IMPROVING READING COMPREHENSION AND SOCIAL SKILLS IN CHILDREN WITH HIGH FUNCTIONING AUTISM: AN ELEMENTARY SCHOOL INTERVENTION

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IMPROVING READING COMPREHENSION AND SOCIAL SKILLS IN CHILDREN WITH HIGH FUNCTIONING AUTISM: AN ELEMENTARY SCHOOL INTERVENTION

A Project

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Abstract

of

IMPROVING READING COMPREHENSION AND SOCIAL SKILLS IN CHILDREN WITH HIGH FUNCTIONING AUTISM: AN ELEMENTARY SCHOOL INTERVENTION

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Statement of Problem

Advocates for children with disabilities are adamant about public schools providing a free and appropriate education for all students with disabilities. In response to this demand, public schools have created inclusion classrooms that consist of typically developing students and students with disabilities who are higher functioning. Students diagnosed with high-functioning autism complete most of their schooling in an inclusion classroom, where the expectation is that they complete the same academic material as their peers. Teachers in the state of California are not prepared to teach students with high-functioning autism who have academic deficits that are different from their typically developing peers.

Sources of Data

The researcher compiled a literature review using the PsycINFO database system to develop this project. Additionally, the theoretical framework for this project consists of research articles provided by professors from previous courses taken by the researcher throughout the master’s degree program in child development.
Purpose of the Project

The purpose of the project is to provide elementary school teachers of inclusion classrooms in California state public schools with a handbook for improving reading comprehension and social skills in children with high functioning autism. The handbook provides information to teachers about autism, theory and background of effective teaching strategies, and a curriculum with suggestions, modifications, and materials directed toward developing strong reading, writing, and analytical skills in children with high-functioning autism.

Conclusions Reached

Children with high-functioning autism have deficits in reading comprehension and social skills, which need intervention at a young age. This population of students is capable of learning at the same level as their typically developing peers with slight modifications to the current curriculum. This project provides teachers with the necessary information and tools to use in their inclusion classrooms to create an optimal learning environment for children with high-functioning autism.

_______________________, Committee Chair
Ana Garcia-Nevarez, Ph. D.

_______________________
Date
DEDICATION

I would first like to dedicate this project to my husband, Justin, for spending countless nights studying with me on the couch and waiting for me at the Pizza Hut after class. Thank you for always believing in me, and motivating me to do my best. You are truly a wonderful, kind, and intelligent person. I would also like to thank my family for their enthusiasm and encouragement during my educational journey. Lastly, I would like to dedicate this project to all my fellow colleagues who shared so much of their knowledge and experience with me during late night classes, our discussions have made me a more enlightened person, thank you.
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Chapter 1

INTRODUCTION

In public schools nationwide children with high functioning autism (HFA) are more often placed into general education classrooms than into alternative school settings. Between 2002 and 2008, the percentage of students with autism spectrum disorder (ASD) in public schools rose from 0.3 to 0.6 percent nationwide (National Center for Education Statistics [NCES], 2009), and approximately 90% of children diagnosed with autism are currently placed in general education classrooms (NCES, 2011). One possible reason for the increase of this population in general education classrooms is the recent rise in autism diagnoses. According to the Center for Disease Control and Prevention an average of 1 in 110 children in the United States today has an ASD (Centers for Disease Control and Prevention, 2010).

Once a student receives a diagnosis of ASD the school district in which that child lives creates an Individual Education Plan (IEP), which is a legal document that states the services the student will receive and the educational placement of the student. All service options must be evaluated with the intent to select the least restrictive environment for students with autism, and to place them with typically developing peers to the greatest extent that is appropriate [Individuals with Disabilities Education Act (IDEA), 1997]. In an inclusion environment students with ASD are placed in a general education classroom, and assistance is usually needed with learning how to imitate, model, and remain socially engaged. It is necessary for typically
developing peers to be given training at a young age in order to facilitate the learning of young children with autism in an inclusion classroom (Laushey & Heflin, 2000). This project provides elementary school teachers with a handbook describing teaching strategies that will allow for students with HFA to fully benefit from their placement into an inclusion environment.

**Statement of the Problem**

Autism spectrum disorder (ASD) occurs in all racial, ethnic, and socioeconomic groups, and is four times more likely to occur in boys than in girls (Centers for Disease Control and Prevention, 2010). Autism is a neurologically based developmental disorder characterized by a spectrum of severity, ranging from mute and profoundly intellectually disabled, to highly gifted and intelligent individuals (Ochs, Kremer-Sadlik, Solomon, & Sirota, 2001). The Education for All Handicapped Children Act mandates a free and appropriate education (FAPE) for all students with disabilities in the least restrictive environment and most integrative environment possible in public education (Ochs et al., 2001). This act has been amended several times and was most currently reauthorized in 2004 as the Individuals with Disabilities Education Act (IDEA), which states that special education and related services should be designed to meet the unique learning needs of eligible children with disabilities preschool through age 21, and students with disabilities should be prepared for further education, employment and independent living (Madaus & Shaw, 2006). IDEA 2004 sparked the efforts of parents, educators, and disability rights advocates, and has led to an
increased number of students with ASD being placed in regular education classes with their peers (Chandler-Olcott & Kluth, 2009).

Even though these laws have been put into place to ensure a better education for children with disabilities, general education teachers are not always prepared to teach children with disabilities. When a student with HFA enters into an inclusion classroom teachers find that their tried-and-true activities will not work for this learner because the student’s needs are too great for completion of the activity (Chandler-Olcott, 2009). Teachers’ responses to inclusion classrooms vary according to the students disabling conditions and many teachers feel that they do not have sufficient time, skills, training, or resources necessary for integration (Avramidis, Bayliss & Burden, 2000). In many instances inclusion teachers are given little to no information about the level of disability a child with HFA may have, and the modifications that need to be made to the current curriculum for the child with HFA are often unclear (Ochs et al., 2001).

Additionally, teachers are required to teach based on the California State Standards, and all students in inclusion classrooms are subject to yearly state testing for assessment as required by the No Child Left Behind Act of 2001 (O’Connor & Klien, 2004). As more teachers receive students in their classrooms with HFA there is an increasing concern for the ability of these teachers to continue to maintain high-test scores for their classrooms. In order for teachers and schools to be seen as successful, it is important that all children, even children with HFA, be able to learn based on the California State standards and to test well at their grade level. With recent nationwide
budget cuts in education and increases in class size it is more difficult for general education teachers to ensure that children with HFA are developing strong reading comprehension skills. Providing additional assistance for children with HFA in the classroom, specifically in developing strong reading comprehension and social skills, will ensure that these children are successful in school.

**Purpose**

The overall design of my project will be a handbook for elementary school teachers that will include information on autism spectrum disorders, specifically children with HFA, information on teaching strategies that will create an optimal learning environment for children with HFA, and information on the theoretical background and approach for the English Language Arts curriculum. The English Language Arts curriculum included in the handbook is based on the California State Standards and is designed to facilitate reading comprehension development in children with high-functioning autism (HFA) without taking time away from teaching a classroom of typically developing students. The goals of this project are to make general education teachers feel more comfortable and prepared to teach children with HFA in their inclusion classrooms, to build strong reading comprehension skills in children with HFA, and for students with HFA to create meaningful social relationships with their typically developing peers.

The theories of Lev Vygotsky and Reuven Feuerstein create the foundation for the English Language Arts curriculum. They independently created similar theories on
mediation of meaning. Vygotsky focused his theory on sociocultural mediation and psychological tool acquisition. For example, a teacher helps a student to identify symbolic tools that are presented together with content material to create meaning for the tool as a generalized instrument, here the teacher acts as the mediator of the student’s learning (Kozulin, Gindis, Ageyev, & Miller, 2003). Feuerstein, Rand, Hoffman, and Miller (1980) focused their theories on the Mediated Learning Experience (MLE), which also discusses mediation as a tool for learning but focuses on culturally different groups, culturally deprived individuals, and learning disabled and mentally handicapped children and adolescents (Kozulin & Presseisen, 1995). Kaufman and Burden (2004) found that Feuerstein’s theory of MLE is an effective meditational tool for children with cognitive disabilities.

The curriculum for this project includes activities that incorporate the classwide peer-tutoring (CWPT) strategy which will promote discourse between children with HFA and their typically developing peers (Hughes & Fredrick, 2006). Hughes and Fredrick (2006) discuss CWPT as an effective instructional approach that spontaneously engages students with the curriculum content through reciprocal peer tutoring. Partner pairing, competing teams, immediate error correction, contingent point earning and posting of individual team performance are utilized in the CWPT strategy. Children with HFA need extra support in their learning and suggestions for modifications and additional support will be included throughout the curriculum.
Methods

Setting and Participants

The population of interest is students who are diagnosed with high functioning autism (HFA) that are placed in an elementary school inclusion classroom. More specifically, this project can be used in any California state public elementary school which services children with high functioning autism. Using the California State Standards for English Language Arts, the researcher developed a handbook for teachers to use that provides a curriculum focused on the development of reading comprehension and social skills for children diagnosed with HFA.

Procedures

This is a handbook for teachers of elementary school inclusion classrooms in order to provide information about children with HFA, information on creating an optimal learning environment for children with HFA, and will include a two week long curriculum to enhance reading comprehension and social skills in children with HFA. Teachers will be provided with information throughout the curriculum describing ways to incorporate Vygotsky’s medicational theories and Feuerstein’s (1980) Mediated Learning Experience (MLE) model into their learning environment. Information on deficits of children with high functioning autism, both academic and social, will be provided along with intervention strategies. The curriculum provided in the handbook will thoroughly explain how to present a language arts curriculum to students and create meaningful conversations between students and their peers with HFA about the
readings in the classroom. This handbook will provide teachers with the knowledge and tools to create a classroom environment where numerous meditational opportunities will exists. Moreover, throughout the curriculum teachers will be provided with reading comprehension activities that will be conducted within the classroom using the classwide peer-tutoring (CWPT) strategy (Hughes & Fredrick, 2006; Kamps et al., 1994). This curriculum will involve utilizing the CWPT strategy in relation to how it was used in reading activities described throughout the literature. The different reading comprehension skills in the curriculum included phonetic sound development, sight word development, inferential processing, and answering novel who, what, where, when, and why questions, which all correlate with the California State Standards in reading comprehension (California State Board of Education, 2010). This handbook is created to assist teachers of inclusion classrooms and make them feel more comfortable working with children with HFA.

Materials

The materials for the first section of the handbook include information for teachers of inclusion classrooms about HFA based on the current research, and information on teaching strategies based on theories from the literature. The materials for the second section of the handbook are used for the English Language Arts curriculum. These materials include the letter B Playful Sounds flash cards (Jurey, 2009), the book Bernard, Me and the Letter B (Klingel & Noyed, 2006), which will provide spelling words for the curriculum that use the Widget Rebus System (Jones,
Long & Finlay, 2007), flashcards for the constant time delay (CTD) technique (Hughes & Fredrick, 2006), the modified book Goldilocks and the Three Bears (Ransom, 2002), and writing worksheets created by the researcher. At the end of the English Language Arts curriculum assessments for the lesson will be made by the teacher in order to assess their students’ understanding of the included texts, as well as their individual development of reading comprehension skills.

Definitions of Terms

Within the field of Education and Special Education several terms are used.

Autism Spectrum Disorder (ASD): A disorder of neural development characterized by impairment in social, emotional, and communication skills. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize. ASDs can impact a person’s functioning at different levels from very mild to severely disabled (Ochs, Kremer-Sadlik, Sirota, & Solomon, 2004). There is usually nothing about how students with ASD look that sets them apart from other people and their learning abilities can vary from gifted to severely challenged. They have different ways of learning, paying attention, or reacting to things than their typically developing peers. ASDs are diagnosed during early childhood and last throughout a person’s lifetime (Centers for Disease Control and Prevention, 2011).

