will be stored in a separate location from the interview documentation and will be stored in a locked file. Your responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others. Your responses will be kept confidential by the researcher, but the researcher cannot guarantee that others in the group will do the same.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For interviews, questionnaires or surveys, you have the right

to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your grades or academic standing.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Colleen Keating, keatingc@stjohns.edu, St. John's University 8000 Utopia Parkway, Queens NY, 11439 or the faculty sponsor, Dr. Salika Lawrence, at lawrens1@stjohns.edu, St. John's University, Sullivan Hall 4th Floor, 8000 Utopia Parkway, Queens NY, 11439.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

Yes, I agree to participate in the study described above.

Subject's Signature	Date

APPENDIX D

Parent Participant Consent Form

Dear Participant:

You have been invited to take part in a research study to learn more about reading comprehension and enjoyment in students with autism spectrum disorder. This study will be conducted by Kathleen Melville, Department of Education Specialties, Graduate Programs in Literacy Education, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Sampson, Department of Education Specialties, Graduate Programs in Literacy Education.

If you agree to be in this study, you will be asked to do the following: Take part in two 20-minute (or less) interviews to help the researcher understand your child's reading comprehension patterns, attend three Story Club performances that will be a maximum of 30 minutes each, fill out surveys after each Story Club performance (three in total, that will take approximately five minutes to complete), and set up your child for the Story Club lessons that will be a minimum of two hours per week, for 12-weeks. Your interview answers to the interview questions will be recorded on WebEx and transcribed in writing. Participation in this interview will involve a minimum of twenty minutes of your time to complete.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the effects of Story Club and may help to make to increase option for teaching literacy to students with autism.

Confidentiality of your research records and your child's records will be strictly maintained by removing your name and any identifiers will be replaced with a number. Consent forms will be stored in a separate location from the interview documentation and will be stored in a locked file. Your responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others. Your responses will be kept confidential by the researcher, but the researcher cannot guarantee that others in the group will do the same.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For interviews, questionnaires or surveys, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your child's grades or academic standing.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Kathleen Melville, Kathleen.melville99@stjohns.edu, or the faculty sponsor, Dr. Sampson, at sampsonm@stjohns.edu, St. John's University, 101 Astor Place, Room 246, New York, New York 10003.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

Yes, I agree to participate in the study described above.

Subject's Signature	Date

APPENDIX E

Verbal Assent Script to Take Part in Research

Title of Research Study: Exploring Both Parent Perceptions of and Autistic Students' Experiences with Reading Comprehension and Enjoyment Through Story Club

Principal Investigator: Kathleen Melville, Department of Education Specialties, Graduate Programs in Literacy Education, St. John's University

SCRIPT

Hi, my name is Kathleen Melville. If you have any questions about what I am telling you, you can ask me at any time.

I want to tell you about a research study we are doing. In this study, we want to find out more about reading comprehension and enjoyment in teenagers with different and amazing brains.

You are being asked to be in this because you are a teenager on the autism spectrum (I will make sure students already know they have autism before I state this) with an amazing brain.

If it is okay with you, I will ask you to: (1) participate in Zoom Language Arts classes with me, two times a week, for one hour and fifteen minutes, for three months [I will show him a calendar and a clock]; (2) Make art during class; (3) Read a script with me and other students and then pretend to be a character in a play; (4) Read your character lines; (5) Act out your character lines with help from me and another adult; (6) Read and then answer five questions about the story after acting to help me understand what you know; (7) Read and then answer questions about whether you enjoyed class or not; (8) Read and then answer questions about how you think you did during class.

Some of the things that we will ask you to do might make you uncomfortable or be hard to do. Some of the questions might be hard to answer. If you get too tired or if this seems too silly just let me know. If you want to stop at any time, just tell me and we will stop.

You don't have to be in this research study. It is up to you. You can say yes now and still change your mind later. All you have to do is tell me. No one will be mad at you if you change your mind.

Your parents say it is okay for you to be in this study. If you have questions for me or for your parents you can ask them now or later.