High Functioning Autism (HFA): When children are first being diagnosed for autism spectrum disorder (ASD) by a professional they are assessed for their IQ score.
If they are found to exhibit an average to above average intelligence then they are considered to have high-functioning autism (HFA), because they are at the “high” end of the autism spectrum (Randi, Newman, & Grigorenko, 2010).

**Individuals with Disabilities Education Improvement Act of 2004 (IDEA):**
This is the current reauthorization of the federal government legislative act passed initially in 1975, which ensures that individuals with disabilities from birth to 22 years receive access to a free and appropriate public education. This includes special education and related services in the least restrictive environment. The act also defines and requires procedural safeguards for the individual with disabilities and their guardians. ASD is one of the 13 categories of disabilities that qualify for services under IDEA (Small, 2010; Manasevit, Plagata-Neubauer & Winters, 2006).

**Least Restrictive Environment:** A requirement of IDEA where students with a disability are to receive services in an educational environment that most closely approximates the educational environment of their typically developing peers (i.e. general education classrooms) and provides for the most appropriate educational opportunities and access to core curriculum for the child (Small, 2010; Rogers, 2000).

**Individualized Educational Program (IEP):** A written statement required by IDEA which is developed by an IEP team consisting of: a school administrator, a special education teacher, a general education teacher(s), parent(s), related services professional(s), and the student. This document translates the student's evaluation
assessments and information into a practical plan for instruction and delivery of services and yearly progress goals (Small 2010; Rogers, 2000).

**No Child Left Behind (NCLB) 2001:** No Child Left Behind is a federal law signed by President George W. Bush on January 8, 2002. NCLB supports standards-based education reform, which is based on the belief that through setting high standards and establishing measurable goals individual educational outcomes will improve in the nation’s schools. If states want to receive federal funding, the Act requires that each state create their own standards with assessments in basic skills to be given to all students in public schools (Yell, Drasgow, & Lowrey, 2005).

**Curriculum:** A curriculum is prescriptive, and is usually described as a general syllabus, which specifies what topics must be understood and to what level in order to achieve a particular grade or standard. The curriculum of a special school might be examined, for example, to determine whether it matches the IEP of a student who had been recommended to go there (Rogers, 2000).

**Curriculum-based assessment:** Curriculum-based assessment has become increasingly important as a form of standardized measurement that is relevant for understanding student’s progress toward achievement of state standards. Additionally, it is a methodology of increasing importance in special education in which a child’s progress in the curriculum is measured at frequent intervals (Rogers, 2000).

**Inclusion:** Inclusion is a federal policy that promotes the integration of children with disabilities into mainstream classrooms. Procedures are designed for maximizing
participation and understanding which addresses typical peers’ lack of information as well as high-functioning autistic children’s social deficits (Ochs et al., 2001). It is also a popular philosophical position based upon the belief that we need to return to one educational system for all students, and that every student is entitled to an instructional program that meets his or her individual needs and learning characteristics (Rogers, 2000).

**Standardized tests:** Standardized tests are given in the same manner to all test takers and have norms reflecting a larger population. Usually these are age or grade based norms that reflect the performance of children throughout the state and result is national educational averages (Rogers, 2000).

**Class Wide Peer Tutoring (CWPT):** A peer-mediated teaching strategy that has proven to be affective in increasing academic achievement for students with and without disabilities. Components of CWPT include alternating tutor-learner roles, verbal and written practices of skills, praise and awarding of points for correct responses, and announcing winning teams (Kamps, Barbeta, & Delquadri, 1994).

**Cooperative Learning:** The instructional use of small groups in which students work together to maximize their own and each other’s learning (Johnson, Johnson, & Holubec, 1990).

**Mediated Learning Experience:** Feuerstein’s theory of Mediated Learning Experience includes intentionality, transcendence, and meaning. A mediated interaction exists when there is at least an explicit intentionality on the part of the
mediator, such as a teacher or parent, to turn a situation from incidental learning into intentional learning. The child’s cognitive process is the primary target of the mediated interaction, not just the object being discussed. In MLE, the child will identify the underlying principles of the nature of learning and transfer them to a wide range of other situations and tasks. MLE becomes possible when information is infused with meaning by the mediator and can be generalized to other context (Kozulin & Presseisen, 1995; Kozulin et al., 2010). The MLE theory suggests that orgasmic and environmental factors are not determinants of cognitive-development (Kozulin & Presseisen, 1995). Teachers of inclusion classrooms can create intentional mediated learning experiences for their students with HFA, by providing meditational opportunities that will assist them in developing their cognitive and social skills.

**Limitations**

Teachers may find several difficulties when attempting to implement this type of project in their classroom. Despite the increasing popularity of inclusion reforms, general education teachers do not traditionally provide the adaptations and accommodation that many students with disabilities need to succeed in inclusive environments (Cook, Cameron, & Tankersley, 2007). This project requires that teachers provide materials that might need modifications for their students with HFA and school districts may not have the necessary budget needed to implement the curriculum provided. This project also requires that teachers commit time to discussion during class and creation of materials after school. The materials in this curriculum
include books, sticker cards, prizes, etc. and teachers may have to create alternative materials to use with students. In preparing the handbook the researcher was limited by the current research on ASD. At this time there is no definite cause for autism and it is still being debated as to whether it is a genetic or environmental disorder. The recommendations provided throughout the lesson plans are based on theories which have been used on several children with learning disabilities, but may be limited in their use on children with HFA. Moreover, the experience of the researcher in working with children with HFA is limited to classroom settings as an instructional aid and not as an inclusion classroom teacher.

**Organization of the Project**

The remainder of the project will be organized as follows. Chapter 2 will provide the reader with a review of the literature related to: a) defining high-functioning autism and the capabilities of these children to be active participants in the classroom, b) reading difficulties in children with HFA including deficits in reading comprehension, detailed-focused processing, hyperlexia, and phonological awareness, c) how deficits in discourse affect learning for student’s with HFA, and d) ways to support reading comprehension in children with HFA through the use of the mediated learning model and classwide peer tutoring strategies. Chapter 3 will discuss the methodology used in developing the handbook and elementary school reading comprehension curriculum for children with HFA. Chapter 4 will provide the reader with a brief summary of the
project as well as an analysis of its potential effectiveness and final recommendations for practice and future research related to curriculum for children with special needs.
Chapter 2

REVIEW OF LITERATURE

Introduction

The literature review discusses the theoretical framework of the project, deficits of reading comprehension in students with HFA, deficits in discourse for children diagnosed with HFA and ways to support reading comprehension in the classroom.

Theoretical Framework

Mediational opportunities arise when activities that start as an interaction between the adult and the child and become internalized as the child’s own psychological functioning (Kozulin et al., 2003) Effective spontaneous mediation does not occur frequently among teachers in general education classrooms because interactions traditionally occur in one direction, from teacher to student. In traditional classrooms directive teaching strategies, where interactions occur one way, is the norm and meditational approaches, where interactions are bi-directional and happen back and forth between teacher and students, are avoided or teachers are simply unsuccessful in their meditational attempts (Bliss, Askew, & Macrae, 1996). This occurs due to the fact that many teachers believe that the meaning embedded in the highly structured learning materials is sufficiently transparent to students and the situation therefore does not warrant continually interactions to occur beyond directive teaching (Kozulin et al., 2003). The lack of spontaneous mediation used by teachers in the classroom emphasizes the necessity to create effective training tools in both the
general types of mediation and specific techniques appropriate for a given age and subject matter (Kozulin, 2003). When a teacher feels comfortable allowing meditational opportunities to exist in the classroom, all students including students with HFA will have more meaning making experiences.

**Vygotsky’s Mediation Theory**

Vygotsky proposed a sociocultural theory of learning in which the meaning of words do not remain constant, but develop as each individual encounters new contexts of activity (Wells, 2007). The meaning of words can be mediated through exposure to social interactions between people, which takes place in environments such as a classroom. The interactions that occur between the individual and the environment are not immediate, but are mediated by meanings that originate outside the individual, in the world of social relations (Kozulin & Presseisen, 1995). Kozulin and Presseisen (1995) discuss two stages of Vygotsky’s mediation. The first stage is the actual interaction between the child and the adult called interpsychological, and the second stage is the inner form of this function called intrapsychological, where the child is able to internalize what was learned from the initial interaction.

Valsnier (2001) explains a third stage of mediation, termed generalization, where a word meaning becomes separated from the context in which it emerged and becomes transferable to other new contexts. These stages of mediation occur during student learning at all times, but can occur more often when opportunities for meaning making are greater and students are able to interact more with each other during
classroom activities. The greater the amount of interpsychological mediation between adults and more competent peers, the more information a student will internalize and have access to when faced with similar situations and tasks.

In the traditional classroom, teachers dominate the discussions about subject material and students are expected to sit silently, absorb the material and raise their hands to speak (Nichols, 2006). More recently, in comparison to traditional classroom practices, there has been a shift from teacher centeredness to student activity with an increase in the variety of social interactions and collaborative learning activities (Järvelä & Volet, 2004). Teachers no longer act as the dominant participant but choose to instead be the mediator for their students. They create more interpsychological interactions by selecting, changing, amplifying, and interpreting objects and processes for their students, and they can then internalize the information and process it intrapsychologically (Kozulin & Pressseisen, 1995). Nichols (2006) described highly effective teachers as those who encourage children to use talk as a tool in the classroom and allow for a conversational tone that flows, as opposed to a controlled and interrogational pattern. In this environment others’ ideas are engaged and hypotheses, strategies, and concepts are co-constructed between teacher and students and students themselves. Wells (2007) suggested that adapting a meditational approach in the classroom is not an easy task for teachers or students, and teachers must relinquish control of the flow of discussion, as well as avoid evaluating each student’s contribution. In addition, students must show that their peers’ contributions are worthy
of careful consideration and make their own contributions as clear and to the point as possible.

**Feuerstein’s Mediated Learning Experience Model**

The theory of mediated learning experience (MLE) was designed by Feuerstein (1990) and suggests that organismic and environmental factors constitute only distal determinants of cognitive development, whereas MLE is a proximal determinant based on the quality of interaction between adult, stimuli of the environment, and the child (Kozulin & Presseisen, 1995). The mediated agent, such as the teacher in a classroom, selects and organizes the world of stimuli for the child in order to create the twelve aspects of MLE outlined by Feuerstein as important for transforming students from passive recipients into active generators of their own learning (Kaufman & Burden, 2004). The twelve aspects fall under three main categories, first is the intentionality on the part of the mediator with the child reciprocating that intention, second, when transcendence of the here-and-now occurs and information can be transferred to wide range of other situations and tasks, and last, to add meaning to the stimulus by the mediator (Kozulin et al., 2010).

Kozulin and Presseisen (1995) explain that Feuerstein’s theory of MLE is the product of research conducted on children who are learning disabled and handicapped. MLE focuses on creating mediated interactions to improve cognitive development of children with disabilities. The ultimate goal of mediated learning is to directly expose children to stimuli and to develop in the child prerequisites for direct learning. In an
inclusion classroom children with HFA will have more opportunities to create meaning making experiences with their typically developing peers if interactions are mediated by their teacher.

Kaufman and Burden (2004) conducted a qualitative study utilizing the Mediated Learning Experience model by creating a program for ten young adults with various learning disabilities to develop cognitive, emotional and social development over the course of one year. The group worked together eight hours each day for two weeks. Participants would switch roles between tutor and tutee with explicit instructions on how to mediate. Each session ended with every pair describing what they had worked on that day and each individual was required to describe what s/he had learned. Results showed that young adults with significant learning disabilities can function very effectively as peer tutors and learning support agents for each other, and that they actively enjoy working in this capacity. Positive results for the MLE model were also found for children with severe developmental disabilities, where the WISC-R subtests were used to test for improvement of cognitive functioning before and after the implementation of the MLE program (Kozulin et al., 2010). In this study students with learning disabilities were able to tutor each other successfully using the MLE model in their classroom. The mediator does not always have to be the teacher and can be a more competent peer. While using the MLE model students with learning disabilities can be successful based on each other’s strengths and weaknesses and having been given the opportunity to work together on a learning activity. In an
inclusion classroom MLE can be effectively used with children with high functioning autism when their teacher gives them the opportunity to interact with their typically developing peers.

**Deficits in Reading Comprehension**

Children diagnosed with high functioning autism are usually placed in general education classrooms with typically developing peers because they do not have the same academic deficits as children with a more severe ASD (O’Connor & Klein, 2004). Although children with HFA have deficits in reading comprehension, they are still required to participate in state wide testing for language arts where scores can affect their academic placement in the future.

One of the deficits in reading comprehension children with HFA tend to have is detailed-focused processing (Happe & Frith, 2006), which limits a child’s ability to generalize text and relate the details of the story to worldly knowledge or generalize the text to other similar situations. Instead, children with HFA focus on details within the text, do not process other possible outcomes or possibilities, and have difficulty with inferences and implied information. This affects the way that children learn because as they are unable to connect the details of the story to the entire context of the text or understand information in the text that is ambiguous. Inevitably, they fail to gain a complete understanding of the story from beginning to end. Many teachers take these skills for granted because most typically developing children are able to easily
relate text to past and worldly knowledge and have to ability to generalize information to other contexts.

Because reading is taught at a very young age using phonological awareness, children with HFA become very good as decoding words although their comprehension may be lacking. The ability to read words correctly places a child with HFA at normal grade level reading, but this type of reading does not focus on the meanings of words, only sounds. The ability to decode words without knowing the meaning is termed Hyperlexia; this deficit in reading will be discussed further in this section.

**Reading Comprehension Expectations**

Most students with HFA have an IEP and are placed in an inclusion classroom, which is considered to be the least restrictive environment. An increasing number of students with HFA are being partially or fully integrated into inclusion classrooms where they are expected to learn at the same rate as their typically developing peers (Chiang & Lin, 2007). Fluent readers with HFA are challenged by the complex cognitive demands of reading comprehension as texts increase in difficulty and length; therefore, the goal is to move them beyond the word-reading processes and shift their cognitive resources to meaning-making (Randi et al., 2010).

If children diagnosed with HFA are unable to understand the meaning of words within the context of written work then they are less likely to succeed in school. However, most children with HFA show distinctive difficulties in reading
comprehension, which implies that there is a need to develop reading interventions in
general education classrooms for this particular population (O’Conner & Klein, 2004).
If children with HFA do not meet the expectations of the teacher and the school then as
they get older parents may become faced with the idea of their child being held back or
placed out of a general education classroom. Reading comprehension deficits in
children diagnosed with HFA need to be remediated early in their development to
increase the chances for successful reading comprehension outcomes in the future.

**Detailed-Focused Processing**

Children with HFA have a processing style that focuses on details or individual
words in a text which makes it difficult for them to understand text at a global level or
found that when children with HFA are presented with pre-reading questions to assist
in increasing reading comprehension it actually activated prior knowledge that was
irrelevant or inaccurate. The children would have the tendency to focus on this
irrelevant information throughout the reading and post reading phases. This focus on
the details of the text which they were most interested in negatively affected their
comprehension.

During the elementary school years children with HFA have difficulty relating
reading material to worldly knowledge. They become fascinated and preoccupied with
their own topics of interest which may be unrelated to the text presented in the
classroom (Church, Alisanski, & Amanullah, 1999; Wahlberg & Magliano, 2004).
Wahlberg and Magliana (2004) examined whether or not children with HFA could use cues to relevant world knowledge to aid in their understanding of ambiguous text. Results showed that readers with autism may have deficits in their ability to use relevant background knowledge to interpret and comprehend what they read.

Randi et al. (2010) stated that children with HFA can be guided to generalize the main idea in expository text by prompting them to underline repeated words in a passage and then guiding them to form a generalization. However, even though this prompting will allow for children with HFA to generalize from parts to whole, they still have difficulty with inference making at the abstract level. The more ambiguous the text, the more difficult it was for students with HFA to use relevant background knowledge to interpret what they read (Wahlberg & Magliano, 2004). Information that is presented in text which holds the expectation that children will connect their prior knowledge to the text actually creates confusion for children with HFA. This is due to the fact that they are unable to make those generalizations and in turn lose the meaning of the passage altogether.

A study conducted by Diehl, Bennetto and Young (2006) examined story recall and narrative coherence in children with high-functioning autism. They found that although the narratives and recall of the gist of the story of children with HFA appear typical on measures of length and syntactic complexity. However, they did have difficulty using the gist of the stories to aid story retelling. Although both groups, typically developing and HFA children, were similar in their recall of the gist of the
story, children with HFA were less likely to use the gist of the story to later link the story together and organize it in a coherent manner. They may have lacked the deeper understanding needed to make the necessary causal inferences and then relate them to a listener. The children with HFA were too focused on the details of the story to be able to retell the gist of the story to another person in a coherent way.

**Hyperlexia and Autism**

Often children with HFA have superficial word recognition skills, meaning they are capable of reading words phonetically and have decoding and spelling skills of a savant-like nature, but their ability to comprehend the meaning of the words is severely impaired (O’Connor & Klien, 2004). This pattern of reading behavior is termed hyperlexia (Nation et al., 2006). It is a strength that children with HFA have when they are hyperlexic and able to read nonwords but this does not mean their comprehension of word meaning is any greater (Newman et al., 2006).

Children who are hyperlexic use some underlying knowledge of letter-sound correspondence in order to quickly recognize or sound out words (Gabig, 2011). Research has shown that when reading comprehension was measured, the children with autism and hyperlexia performed at a level equivalent to their peers who were autistic with no hyperlexia, and were significantly lower than typical children (Newman et al., 2007). This project will focus on improving reading comprehension skills in children with HFA with or without hyperlexia, because children with HFA and hyperlexia have similar deficits in reading comprehension skills, despite their ability to
decode and spell single-words at the same rate as their typical peers (Newman et al., 2007).

**Phonological Awareness**

Reading comprehension instruction has received less emphasis in schools than phonics instruction. This has effects on children with ASD because they are poor comprehenders who are typically adept at phonological processing and word recognition (Randi et al., 2010). Phonological awareness is a metalinguistic ability that refers to the awareness of syllable and phonemes in the spoken words and the ability to manipulate the word and both the individual phonemes and level of the syllable (Gillon, 2004). This type of learning is essential in being able to decode words by sounding out each letter in the word when it is not instantly recognizable by the student.

Gabig (2011) examined phonological awareness and single word reading in students with autism using sight word reading of real words and non-words. The researcher found that children with autism demonstrated a performance bias for sight word reading over non-word reading. This suggests that word analysis skills for the explicit phonological recoding of unfamiliar orthographic patterns to accurately recognize and pronounce an unfamiliar word may be less developed. Where some students with HFA may display little ability to decode sight words, others may display excellent reading patterns. Nevertheless, whether a child with HFA has hyperlexia or not they are still not able to gain meaning from the words they are reading and need
further intervention to assist them in their comprehension skills beyond phonological awareness.

**Deficits in Discourse**

Creating a mediated learning experience means making opportunities for social interactions to occur between peers. Simply placing a child with HFA in an inclusion setting is not sufficient to encourage authentic social interactions between students with HFA and their typical peers (Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008). Children with HFA show deficits in many areas of social skills which include correct use of linguistic signs, low levels of initiation and response in interactions with peers, and understanding others social cues as to clues about the other persons thoughts, intentions, or beliefs. However, researchers have discovered that with peer-mediation many of these deficits can be overcome (Owen et al., 2008; Ochs et al., 2004; Kamps et al., 1994). When typical peers become educated about ASD and are trained on initiating conversations with their classmates with disabilities it results in children with HFA showing a greater amount of interactions with their peers (Kamps et al., 1994). These interactions between typical peers and children with HFA allow for more meaning making opportunities inside and outside of the classroom.

**Linguistic Signs**

Wells (2007) argues that linguistic signs used in schools have the capability to organize the way of life and create a culture that enables people to ‘think together.’ Individual thinking is mediated by these same signs which are appropriated with
personal significance as a result of the situations and interactions with others in which they encounter. Children progressively master the culture’s resources of signs as they take part in the various activities in which these signs are used to mediate actions jointly undertaken with more mature members of the culture. This means that typically developing children continually create meaning of words through the creation of linguistic signs which are used during their interactions with others, including teachers and classroom peers.

The creation and utilization of linguistic signs happen differently for children with autism compared to their typically developing peers because they initiate and comprehend speech acts that serve directive purposes more often than speech acts that facilitate shared understanding and affect among participants (Ochs et al., 2004). Through creating an environment in the classroom where children are able to develop their own dialogue and discussions about linguistic signs, opportunities of knowledge creation for all children can occur. Wells (2009) stated that knowledge is most fully achieved between people who are together trying to solve a problem, construct an explanation, and decide the next course of action. In other words, a participant’s understanding of a specific topic occurs when they are able to compare others’ contributions to a discussion to their own perspective, formulate their own ideas, and be able to add something of relevance to the conversation.

Ochs et al. (2004) states that creating and taking part in conversations are within the capabilities of high-functioning persons with autism. They likely acquire
conversational sequences and turn-taking skills through spontaneous interaction rather than learning them through elicited imitation and other forms of instruction. It is important to understand that children with high functioning autism need to be viewed as members of social communities, who think and act in relation to socially and culturally ordered situations in motion, they are agents of social experience (Ochs et al., 2004). It is the classroom teacher’s responsibility to create an environment where students feel comfortable expressing their ideas and opinions and where children of all abilities feel included in activities and discussion.

**Deficits in Social Interactions**

Church et al. (2001) described the social interactions of children with HFA during the elementary school years as stiff, where friendships were seen as superficial and based mostly on a topic of interest to both children. Parents would rehearse opening lines of conversation with their children because they were worried that their child might start a conversation abruptly with a monologue of information and no greeting. It is difficult for children with HFA to interact with other peers appropriately because they often misread social cues and act inappropriately. Children with HFA might blurt out socially inappropriate comments during a conversation because they are unable to comprehend the impact of those comments on others. The difficulty for children with autism to comprehend the thoughts, feelings, and emotions of other is called ‘mindblindness’ (Baron-Cohen, 1995). According to Ochs et al. (2004) children with autism have a central impairment in the capacity to construct a ‘theory of mind’,
which is the ability to attribute intentions, beliefs, and other psychological states to another person based of prior knowledge about that person or on the basis of a person’s ongoing bodily comportment, facial expressions, voice quality and actions. This impairment makes initiation of conversation and creating meaningful relationships with peers difficult for children with HFA. It is important in classrooms to discuss with students that children with autism may not always respond or say the correct things in conversation and that they should understand that it is a part of their disability.

**Initiation and Response in Conversation**

The interactions of children with HFA with their peers can be described as stiff, where conversation with students is usually made for specific information on a topic of interest to both children (Church et al., 2000). The lack of social competence often seriously interferes with their performance in the general education classroom (Kamps et al., 1994). However, interventions can be implemented in order to create more typical conversations between children with HFA and their typically developing peers.

Owen et al. (2008) conducted a study on three children in inclusion classrooms who were diagnosed with HFA and Asperger’s disorder in order to examine their social interactions with their typical peers. Data were collected during recess and lunch periods because social interactions were generally discouraged during classroom activities. Baseline data was taken for the amount of interactions that took place in these environments. Then, peers were selected for training based on observations and
recommendations made by the teacher and classroom assistants. Lastly, results were analyzed to examine any changes that may have occurred from training procedures in the relationship between the student with HFA and their typically developing peers.

Training for typical peers consisted of three separate phases. In the first phase peers were provided with a rational for developing friendships with students with disabilities. The students would read a children’s book about a boy with autism in an inclusion classroom titled *The Boys in My Class* (Owen-DeSchryver, 2002). The second phase included discussing the main strengths and weaknesses of their classmates with ASD. The last phase consisted of completing worksheets on initiating conversations, and creating friendship books.