Do you have any questions? Are you willing to (1) participate in Zoom Language Arts classes with me, two times a week, for one hour and fifteen minutes, for three months [I will show him a calendar and a clock]; (2) Make art during class; (3) Read a script with me and other students and then pretend to be a character in a play; (4) Read your character lines; (5) Act out your character lines with help from me and another adult; (6) Read and then answer five questions about the story after acting to help me understand what you know; (7) Read and then answer questions about whether you enjoyed class or not; (8) Read and then answer questions about how you think you did during class?

Child's/Participant's response**:** ☐Yes ☐No

Check which applies below:

☐ The child is capable of understanding the study

☐ The child is not capable of understanding the study

☐ The child's parent or guardian has already signed a consent document.

_____

Printed Name of Child Participant

Researcher's Signature

I have fully explained the research study described by this form. I have answered the participant and/or parent/guardians' questions and will answer any future questions to the best of my ability. I will tell the family and/or the person taking part in this research of any changes in the procedures or in the possible harms/possible benefits of the study that may affect their health or their willingness to stay in the study.

_____

Kathleen Melville (Print)

_____

Kathleen Melville (Sign) Date Time

APPENDIX F

Parent Pre-Story Club Interview Form

Time of interview:

Date:

Place:

Interviewer:

Interviewee:

Questions:

1. Tell me about your child's experience with fiction stories.
2. What is your child's biggest impediment to reading comprehension when it comes to fiction?
3. What is your child's greatest strength in this area?
4. What has helped your child succeed in reading comprehension so far?

Thank you for participating in this interview.

APPENDIX G

Parent Post-Story Club Interview Form

Time of interview:

Date:

Place:

Interviewer:

Interviewee:

Questions:

1. What has helped your child succeed in reading comprehension so far?
2. What are your reactions to the Story Club classes and performances?
3. Did your child comprehend more, less or the same amount he usually does in Story Club, as compared to previous LA classes that he had throughout his life?
4. How do you think your child felt about Story Club, as compared to previous LA classes that he had throughout his life?
5. Has your perception changed at all about your child's reading comprehension after Story Club?
6. What pronoun (he, she, they, z) should I use for your child when writing up the dissertation results?

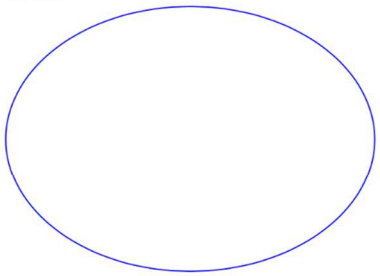
Thank you for participating in this interview.

APPENDIX H

Student Enjoyment and Self-Perception Surveys

Student Enjoyment Survey

Circle one of the blue options and/or draw your face in the circle:



I liked the class today.

I did not like the class today.

Fill out the orange lines:

My favorite part of the class was _____

My least favorite part of the class was _____

Student Self-Perception Survey

Circle all of the green statements that are true for you. If you have other thoughts, you can write them on the orange line.

I tried my best during Story Club.

I felt proud of myself during Story Club.

I did a great job during Story Club.

I felt embarrassed during Story Club.

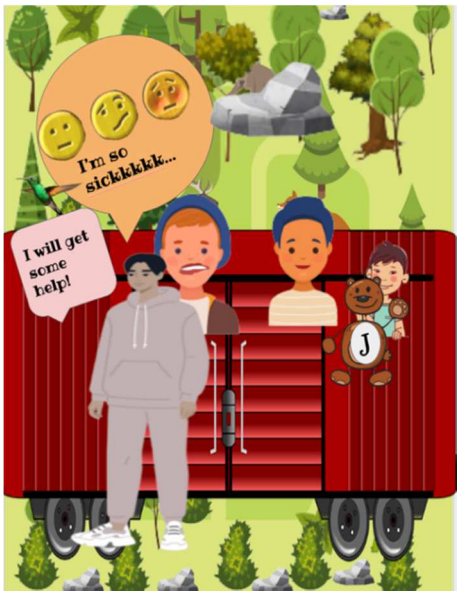
I could have done better today.