Results of the study showed that peer interactions increased for all three participants after typical peers were trained on how to interact with the students with HFA. This study shows that peer-mediated interventions are effective in building social interactions between students with ASD and their classmates. By utilizing books and materials in the classroom children can learn how to communicate with their peers who have special needs and possibly build friendships with them as well.

**Creating Positive Social Experiences**

In addition to creating interventions in order to increase interactions between students with HFA and their typically developing peers, providing information to students about their peers with autism can also be helpful in creating positive social experiences. Ochs et al. (2001) conducted a qualitative study on sixteen high
functioning children with autism in public schools in the United States in order to examine inclusion practices and discourse between the participants and their typically developing peers. Ethnographic observations were made in the classroom and on the playground using observations and video recording. The results showed that positive inclusion practices were facilitated by peer awareness of the capabilities and impairments of HFA peers. Positive outcomes were related to an introduction which was provided to classmates in regards to autism and the HFA child as a whole person, as well as the manner in which the child was introduced to the other children in the class. In classrooms where the diagnosis of a child was known and discussion occurred as a class, classmates were more likely to work collectively to incorporate the HFA child into academic and recreational activities. Negative inclusion experiences included neglect, rejection, and scorn of the child with HFA. These behaviors occurred when teachers have not been primed to notice a child’s social withdrawal nor to understand when and how to intervene.

Ochs et al. (2001) stated that “although children with autism sometimes appear impervious to rejection and scorn, they can be hurt by these experiences and/or become anxious to revise their public self image” (p. 416) which in return inhibits their ability to participate and learn as an equal member of their classroom. In inclusion classrooms it is important to be aware of how a child is being treated by their peers. It is important to be aware that creating a mediated learning experience means including all children in classroom activities and discussions. The more a student with HFA is able to interact
positively in the classroom and with peers the more successful they will become in school.

**Supporting Reading Comprehension in Inclusion Classrooms**

Inclusion classroom teachers are given a great responsibility when taking on the tasks of teaching children with disabilities in their classroom. Most of the time, teachers are required by a child’s IEP to modify the curriculum materials to fit the needs of these children. Successfully implementing curriculum based on the California State Standards and being able to successfully teach both typical developing and children with disabilities takes a lot of time and effort and most of the time teachers are not prepared for the high demands placed on them. In addition, there is not much information given to teachers that suggest successful ways of teaching an inclusion classroom and creating an environment where all students are included and successful in learning how to read.

The benefits and negative aspects of inclusion classrooms will be discussed, which includes the thoughts and feelings of teachers who are teaching in an inclusion classroom. Classwide Peer Tutoring (CWPT) will be discussed as a useful and successful instructional strategy that makes it possible to include and teach students with disabilities alongside typical peers (Hughes & Fredrick, 2006). Finally, the Widget Rebus System, which assisted students with HFA to comprehend text using related pictures as references, will be discussed.
Inclusion Classrooms

There is an increasing amount of students with autism who are being placed in general education classrooms and teachers have several different ideas about these changes being made that may affect their teaching styles (Chandler-Olcott & Kluth, 2009). Teachers of inclusion classrooms have the belief that the effectiveness of inclusion is related to the individual student, where students who have positive attitudes and who are motivated to do their best benefit the most from inclusion, while students who have more severe academic and work completion difficulties tend to benefit the least (Bush, Pederson, Epsin, & Weissenburger, 2001). Teachers also felt that based on the ‘No Child Left Behind’ legislation there is too much curriculum to cover over the school year, and that they could not afford to spend time on modifying curriculum and creating meditational opportunities with their students (Well, 2007).

On the positive side, teachers of inclusion classrooms with children with ASD reported that awareness and acceptance of children with ASD increased among typically developing children in their inclusion classrooms (Finke, McNaughton, & Drager, 2009). Teachers who expose typically developing children to autism using information books such as The Boy in My Class allow children to gain understanding and awareness about children with disabilities (Owen-DeSchryver et al., 2008). In addition, creating discussion opportunities about the positive attributes of children with disabilities fosters a more accepting environment for children who are different. Moreover, the teacher-student relationship is associated with the child’s peer status in
the classroom, where students with autism who were integrated into the informal social structures of their class are seen as successfully included into their general education classrooms (Robertson, Chamberlain, & Kasari, 2003).

Cook, Cameron, and Tankersley (2007) examined the relationship between teachers and their students with disabilities in inclusion classrooms. They found that teachers have the tendency to develop positive attitudes of concern for students with disabilities whose instructional needs were reasonable to address for the teacher and for those who did not exhibit negative behaviors that elicit teacher rejection. Moreover, a teacher’s higher rating of behavior problems actually lessens the quality of the teacher-student relationship in an inclusion classroom (Robertson et al., 2003). In classrooms where the staff embraces the responsibility of meeting all the students’ learning needs and where full participation for all learners is the goal, the inclusion of students with autism in the learning community can have a profound impact on literacy development for every member of that community (Chandler-Olcott & Kluth, 2009).

Classwide Peer Tutoring

In addition to using the MLE model, instructional strategies were implemented into the current project to supplement the Mediated Learning Experience. “Classwide peer tutoring (CWPT) is a peer-mediated teaching strategy that has been proven to be effective across a variety of subjects and grade levels in increasing academic achievement for students with and without disabilities” (Kamps et al., 1994, pp. 50). Hughes and Fredrick (2006) discuss CWPT as an effective instructional approach that
spontaneously engages students with the curriculum content through reciprocal peer tutoring. Partner pairing, competing teams, immediate error correction, reciprocal tutoring procedures, contingent point earning and posting of individual team performance are utilized in the CWPT strategy (Maheady & Gard, 2010). CWPT is a teaching strategy that any teacher can change in order to fit their classroom activities, available teaching materials, and social environment.

Classwide peer tutoring was developed by the Juniper Gardens Project as a strategy to improve academic achievement in students who fall into the category of low-achieving minority students or students who have mild learning disabilities (Delquadri, Greenwood, Whorton, Carta, & Hall, 1986). In the study by Kamps et al. (1994), three high-functioning students with autism and their typical peers participated in classwide peer tutoring which consisted of 25 to 30 minutes of well-specified instruction in which tutor-learner pairs worked together on reading fluency and comprehension. Results showed that all three students with high functioning autism and their regular classroom peers improved in their academic and social skills, and that student’s enjoyed earning tutoring points while participating in the study. CWPT focuses on both on the academic and social needs of students with disabilities through creating partner pairs where they are working one on one with a peer concentrating on academic skills (Kamps et al., 1994).
**Constant time Delay**

Vocabulary development can be supported for children with high functioning autism through various activities involving classwide peer tutoring. One example of an activity that fosters development of vocabulary is constant time delay (CTD), during which children work together in teams and use flashcards to learn the meaning of words (Hughes & Fredrick, 2006; Hughes, Fredrick, & Keel, 2002). Hughes and Fredrick (2006) describe constant time delay, where teams are developed based on strength of academic skills, and children with strong academic skills are paired with children with lower academic skills. The first time the vocabulary words are presented there is a 0-second delay, where the definition of the word is read and then the word that matched the definition is shown. Afterwards, a 5-second delay is given between the definition being read and the word being shown, giving the chance for the students to respond with the correct word that matches the definition.

During these activities there is contingent point earning and posting of individual team performances based on their progress related to memorizing definitions for words. Children with learning disabilities displayed significant gains in their vocabulary knowledge using the CTD procedures with CWPT. In addition, students with learning disabilities were able to maintain mastery over a seven-week period. In a different study, Hughes, Fredrick and Keel (2002) used CTD procedures to teach written spelling words to a student with a learning disability. The special education resource teacher who participated in the study was successful in implementing the
instructional procedure using 0-sec and 5-sec delays. The results of the study showed that the student learned to spell all 15 spelling words using the CTD method. The CTD method can be easily implemented in an inclusion classroom using flashcards and can be done in peer tutoring groups with children with HFA working with their typically developing peers to learn spelling or vocabulary words.

**Widgit Rebus System**

Visual literacy assists students with disabilities by creating a system for expressing, recognizing, understanding, and learning visual images that are negotiable by all people, examples include pictorial and graphic symbols and signs (Alberto, Fredrick, Hughes, McIntosh, & Cihak, 2007). A rebus is a symbol or picture which represents an entire word and can be pictorial, geometric, or abstract (Jones, 1979). Pictures can be added to words in a particular context without the meaning being substantially altered (Jones, Long, & Finlay, 2007). The Widget Rebus system requires that children have the fundamental skill of visual attention, whereas they will be able to visually attend to the pictures in the story in order to gain comprehension of the meaning of the words associated with the picture (Jones, 1979). Pictures that are paired with words can be taught to represent the meaning of words in relation to people, places, things, and actions and can also be generalized between different context of literature and environments (Alberto et al., 2007; Jones, et al. 2007). By utilizing the Widget Rebus System in text, children with HFA will be provided with additional support for gaining meaning of words within a context.
Summary

In conclusion, there is a need for intervention strategies that teachers can use in their inclusion classrooms that will create a learning environment where children with high functioning autism can develop strong reading comprehension skills. The role of the teacher and typically developing peers has been examined and indicates that teacher support and peer training in inclusion classrooms is needed. After examination of the research, the teacher’s utilization of the meditational learning experience and creation of meaning making opportunities in their classrooms for children with HFA and their peers is clearly important for the development of academic skills. In addition, the relationships between children with HFA and their peers and teachers have also been established as an important aspect in promoting social and academic success.

The present project will provide information for teachers on the deficits of autism, ways to create meditational learning opportunities, and an English Language Arts curriculum comprised of books and materials to teach a strong reading comprehension curriculum that will enhance the achievements and success of student with HFA. The curriculum assists teachers in creating a meditation learning experience in the classroom by applying strategies such as classwide peer tutoring and group discussion opportunities. The proposed project also presents opportunities to extend ideas about the English Language Arts curriculum and explains how to develop it for the elementary school inclusion classroom in order to promote teaching to all students of different abilities in one classroom environment. While research has shown that
children with HFA can learn to comprehend text within a story, teachers are still struggling with how to apply this type of learning to their classrooms and curriculum. This project will not only benefit students with HFA but it will also benefit schools that are seeking to meet the California State Standards and increase test scores. Additionally, parents will be pleased to see their child succeeding in school and becoming more interested in reading at home.
Chapter 3

METHODOLOGY

The primary goal of this project is to provide a handbook for teachers of inclusion classrooms that will offer information on HFA and meditational strategies, as well as an English Language Arts Curriculum for California public elementary schools that focuses on developing reading comprehension and social skills in children diagnosed with HFA. Utilizing the theories of Vygotsky and Feuerstein, teachers will have the tools to create a mediated learning environment in their inclusion classroom, such that children with HFA will be able to interact with typical peers and create meaning making opportunities. Suggestions for room set up, seating arrangement, and discussion time will be provided by the researcher in the project. Materials that will be used for this project are specific to this curriculum and include: books, handwriting worksheets, sight word flash cards, and speech sounds flashcards. Supplemental materials include: information on autism, reading material for teaching students about autism, and information on creating a mediated learning experience. Assessments of curriculum will be used at the end of each lesson to record the development of reading comprehension skills from the beginning of the curriculum to the end in students with HFA, and include: questions to reflect on student progress, spelling tests, and recording of student progress with a point system.
**Setting and Participants**

The population of interest is students who are diagnosed with high functioning autism (HFA) and are placed in an inclusion classroom at a California public elementary school. Using the California State Standards for English Language Arts, the curriculum is designed for inclusion teachers to extend the typical language arts curriculum to focus on the development of reading comprehension and social skills for children diagnosed with HFA.

**Role of the Researcher**

The researcher has worked with children with learning disabilities for the last three years in the school and at home and has been trained in teaching children with autism through Applied Behavioral Analysis. Behaviorism has been at the forefront of autism therapy and research, but many children with autism are able to read words and text and yet are unable to comprehend any meaning from the text they read. Teaching reading comprehension in general is difficult for all children, but if public schools are going to be integrating more children with HFA into their general education classrooms, then they need to provide services to children with disabilities that will assist their comprehension of text in addition to their basic reading, writing and math skills.

As a Master’s student as the California State University, Sacramento the researcher has taken courses in Special Education, Cognitive Development, and Motivation Development. In the Special Education course public policy was taught,
specifically the laws which have been passed to protect students with disabilities such as the Individuals with Disabilities Education Act (IDEA) 2004 and Free and Appropriate Education (FAPE) where children with disabilities are being serviced more often in general education classrooms. In studying cognitive and motivational development the researcher discovered that there are ways for teachers to create a classroom environment where everyone would be able to learn to their ability through mediation. The interest of the researcher in becoming a teacher in general education sparked interest in creating a curriculum in which students with disabilities will be able to not only receive a free and appropriate education but they will also learn to their best ability academically in a general education classroom.

**Procedure**

The information for this project was gathered through extensive research on several topics related to the development of strong reading comprehension skills for children with HFA, which included articles examining the deficits and development of reading comprehension in children with high-functioning autism, current inclusion classroom practices, teachers’ perspectives on inclusion practices, assessments of reading abilities in children with high-functioning autism, and the development of conversational abilities in children with high-functioning autism. Additionally, articles were collected on research projects which utilized the Mediated Learning Experience (MLE) and classwide peer tutoring (CWPT) strategies and how these types of theories
can assist teachers in creating a classroom environment most beneficial for children with HFA and their typically developing peers.

Before developing ideas for the handbook correspondence for this project included interviews conducted with general education teachers, special education teachers, and speech therapists in order to ensure that possible materials and curriculum lesson plans were age appropriate, and adhered to the California State Standards for English Language Arts. Furthermore, e-mail correspondence was made before the decision to use classwide peer tutoring (CWPT) in the curriculum to ensure that it was a learning strategy that is preferable for both students and teachers and can be used throughout an entire school year in varying ways.

Sound cards and a modified reading book were provided by the author, Ruth Jurey, and permission was given by her to include these materials in the project. The researcher acquired other materials through access to the community library and by creating materials independently. Books included in this project have been used by the researcher and other special education professionals to promote reading comprehension skills in children diagnosed with autism spectrum disorder.

**Creation of Activities and Materials**

Materials for this project were donated by Ruth Alice Jurey, M.S., C.C.C. Speech and Language Pathologist whom the researcher works with at the Placer County Office of Education, in the autism spectrum disorder program for grades K-5. Ruth Jurey modified *Goldilocks and the Three Bears* specifically for children with
speech delays in order to fit the needs of this population. The pictures in the book were
used from the original story, and the text was created by Ruth Jurey using the
BoardMaker Program for children with ASD. This book has been used in special
education classrooms for children with moderate to severe disabilities.

The Playful Sounds Speech Cards were also created by Ruth Jurey. The focus of
the sound speech cards is on phonological awareness, where pictures are paired with
letter sounds which help children with speech delays to associate the sound of the letter
with sounds they hear in their environment, these cards are sold on Amazon.com.

The book, The Boy in My Class, which will be used as an introduction to ASD
for typical peers, was written by Jamie Owen-DeSchryver, Ph.D., Associate Professor
of Psychology at Grand Valley State University, and is currently unpublished. The
researcher was able to gain a copy of the manuscript through e-mail correspondence.
Other materials such as sticker cards, flashcards, and score boards, the researcher
created based on materials which have been previously used in the field of special
education and are easy for teachers to re-create using basic classroom materials.

**How Information was Gathered**

All information gathered for this project was analyzed based the relevance of the
information in relation to the goal of the project, which is to improve reading
comprehension in children with high functioning autism in an elementary school
inclusion classroom. The theories discussed throughout the project were chosen to
provide a strong foundation for optimal use of suggested teaching strategies and the
creation of meditational opportunities in the classroom. During the construction of this project, materials and activities were gathered and created with the idea that they would not only benefit children with high-functioning autism, but that they would also benefit the reading comprehension of other students who participated. For instance, the materials used may be beneficial for children who are second language learners, children with other types of mild disabilities who can benefit from peer interaction and visual stimulation throughout reading activities. The goal of this project is to promote the development of reading comprehension and social skills for children with high-functioning autism, but the researcher hopes that it will also be a project which will assist all children in their own development and allow for teachers to have the materials and resources to create an environment where learning can be accomplished to the standards set by the state of California for children of all abilities.
Chapter 4

DISCUSSION

This chapter summarizes the handbook for improving reading comprehension and social skills in children with high functioning autism that was created for this project. Then, discusses expected positive outcomes, describes relevance and effectiveness of the project, and summarizes implications for future practices and research. Finally, an examination of the limitations of the project will be made.

Description of Curriculum

This handbook provides teachers with information and support that will help them to engage their students with HFA in classroom activities and increase their reading comprehension and social skills. This handbook provides materials and activities that will facilitate the learning of children with HFA in being able to create meaning for words in the text as they read. The curriculum portion of the handbook focuses on the three reading comprehension deficits which are phonological awareness, detailed focused processing, and hyperlexia. Phonological awareness is the first stage in reading, and in the curriculum students are exposed to letter sounds with a sound card which allows for students with HFA to connect the sound of a letter with a familiar action, and understand that the letter sound can be made at the beginning, middle, and end of a word. Developing an understanding of text beyond the details is another focus of the curriculum. First it creates meaning for words using the Widget Rebus System, and then it has children discuss the text as a class with peers in order to
develop a stronger understanding of how the details relate to the entire story. The lesson plans are also designed for children with possible hyperlexia, who are able to decode words easily. They learn to develop meaning beyond the decoding stage through using the same words in different learning activities, allowing for the words to have meaning within a context, such as a sentence or story. The curriculum guides teachers in creating a mediated learning experience for students by providing teachers with the strategies to organize their classrooms in order to create interactions between children with HFA and their typically developing peers. Additionally, discussions as a class and with a partner are designed to create meaning of text beyond the words and pictures on the page. The lesson plans allow for students with HFA to work alongside their peers and independently in a way where they can learn meaning through mediation, which will help them build a path to success for learning more independently in the future.

This project is comprised of a handbook which gives information about autism and meditational strategies for teachers of inclusion classrooms in California state public elementary schools. It also provides teachers with two full weeks of lesson plans and materials which include: sound cards, worksheets, flash cards, and books. It is designed to cover most of the California State Standards for English Language Arts. The first lesson of the curriculum will begin with introducing the letter B sound; it will then extend the letter sound into learning sight words using flashcards. The words learned will then be used by the students to create their own sentences and
corresponding pictures for each word in the sentence. Spelling tests will be given at the beginning and end of the first lesson to assess the student’s phonological awareness. The second lesson of the curriculum will begin with the reading of the book, *Goldilocks and the Three Bears*, followed by a discussion of detailed questions related to the story. Next, students will create their own stories and illustrations about Goldilocks with their peers. Finally, students will present their stories to the class and answer questions that their peers may have about their story. The curriculum can be applied to other letters in the alphabet and reading books in the future using the included reading and writing materials.

In addition to reading comprehension difficulties, children with HFA have deficits in developing strong social skills. In the first week students will be exposed to the letter B sounds as a group, and then they will split up into teams and finally into partners. Each student with HFA will be paired with a typically developing student in the class to work together to earn points for their team. The teacher will discuss autism with the students who are paired with the students with HFA using the book *The Boy in my Class*. Children with HFA will engage in working with a peer one on one and become motivated to complete their work because during the activity they are going to be earning stickers for themselves and points for their team. In the second week, children with HFA will be placed into a small group with three other typically developing peers. Again, students will be motivated to earn stickers for themselves and points for their teams by participating in the classroom activities. Typically
developing peers who will be paired up with the student with HFA will be receiving information about autism, and instructions from their teacher about how to be a good partner to a child with special needs. Since children with HFA are going to be paired up with a different partner each week, most of the classroom will have an opportunity to work with the student with HFA and possibly begin to build friendships outside of the classroom environment.

**Expected Positive Outcomes of Project**

Autism is becoming a well-known diagnosis in public schools today, but there is not a lot of information given to teachers about this specific disability. Included in this handbook is information on autism which provides a brief definition of autism, a general overview of all deficits seen in children with autism, and makes recommendations for teaching a child with autism. The information introduces teachers to the disability without having to research the topic on their own. Addition information is provided in the handbook that specifically discusses high functioning autism. Information on the approach and theoretical background of the English Language Arts curriculum is provided to teachers as a way of understanding their role as a mediator in the classroom. The more teachers can learn and understand about autism, the more prepared they will feel when teaching an inclusion classroom. All recommendations and suggestions given throughout the lesson plan are expected to relieve anxieties teachers might have about teaching a child with HFA in their classroom. This handbook also provides teachers with information on the different
teaching strategies which include classwide peer tutoring and constant time delay. These strategies will elicit greater participation and reading comprehension skills in students, while still focusing on teaching to the California State Standards for English Language Arts.

The curriculum provided in the handbook will benefit both students with HFA and typically developing students in many ways. Students with HFA will have the opportunity to learn with the rest of the class and participate in the same activities as their peers. Their deficits due to their disability will not hinder their ability to comprehend written text, and although it will be more difficult to participate fully in all activities, the lesson plans will be modified so that they are rewarded for doing their best. The typically developing students in the class benefit from learning more about children with disabilities through reading materials on autism with their teacher and working one on one with their classmate with HFA. Moreover, classwide peer tutoring can be a preferred way of learning for typically developing children because they are motivated to learn when working in partner pairs and in teams.

Relevance and Effectiveness of Project

Early intervention for children with autism is extremely important because children are just beginning to develop essential academic and social skills which they will need for the rest of their lives. When a child with HFA is placed into an inclusion classroom many times teachers are unaware of how to incorporate a child with special needs into their daily routine and teaching styles. This project provides teachers with
the knowledge and tools to create a successful leaning environment, not only for children with HFA but for the rest of the general education students as well. When students with HFA become more socially incorporated into the classroom environment, students and teachers become more comfortable working with the child with special needs. The success of students with HFA will be apparent in their engagement in the learning activities, ability to work one on one with other students, completing academic work, and presenting to the class what they have learned with other students. When children with HFA are not expected to perform at the same level as their peers, because their teacher does not feel confident in incorporating them into classroom activities, not only does the child suffer but the teacher suffers as well. All students are required to take the California State exams and these scores reflect a teacher’s classroom performance. This curriculum will prepare students with HFA for the state exams by increasing their reading comprehension in relation to the text which they will be asked to read and understand independently.

The effectiveness of this project is demonstrated in the successful use of classwide peer tutoring and the mediated learning experience in several research studies on children with ASD. These studies have confirmed that classwide peer tutoring and mediated learning experience show great accomplishments in increasing reading comprehension, vocabulary development, and engagement in academic activities. However, autism is a spectrum disorder and all children diagnosed with autism have their own strengths and weaknesses. They exhibit different behaviors and
respond differently to positive reinforcement. For instance, one child might become extremely engaged in activities with their partners, while others may need to be redirected several times by the teacher or assistant. Children who are placed on the ‘high’ end of the spectrum are usually placed in general education classrooms because they do not exhibit extreme negative behaviors and have average to above average IQ. Most of the time children in this category have stronger social deficits than academic. That is why this curriculum focuses not only on reading comprehension development, but social development too. Worksheets, spelling tests, assignments, and partner/team scores are all a part of assessing the child with HFA in order to see how effective the teaching strategies are in the classroom.