Write any thoughts about class that you have: _____

_____

APPENDIX I

Scripts for the Students



The Boxcar Song by LM

Henry: When our story starts us boys go the bakery

But the baker's wife plans to steal our brother Benny.

(Sing)

Inside the Box Car, that's where we will be

With my brothers and our watchdog, that's where we will sleep

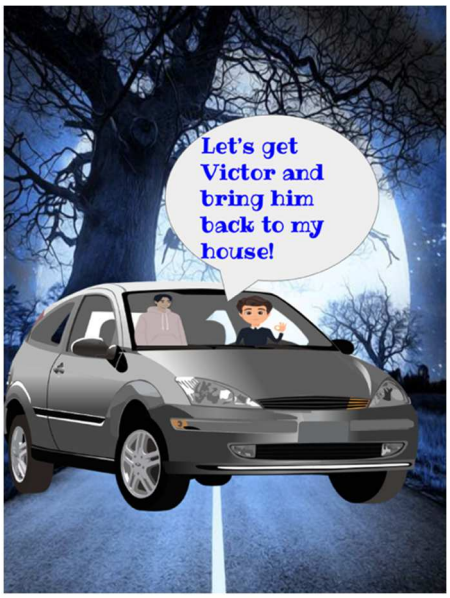
Inside the Box Car: Out of the rain

Inside the Box Car: Of a broken down train

Inside the Box Car: We eat blueberries and bread

Inside the Box Car: On a pine needle bed

Inside the Box Car, Box Car



Dr. Moore: Good morning. Benny, you can go play with Watch.

Benny: Okay, See you later!

Man: Dr. Moore, where are my grandchildren? ?!?!??!?!?!?!?!?!!!!!!!!!

APPENDIX J

Sample Comprehension Questions

DIRECTIONS: ANSWER THE QUESTIONS BY CIRCLING a OR b, ACCORDING TO WHAT HAPPENED IN THE STORY.

1. HENRY, JESSIE, VIOLET AND BENNY
   a. HAVE A HOME
   b. DO NOT HAVE A HOME
2. THE BAKER'S WIFE
   a. LIKED KIDS
   b. DID NOT LIKE KIDS
3. THE CHILDREN BOUGHT
   a. BREAD FOR DINNER
   b. SOUP FOR DINNER
4. THE BAKER AND THE BAKER'S WIFE PLANNED TO
   a. BRING THE LITTLE BOY TO A CHILDREN'S HOME
   b. KEEP THE LITTLE BOY AT THE BAKERY WITH THE REST OF THE KIDS
5. THE CHILDREN DECIDED TO
   a. STAY AT THE BAKERY
   b. ESCAPE AT NIGHT TO GET AWAY FROM THE BAKER AND THE BAKER'S WIFE

APPENDIX K

Parent Post-Performance Survey

Parent Survey Post Story Club Performance

Circle or type Yes or No next to the statement and type or email the final response.

I was surprised at how my child seemed to comprehend the story. (yes or no)

My child seemed to comprehend the text as much as I expected. (yes or no)

Story Club seems like an effective way to help my child understand fiction text. (yes or no)

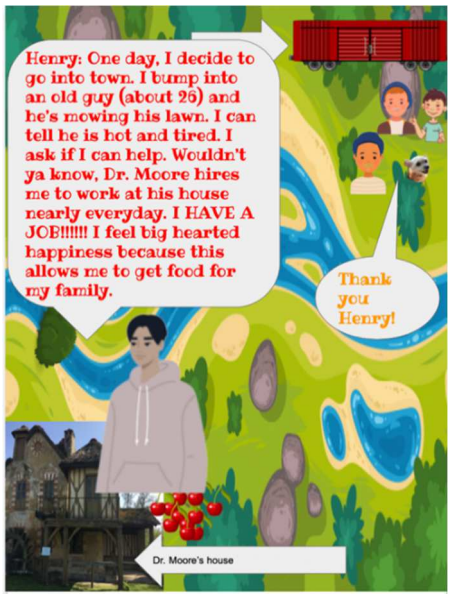
My child seemed to enjoy Story Club. (yes or no)

My child felt like s/he did a good job during most Story Club classes. (yes or no)

What is the most effective aspect of Story Club?