**Implications for Future Practice and Research**

This project is designed for elementary school teachers in inclusion classrooms, put into practice it may be extended into higher grade levels. Since each grade level is an extension of the grade before, books and materials may be used for more extensive reading and vocabulary exercises. In addition, the curriculum activities may also be extended into the home, where parents can use flashcards to study with their child. Teachers may show parents how to create their own flashcards for reading at home. For instance, when a parent is reading a story and comes across a word their child may not know the meaning of; they can make a flashcard and study the new word with their child. In terms of future research, a professional might want to explore the change in reading comprehension from when the student with HFA entered a
classroom that was implanting this project and assessed their reading comprehension level at end of the school year. If a teacher chooses to only use the teaching strategies during the two weeks of curriculum provided, then a researcher may examine any changes in the child with HFA related to class participation and test scores: before, during, and after the curriculum was implemented. Additionally, a researcher may be interested in comparing two inclusion classrooms. Examining one inclusion classroom that is using the project and teaching strategies to another similar inclusion classroom that is using the traditional teaching methods and strategies. Any of these research ideas would add to the current research on classwide peer tutoring, mediate learning experience, and high functioning autism in general.

**Limitations of the Project**

There are several limitations of the project which include time management, creation of materials for additional lesson plans, and transition for students from pictures to text. The classwide peer tutoring strategy necessitates that students spend time one on one working together with guidance from the teacher during activities. The time allotted for each activity is determined by the teacher, and may be difficult to manage in a large classroom. Teachers will also need to manage their time for discussion on the books read during each lesson. The process of establishing a set amount of time that gives students an opportunity to learn from each other while at the same time does not take away from other academic activities may be challenging for teachers to resolve.
Another limitation for the project is that it requires teachers to provide materials for their classroom that may be costly and difficult to construct. The materials in this curriculum include books, sticker cards, flash cards, etc. and not all classrooms will be provided a budget from their school district to purchase such items. Also, teachers may have to create materials to use with students which may be complicated, because finding corresponding pictures to individual words in a text is time consuming. Creating flashcards, sticker cards, and score boards are all time consuming as well, and teachers may become overwhelmed with keeping everything organize.

Lastly, children with HFA who are taught meaning through pictures may have difficulty moving up in reading level to text without picture references. As students’ progress through the elementary school years less and less pictures are used in relation to assigned readings. The discussions of the text in this project are designed to reinforce meaning beyond the pictures for student with HFA, but it does not guarantee that the children will retain this information later on in their schooling. Providing direction for parents on how to use materials at home with their child may assist in further development of word meaning for students with HFA.
APPENDIX A

Handbook for Improving Reading Comprehension and Social Skills in Children with High Functioning Autism
HANDBOOK FOR CALIFORNIA STATE
ELEMENTARY SCHOOL INCLUSION CLASSROOMS

IMPROVING READING COMPREHENSION AND SOCIAL SKILLS IN CHILDREN WITH HIGH FUNCTIONING AUTISM: AN ELEMENTARY SCHOOL INTERVENTION
Introduction

This is a handbook that a general education teacher of an inclusion classroom in a California state public elementary school can use to administer a curriculum that focuses on the development of reading comprehension and social skills for children with high functioning autism (HFA). This handbook provides teachers with information on implementing successful teaching strategies in their classrooms that are effective for engaging students with HFA and their typically developing students in English Language Arts activities.

The handbook is organized in the following manner:

1. Introduction to Autism Spectrum Disorder and High Functioning Autism.
2. Introduction to Theoretical Background and Instructional Strategies.
3. Unit summary of English Language Arts Curriculum.
4. Two weeks of descriptive and informational lesson plans.
5. Attachments of materials after each lesson plan.

The way you choose to implement the handbook’s suggestions may vary depending on the available resources and the disabilities of the children with HFA in your classroom. Copyrighted materials have been provided in this handbook with the permission of the author Ruth Jurey, and can be used in the implementation of the curriculum.
Overview of Autism Spectrum Disorder

Autism (also referred to as Pervasive Developmental Disorder or Autism Spectrum Disorder or Asperger’s Syndrome) is a developmental disability that typically appears during the first three years of life. It is the result of a neurological disorder that affects the functioning of reasoning the brain and interferes with normal brain development in the areas, social interaction, and communication skills.

Deficits of Autism

Communication:
- language develops slowly
- may have precocious language (Asperger’s Syndrome)
- words are used without attaching meaning to them
- may communicate with gestures instead of words
- short attention span
- brain processes auditory information more slowly
- no inherent benefit to social or reciprocal communication

Social Interaction:
- may spend time alone rather than with others
- may show little interest in making friends
- less responsive to social cues, such as facial expression
- difficulty initiating play or joining activities with peers

Sensory Impairment:
- unusual reactions to physical sensations such as over-sensitivity to touch or under sensitivity to pain
- responses to sights, sounds, touch, smells and tastes may be affected to lesser or greater degrees
- need for sensory input, such as swinging or deep pressure touch

Play:
- does not imitate the actions of others
- does not usually initiate pretend games
- lack of spontaneous or imaginative play

Behaviors:
- may have tantrums for no apparent reason
- may be overactive or passive
- may perseverate on a single item, idea, phrase, or word

Teaching a Child with Autism

A structured program:
A set routine is helpful. If the routine is to be changed, it is helpful if the child is informed to expect a change.

Positive reinforcement:
Children with autism may need higher levels of motivation than typical children.

Visual aids:
Visual strategies help children understand verbal directions. Written checklists, sticker charts, picture schedules, gestures, demonstrations often help children with auditory processing difficulties.

High expectations:
Many children with autism will be able to achieve great things, if they have appropriate demands and adequate support.

Neutral response to inappropriate behavior:
Don’t be afraid to work with the child. Don’t give up when you encounter a response or behavior you don’t understand. Talk to the parent or other teacher familiar with the child and work to teach the child a more appropriate response.

High Functioning Autism

The term high functioning autism (HFA) can be used interchangeably with the term Asperger’s syndrome. For this handbook the term high functioning autism will be used to describe children on the ‘higher’ end of the autism spectrum. High functioning autism is characterized by significant difficulties in social interaction and minor academic deficits with no severe impairments in language.

Elementary School Years (Church et al., 2000)

Social Skills: The social skills of children with high functioning autism are highly variable but always disorderly. Children with HFA interact with other typically developing peers usually for specific information on a topic of interest to both children. Children with HFA are considered to have ‘mindblindness,’ which means that they have the inability to take the perspective of another and misread social cues. This can often lead to inappropriate comments in conversations where children with HFA do not understand the impact of their comments made on others. Opportunities for learning and practicing appropriate social skills are needed for this population of children.

Academic Skills: The academic skills of children with HFA are well developed and some do exceptionally well in school. The difficulties which these children are confronted with the most are reading comprehension and handwriting skills. These children tend to be detailed focused and their lack of comprehension can be disguised by their ability to read and decode words at grade level.
Introduction to Theoretical Background and Instructional Strategies

The theories which support the curriculum are Vygotsky’s Mediation theory and Feuerstein’s theory on the Mediated Learning Experience. By understanding a little about each theory a teacher of an inclusion classroom can understand their role as a mediator in their students’ education. In addition, they can understand that continual interactions between students will help children with HFA to construct a deeper meaning of material presented in class.

**Vygotsky’s Mediation Theory (Kozulin & Presseisen, 1995):** Mediation theory is the idea that children can learn from adults and more competent peers through their interactions. Mediation occurs when children are first introduced to a new concept, word, or idea by their teacher. Then, they discuss the material being taught as a class. Finally, children internalize the meaning of what they learned and can use it in similar situations. For instance, when a teacher introduces new vocabulary words to the class, the class can discuss the meaning of the words, and then students will have the ability to understand and use the new words in different contexts. It is important to create meditational opportunities in the classroom for children of all abilities to be able to gain a deeper understanding of the meaning of the material that is taught.

**Feuerstien’s Mediated Learning Experience (Kozulin & Presseisen, 1995):** Feuerstien’s mediated learning experience (MLE) also focuses on the importance of having a mediated agent, such as the teacher in a classroom. The mediated agent is responsible for selecting and organizing the world of stimuli for the child in order to
transform students from passive recipients into active generators of their own learning. In other words, dialogue occurs several times between teacher and students instead of the teacher lecturing the students and only answering direct questions. MLE was based on studies conducted on children with learning disabilities and has been proven as an effective way of developing cognitive skills.

The teaching strategies that will be used in the curriculum are classwide peer tutoring and constant time delay. Each of these strategies allows for meditational opportunities to exist in an inclusion classroom. Typically developing peers work with children with HFA on English Language Arts activities, and students are able to create meaning on the words in the context together. This is effective for children with HFA because they become more engaged in the material and can generate their own ideas about concepts with the guidance of their peers.

**Classwide Peer Tutoring (Kamps et al., 1994):** Classwide peer tutoring (CWPT) was developed by the Juniper Gardens Project as a teaching strategy that is used to improve academic achievement in students who have mild learning disabilities. CWPT is an effective instructional approach that spontaneously engages students with the curriculum content through reciprocal peer tutoring, competing teams, immediate error correction, reciprocal tutoring procedures, and contingent point earning. Students with HFA benefit from CWPT because while they work on academic tasks with their peers, they practice engaging in appropriate and meaningful conversations, which helps them to develop stronger social skills.
**Constant Time Delay (Hughes & Fredrick, 2006):** Constant time delay is where teams are developed based on strength of academic skills, and children with strong academic skills are paired with children with lower academic skills. Children are given flashcards to work on either their spelling or vocabulary skills. The first time a flashcard is presented there is a 0-second delay, where the word is read or a definition of the word is given. Afterwards, a 5-second delay is given between the displaying of the word on the flashcard and when the word is said or the definition is read and the word being shown, giving the chance for the students to respond with the correct word or definition that matches what is on the flashcard. During these activities there is contingent point earning and posting of individual team performances based on their progress related to memorizing the spelling or definition of words.

These theories and teaching strategies used in the curriculum specifically help children with HFA by creating a stimulating environment where they can engage in the learning material and in meaningful conversation with their peers. Children with HFA are placed in general education classrooms where teachers may feel that these children would do better working independently or lack the ability to engage in the learning material with the rest of the class. Vygotsky and Feurenstien theorized that all children have the ability to create meaning through mediation. Children with HFA are no exception and they too benefit from working in an environment where they can develop their academic and social skills.
Unit Summary of English Language Arts Curriculum

**Grade:** Grades K-5

**Subject:** Handwriting, Sight word reading, Spelling, Reading Comprehension, Arts and Creativity, and Social Development

**California State Standards:**

- Reading and Standards for Literature: Key Ideas and Details, Craft and Structure, Integration of Knowledge and Ideas.
- Reading Standards for Informational Text: Key Ideas and Details, Integration of Knowledge and Ideas.
- Writing Standards: Production and Distribution of Writing
- Speaking and Listening Standards: Comprehension and Collaboration, Presentation of Knowledge and Ideas
- Language Standards: Conventions of Standard English, Vocabulary Acquisition and Use

**Skill:** Reading Comprehension and Social Skills

**Duration:** 2 Weeks

**Overview**

- Students will learn how to have *Fun with the Letter B!* in reading, writing, and spelling activities.
- Students will learn about *Adventures with Goldilocks!* when reading and creating their own stories about Goldilocks.
Objective

Students will:

- Learn about beginning, middle, and ending letter sounds.
- Work together in tutoring pairs to earn points for their team.
- Answer questions about reading material and discuss details of the story.
- Write sentences and paragraphs using spelling words and creative writing.
- Build relationships with peers in their class with special needs.

Lesson Plans for this Unit

Lesson One: Fun with the Letter B!

Attachment A: The Boy in My Class, by Jamie Owen-DeSchryver, M.A.
Attachment B: Playful Sounds Card for Letter B
Attachment C: Handwriting exercise for Letter B
Attachment D: Sight Word Flash Cards

Lesson Two: Adventures with Goldilocks!

Attachment E: Goldilocks and the Three Bears by Candice Ransom, modified by Ruth Jurey
Attachment F: Picture with Paragraph worksheet

Supporting Books

Bernard, Me, and the Letter B, by Cynthia Klingel and Robert B. Noyed

Goldilocks and the Three Bears, by Candice Ransom and Edited by Ruth Jurey
LESSON ONE

Fun with the Letter B!

OBJECTIVE

Students will:

- Recognize the letter B sound and at the beginning, middle, or end of a word.
- Print the upper- and lower case letter B.
- Learn about the Widgit Rebus System, where pictures are paired with words for better reading comprehension.
- Work with a partner and in teams to learn sight words and word meanings.
- Learn to decode and spell five spelling words.
- Use singular and plural nouns with matching verbs in basic and complete sentences.
- Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing a sentence.
- Use sentence-level context as a clue to the meaning of a word or phrase.

MATERIALS

- Playful Sound Cards: Letter B
  Author: Ruth Alice Jurey, M.S., C.C.C., Speech & Language Pathologist
  Publisher: The Reading Treehouse: AdvancedAbility
  Copyright: 2009

- Letter B handwriting worksheets

- Book: Bernard, Me, and the Letter B, Alphabet Friends
  Author: Cynthia Klingel and Robert B. Noyed
  Publisher: The Child’s World
  Copyright: 2004
• Book: The Boy in my Class
  Author: Jamie Owen-DeSchryver, M.A.
  Copyright: Unpublished Manuscript

• Index Cards

• Poster Board

• Stickers

• Crayons

• Blank sentence strips

SET UP AND PREPARE

• Make enough bunny and bird cards to separate classroom into two teams and place the cards into a box where students can reach in and choose a card without seeing.

• Have a poster board ready to create a chart for tallying team points.

• Review brochure titled: Introduction to Autism Spectrum Disorder

• Read the book, The Boy in my Class. Think of ways, which are comfortable to you, to introduce high-functioning autism (HFA) to students who will be partnered up with children with HFA.

• Make copies of handwriting worksheets for each student in the class.

• Have Playful Sound Cards for Letter B ready, and review back of card.

• Make enough flashcards for the words: baseball, bat, bike, beach and balloon for each pair of students from the back of the book, Bernard, Me, and the Letter B.

• Organize stickers and large index cards with student’s names on them. Partners will use these cards to reward each other for progress and correct answers.

• Think of additional ways that you can reward partners and teams for working together.

• Prepare a spelling pre-test and post-test for the five words used on the flashcards.
DIRECTIONS

Day 1

Step 1: Explain to students that they are going to be dividing into two teams by either selecting a bunny or a bird from the box which you have created.

Instructions: Set up rules before having students choose a card, such as: no trading cards, only one pick out of box (no re-dos), and wait until everyone has a card before getting into teams.

Step 2: Once every student has a card, divide them into two groups and record who are in the bunny group and who are in the bird group.

Step 3: Create a chart which will keep track of each group’s total points at the end of each day, then hang in the front of the class for all students to see.

Step 4: Once the groups have been assigned and recorded place the students in tutoring pairs. Have students move their desks so that they are sitting with their assigned partner, they will stay in these assigned seats for the whole week. Pass out individual index cards for students to place their stickers on as they earn them in their partner pairs.

Instructions: Think about which students are most likely to work well together and can best mediate each other’s learning. Monitor ongoing performance to ensure that everyone is making adequate progress, and if all students are performing well than partners stay the same for the rest of the week (Maheady & Gard, 2010).

Step 5: Select partner pairs that will be working with the children in your class with HFA. Ask these students to stay in during a class break to read them the book The Boy in my Class.

Instructions: During the class break introduce autism to the students who will be working with the children with HFA by reading the story, The Boy in my Class, by Jamie Owen-DeSchryver. Talk about their roles and responsibilities of being partners to a child with special needs and prepare them for working with their partners successfully.

Step 6: Pass out paper for spelling pre-test. Read the five words from the spelling list for students to spell independently: baseball, bat, bike, beach, and balloon.
Day 2

Step 1: Have students sit in a group, as if they were doing a circle time activity, and introduce the letter B sound using Playful Sounds speech cards (Jurey, 2009).

Instructions: Display the speech card to students with the picture of the bouncing ball facing them, and the letter sounds facing you. Have the children repeat after you the sound of the letter B ‘buh’ with optional gesture. Describe to the students what a beginning, middle, and ending sound are and continue to read aloud the different list of words while the children repeat after you emphasizing the letter B sound in each word.

* At this time, if the child with HFA is not repeating after you the sounds of letter B, or the words while sitting in the group, do not give direct attention to them and ask them to do so. As long as they are sitting with the group they are able to hear the letter sounds, attend, and participate when they are available to do so. In addition, all students will be practicing the letter B sound with their peers later on in the lesson.

Step 2: Ask students to give examples of words that have the letter B as a beginning, middle, and ending sound.

Step 3: Students will return to their seats for handwriting practice.

Instructions: Distribute the handwriting worksheet to each student. Describe to students that they are going to be using the stickers for their partners during the handwriting activity. Once each page of handwriting worksheets is complete the tutor will give the tutee one sticker for the page being complete and another sticker for neatness.

* For the child with HFA, handwriting can be a difficult task because it is a fine motor activity which may be difficult for children with HFA to complete neatly. Check in on the child and see if their partner has given stickers for neatness. If they did not, but the handwriting worksheets are complete, direct the student to give stickers to the child for neatness as well as for completing the task because they participated in the activity.

Day 3

Step 1: Students can either sit as a group similar to the day before, or stay in their seats while the book, Bernard, Me, and the Letter B is read aloud. As the book is read aloud point out to the students how pictures directly above certain words are used to show the meaning of the words. Explain that the pictures are mostly used for words that are nouns: a person, place, or thing.
Step 2: At the back of the book there is a list of words that begin with the letter B. Review these words and ask students to explain what they think each word means and how to use it in a sentence.

Step 3: Pass out index cards and stickers to students, the stickers will be used for the tutor to reward the tutee in the next activity.

Step 4: When students are settled, pass out one set of pre-made flash cards with sight words and pictures to each partner pair.

Instructions: The activity of learning the sight words will be conducted using constant time delay (CTD). The procedures for CTD described by Hughes and Fredrick (2006) are:

1. Introduce: Explain the concept that 0-sec delay means that the tutor will show the card to the tutee and instantly tell them what the word says by looking at the picture on the back of the card.
2. Model: Demonstrate with a student while verbalizing each step, model correct and incorrect answers. Stickers will not be awarded during the 0-sec delay exercise.
3. Guided practice/student as learner: Tell students to practice the 0-sec delay with their partners, taking turns role playing as the tutor and tutee. Ask tutees to randomly provide incorrect answers so that the tutor can practice error correction procedures. Monitor the students’ behaviors and provide immediate feedback for both the tutors and tutees.
4. Model 5-sec delay: Show students the 5-sec delay procedure while verbalizing each step. Instruct students to count silently 1-banana, 2-banana, up to 5-banana to wait the 5-sec time delay. During the time delay the tutee has the chance to read the word correctly and earn a sticker for themselves.
5. Guided practice/student as learner: Ask students to practice with their partners the 5-sec delay procedure, taking turns role-playing as the tutor and tutee. Have the tutor show the word to the tutee, allow for 5-sec to pass before the partner says the word aloud. The tutor will award the tutee one sticker if they are able to correctly read the word within the 5-sec delay. Monitor the students’ behaviors and provide immediate feedback for both the tutors and tutees.

Step 4: Allow for all students to play the game with the flash cards until everyone has had a chance at reading the words correctly during the 5-sec delay.

Note: This activity can be used for future sight word recognition activities or vocabulary exercises where the word is on one side of the flash card and the definition is on the other.
Day 4

Step 1: Allow ten minutes for students to get into partner pairs and practice their sight words using constant time delay with a 0-sec and 5-sec delay. Have students only award each other stickers for correct answers during the 5-sec delay.

Step 2: Separate students into their two teams, bunnies and birds. Assign each team five words from the list of B words in the back of the book, *Bernard, Me, and the Letter B*. You can include words that are not being practiced for the spelling test.

Step 3: Have each team spend fifteen minutes discussing and creating sentences for each word. If a team is having difficulty coming up with a sentence for a word offer some example sentences which might help them to think of one on their own.

Step 4: Tell each teach team to choose a representative that will share with the entire class their five sentences. Write these sentences on the board as the student is sharing them aloud. Award team points at this time for correct use of the word in a sentence. Give points for creativity and length of sentence which will encourage students to think about creating a complete sentence.

Day 5

Step 1: In their partner pairs, have students choose one sentence from their teams list of five sentences from the day before.

Step 2: Instruct students to copy the sentence onto a piece of paper leaving room at the top of the sentence where pictures will be drawn.

Step 3: Once the students have copied their sentences onto the sentence strip ask them to draw a picture for each of the words in the sentence. They can make up symbols that represent words that are not nouns and make sense to them. Walk around the classroom giving points to teams as they work together on this activity.

Step 4: When the students are finished with copying their sentence and making corresponding pictures, have each student present their sentence to the class. Give points for each partner pair that presents their sentence strip to the class.

Step 5: Pass out paper for the spelling post-test. Read the five words from the spelling list for students to spell independently: baseball, bat, bike, beach, and balloon.
Step 6: Review team points and give out awards for the team with the most points. Review individual sticker cards and give out awards for the students with the most stickers.

SUPPORTING LEARNERS WITH HIGH FUNCTIONING AUTISM

Children with HFA have difficulty with reading comprehension and need early intervention starting in the first grade. One way to assist children with reading comprehension difficulties is to pair visuals with words so that children are not only learning how to pronounce a word but they are using the pictures to remember and understand the meaning of words. Having the ability to create pictures corresponding with words, and then using those words within a sentence, give words a further contextual meaning. These classroom activities will aid children with HFA in building stronger reading comprehension skills.

Additionally, placing children with HFA into partners for classroom activities allows for them to have more direct learning opportunities with their typically developing peers. They are able to work on building stronger social skills through collaborating with their peers on academic activities and getting involved in classroom discussions. Ultimately, the environment of the classroom allows for children with HFA to develop into active participants of the learning community. Earning stickers during partner activities for correct answers is also extremely motivating and rewarding for children with HFA, it helps them to focus on the task at hand and be rewarded instantly for doing well academically and working well with peers.

HOME CONNECTION

Have students take home their sentence and create a longer paragraph story with their parents as homework. They can draw one large picture at the top of the paper which depicts what is happening in the story. This will assist students in bridging their single word pictures to multiple words for one picture.

ASSES STUDENTS

Where students able to successfully learn sight words through Constant Time Delay? Did all students work well with their partners, or do new partners need to be assigned? Were the sentences created using sight words correct in their context? Do students understand beginning, middle, and end letter sounds, could they give examples of each? Did students with HFA have an increased score on their spelling test?
REFERENCES


Owen-DeSchryver (2002). *The Boy in my Class.* Unpublished manuscript, Grand Valley State University, Allendale, MI.
Today was the first day of school. I saw many children I remembered from last year.

But there is also a new boy in my class. His name is Joshua. He has his own teacher who works with him.

During morning circle, Joshua didn’t want to talk about what he did this summer. His teacher tried to help him, but Joshua just kept saying, “look, it’s a fire engine!” Only there wasn’t a fire engine.

During play time, Joshua built a tower next to me. Sometimes he stopped building and jumped up and down. He flapped his hands and wiggled his fingers, and looked very happy.

Just when I finished making my skyscraper, Joshua knocked it over. I was a little sad. Joshua was very angry when his teacher took him to play someplace else. He screamed and cried very loudly. I felt bad for Joshua.

Later that day, Joshua left the classroom with his special teacher. My teacher asked us to sit in a circle in the listening corner so we could talk. He said that Joshua is a very nice boy who likes to color and watch cartoons just like we do. He is very good at puzzles and he also likes to talk about fire engines.