APPENDIX L

Final Scripts



Dr. Moore: Good morning. Benny, you can go play with Watch.

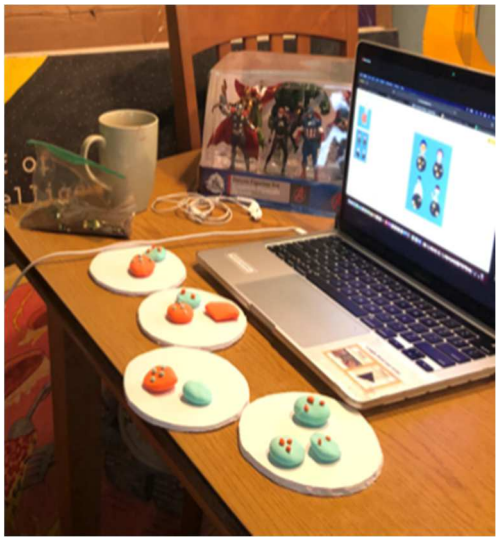
Benny: Okay, See you later!

Man: Dr. Moore, where are my grandchildren? ?!?!?!?!?!?!?!?!!!!!!!!!

APPENDIX M

Sample Art and Sensory Activity

Students watched as I divided cookies up on the screen and then they did the same activity at home.



APPENDIX N

Class Four Art and Prop Activity

APPENDIX O

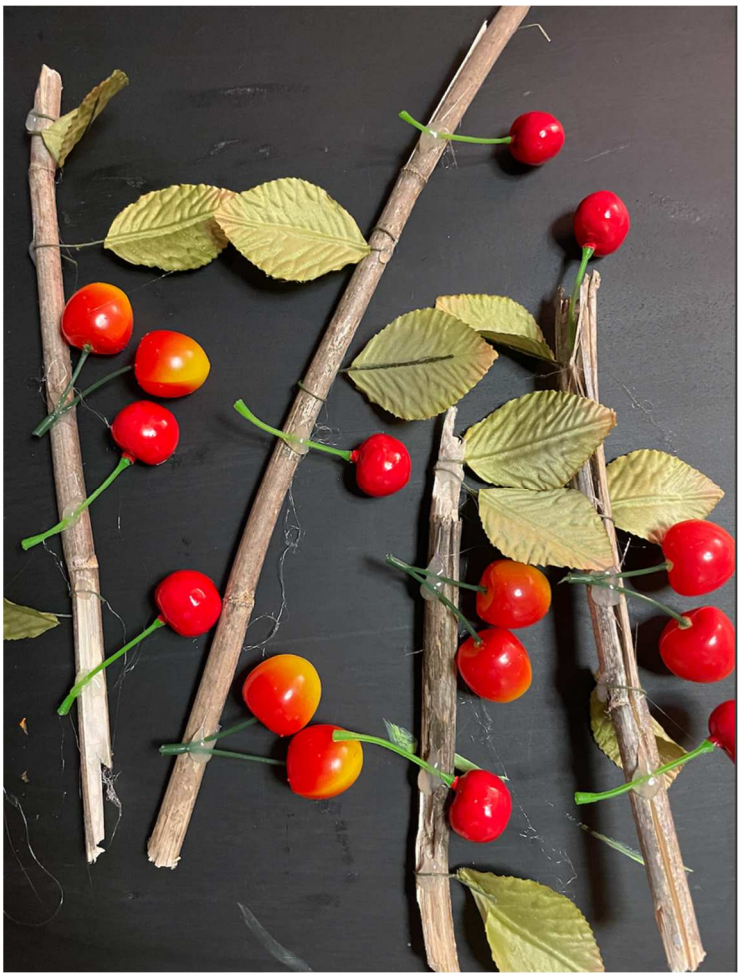
Class Five Sensory and Art Activity

APPENDIX P

Class Seven Sensory and Art Activity

APPENDIX Q

Class Nine Sensory and Prop Activity



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