Sometimes, if Joshua is mad, he yells and cries because he doesn’t know how to calm himself down. We should keep doing our work and try not to look at Joshua when he’s mad because this might make him more upset.

My teacher said that we are Joshua’s helpers. We can talk to Joshua every day, and invite him to sit next to us during circle time and snack time. We can play with him on the playground, and choose him to be on our teams.

Sometimes we will have to ask Joshua questions more than one time because he might not understand us the first time. Sometimes we will have to remind Joshua to look at us because he doesn’t always remember to look at people’s faces. “The important thing,” my teacher said, “is to be Joshua’s friend.”
Joshua came back to class and we all had choice time. Meredith asked Joshua if he wanted to do a puzzle with her. Joshua was very good at putting the puzzle together. He didn’t need any help from the teacher at all, even with the hardest pieces!

When it was time to go on the bus, I said, “Bye Joshua!” At first he didn’t answer me, so I said, “see you later Joshua!” Joshua’s teacher helped him wave and say “good-bye,” but Joshua didn’t look at me. He just said, “play with the fire engine!” Then he picked up his backpack and walked to the bus with his teacher.

When I saw my mom at home, I told her that I had a good first day at school. I said, “Tomorrow I’m going to bring my toy fire engine to school to show my new friend Joshua.”

I put my fire engine in my backpack right then so I wouldn’t forget it.

THE END
Attachment B

Playful Sounds Card for Letter B

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Attachment C

Handwriting Exercise for Letter B

Name:

The Letter Bb

B

B

B

B

B

B
The Letter Bb

Name:

b b b b b b b b
b b b b b b b b
b b b b b b b b
b b b b b b b b
b b b b b b b b
Attachment D

Sight Word Flash Cards

- beach
- bat
- balloon
- bike
- baseball
LESSON TWO

The Adventures of Goldilocks!

OBJECTS

Students will:

- Identify words and phrases in stories that suggest feelings or appeal to the senses.
- Identify who is telling the story at various points in a text.
- Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
- Use the illustrations and details in a text to describe its key ideas.
- Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- Use illustrations and details in a story to describe its characters, setting, or events.
- Compare and contrast the adventures and experiences of characters in stories.
- Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and large groups.

MATERIALS

- Book: Goldilocks and the Three Bears
  Author: Candice Ransom
  Publisher: School Specialty Publishing
  Copyright: 2002
  Text edited by: Ruth Alice Jurey, M.S., CCC., Speech & Language Pathologist
- Story writing paper with drawing box
SET UP AND PREPARE

- Print and copy story writing paper with drawing box for each student.
- Make enough Goldilocks and bears cards to separate classroom into two teams and place cards into a box where students can reach in and choose a card without seeing.
- Have a poster board ready to create a chart for tallying team points.
- Prepare to discuss autism with students who are paired with children with high functioning autism (HFA) in the class.
- Organize stickers and large index cards with student’s names on them, which partners will use to reward each other for progress.
- Think of additional ways that you can reward partners and teams for working together successfully, as to motivate students to use stickers and points correctly.
- For this week, partners will consist of groups of four students instead of two because small group discussions will occur for activities.
- Review handout on How to Create a Mediated Learning Experience.

DIRECTIONS

Day 1

Step 1: Explain to students that they are going to be divided into two teams by either selecting a picture of Goldilocks or a picture of a bear from the box.

Instructions: Set up rules before having students choose a card, such as: no trading cards, only one pick out of box (no re-dos), and wait until everyone has a card before getting into teams.

Step 2: Once every student has a card, divide them into two groups and record who are in the Goldilocks group and who are in the bear group.

Step 3: Create a chart which will keep track of each group’s total points at the end of each day, then hang in the front of the class for all students to see.
**Step 4:** Once the groups have been assigned and recorded, place the students in tutoring groups of four. Set up desks so that two children are facing two other children. Pass out individual index cards for students to place their stickers on as they earn them in their groups.

**Step 5:** Select a group of three partners that will be working with the student in your class with HFA. It is best to place only one student with special needs in a group with other typically developing peers. Ask the students in the group to stay in during a class break to read them the book, *The Boy in my Class*, by Jamie Owen-DeSchryver.

Instructions: During the class break introduce autism to the students who will be working with the children with HFA by reading the story, *The Boy in my Class*, by Jamie Owen-DeSchryver. Talk about their roles and responsibilities of being partners to a child with special needs and prepare them for working with their partners successfully.

**Day 2**

**Step 1:** Have students sit in their groups of four at their desks. Show the first page of the book, *Goldilocks and the Three Bears*, to the class and explain to the students that the same system of pairing pictures to words was used in this book, just like the sentences created by them the week before. Explain how the pictures in this book use pictures for all the words, including verbs, adjectives, and nouns. Point out the main picture for the entire text on the page and explain that the main picture illustrates the scene of the entire text on the page.

**Step 2:** Read aloud the book to the class. Tell students that if they have any questions about the reading that they can raise their hand and ask them. Clarify any information in the story that is not understood by the students.

*The visuals in this book are designed to capture the attention of children with HFA. It may help to make copies of this book to pass out to each student in the class so that they can follow along at their desks as you read.

**Step 3:** Once you have completed the story write these questions on the board:

1. From whose point of view was this story told?
2. What information could you gather from the pictures in the story?
3. Describe characters, settings, and events.
4. How was the experience of Goldilocks the same and different from that of the three bears?
5. How did Goldilocks feel at the beginning, middle, and end of the story?
Ask students to spend about ten to fifteen minutes discussing these questions in their groups. Walk around the classroom to ensure that students are talking about the story and including everyone in their group in the discussion. Allow for students to depend on each other’s thinking to enrich their understanding of the text and construct their own meanings of the text (Nichols, 2006). Award stickers to teams who are working well together, and be sure that the children working with the student with HFA are including them in the discussion by asking them what they think about the story.

* The student with HFA may have difficulty participating fully in a small group discussion. Any participation by the child with HFA should be rewarded. Having a student in their group assigned to award the child with HFA with a sticker for participating in the discussion may motivate that child to participate even more.

**Step 4:** Tell students that it is time to share what each group came up with for their answer.

Instructions: Explain that no answer is incorrect, it is only a reflection of their understanding of the story and that together we will create a more complete understanding of the text. Begin with question number one and call on each group to answer the question. Award points to teams for answers that were well thought out. Remember that it is important to create a Mediated Learning Experience where all children feel comfortable sharing their thoughts and interpretations of the story. Allow for students to speak freely, disagree with each other, and continue to create meaning through their conversation about the story.

**Day 3**

**Step 1:** Distribute story writing paper with picture box to each student. Explain that they are to come up with their own adventure for Goldilocks. Tell them to think about and write down the characters, setting, and events of their story first. Students are free to work with their partners in coming up with creative ideas for their adventures.

**Step 2:** Once students have thought of a story they will write out three to four sentences about Goldilocks’ adventure on a scratch piece of paper. Go around the classroom and award stickers to individuals who are working together on their sentences.

**Step 3:** When students have completed writing their paragraph have them check spelling errors with you and/or another teacher assistant. After corrections are made they will copy their paragraph onto the writing paper with picture box. Remind students to write neatly for their final paper.
**Step 4:** Discuss with students how the illustrations in the book helped to understand the text and that they will be creating their own illustration for their story on the same paper. Tell students to draw an illustration in the picture box that correlates with their paragraph. Again, students may ask for help from their peers in creating a drawing.

**Step 5:** Award points to teams as they complete their paragraph and drawings. Points can also be given to groups that are cooperating and assisting other group members in their writing and drawing.

### Day 4 – 5

**Step 1:** Pick students randomly to present their paragraph to the class. Ask students to describe their picture and how they used the text to create their picture.

**Step 2:** Compare and contrast the student’s stories to the original story read at the beginning of the week. Also, compare and contrast the adventures and experiences of the characters in each of the children’s stories. Have students ask questions about the story directly to the student presenting, and have the presenter answer the questions to the best of their ability.

* When it comes time for the child with HFA to present their paragraph it is important to be patient with the time it takes for them to describe and talk about their story. Allow for the child to answer classroom questions independently as much as possible. Award points to those who ask questions as well as to the child presenting when they answer them.

**Step 3:** Award points for each student who presents their paragraph to the class. Also, award points to students who participate in the class discussion about the stories.

**Step 4:** Review team points and give out awards for the team with the most points. Review individual sticker cards and give out awards for the students with the most stickers.

**SUPPORTING LEARNERS WITH HIGH FUNCTIONING AUTISM**

Although children with HFA may be able to read the text of a story with no trouble, they most likely are having difficulty with the skill of reading comprehension. Presenting stories with pictures that correspond with each word, as well as one picture that corresponds with the full page of text assists children in creating meaning in the text as a whole. This type of reading can bridge the individual’s learning from creating meaning of words by using single word pictures, to creating meaning of multiple words using just one picture. In addition, children with HFA are able to independently
create an illustration representative of their own writing, which allows for them to further see the connection between the text and the picture. By participating in these activities students can remember how to utilize the pictures on a page while reading to create more meaning within the text.

Creating a mediated learning experience, where students use conversation to create meaning, builds strong social, academic, and reading comprehension skills. Since students can earn stickers and points for their team when they participate, students with HFA become more motivated to be a part of the conversation with their peers. Additionally, they learn to work independently to create understanding of the text which is read to them in class, and the text which they create on their own. In this environment teachers are the mediators for learning, and peers are able to assist in creating meaning and understanding of the readings for the child with special needs.

HOME CONNECTION

Have students take home their stories to share with their parents. Ask students to have parents initial their story and bring it back to class to be hung up on the wall.

ASSES STUDENTS

How well were students able to answer comprehension questions related to Goldilocks and the Three Bears? Did students create an adventure for Goldilocks that was creative and include characters, setting, and events? When asked to create an illustration to match their paragraph, were students able to do this successfully? Did the presentations create discussion within the class which compared and contrasted the made up story with the actual Goldilocks and the Three Bears book read at the beginning of the week?

REFERENCES


Owen-DeSchryver (2002). The Boy in my Class. Unpublished manuscript, Grand Valley State University, Allendale, MI.
Attachment E

Goldilocks and the Three Bears by Candice Ransom, modified by Ruth Jurey
Godlocks and The 3 Bears

The 3 Bears live in a house.

Baby bear plays in the tree.

Papa bear and mama bear watch baby bear.

3

The three bears eat cereal.

Papa bear has a big bowl.

Mama bear has a middle-sized bowl.

Baby bear has a little bowl.

The three bears sit in chairs.

Papa bear has a big chair.

Mama bear has a middle-sized chair.

Baby bear has a little chair.

The three bears sleep in bed.

Papa bear has a big bed.

Mama bear has a middle-sized bed.

Baby bear has a little bed.
Goldilocks goes in Mama bear's bed.
Too soft. No good.

Goldilocks goes in Baby bear's bed.

Good. Goldilocks sleeps in Baby bear's bed.

3 bears go home. Uh-oh.

Papa bear says, "Somebody has been eating my cereal."

Mama bear says, "Somebody has been eating my cereal."

Baby bear says, "Somebody has been eating my cereal and it's all gone."

Baby bear is sad.

Papa bear says, "Somebody has been sitting in my chair."
He is mad.

Mama bear says, "Somebody has been sitting in my chair."

Baby bear says, "Somebody has been sitting in my chair."

Baby bear is sad.
Baby bear says,

"Somebody has been sleeping in my bed and there she is!"

Goldilocks wakes up.

She is scared.

"Oh no! Bears!" says Goldilocks.

Goldilocks runs far away.

She never comes back again. The End.
Attachment F

Picture with Paragraph worksheet

Name: __________________  Date: ____________
REFERENCES


www.aability.com


doi:10.1207/s15326985ep3002_3


Owen-DeSchryver (2002). *The boy in my class*. Unpublished manuscript, Grand Valley State University, Allendale, MI.


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