12-22-2009

Literacy and Autism: Case Studies of Two Kindergarten Children, Their Teachers and Their Parents

Dana M. Monroe
Indiana University of Pennsylvania

LITERACY AND AUTISM:

CASE STUDIES OF TWO KINDERGARTEN CHILDREN, THEIR TEACHERS, AND THEIR PARENTS

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

Dana M. Monroe

Indiana University of Pennsylvania

December 2009

Indiana University of Pennsylvania
The School of Graduate Studies and Research
Department of Professional Studies in Education

We hereby approve the dissertation of

Dana M. Monroe

Candidate for the degree of Doctor of Education

_____ _____
Mary Renck Jalongo, Ph.D.
Professor of Education, Advisor

_____ _____
Anne Creany, D.Ed.
Professor of Education

_____ _____
Joann Migyanka, D.Ed.
Professor of Education

ACCEPTED

_____ _____
Timothy P. Mack, Ph.D
Dean
The School of Graduate Studies and Research

Title: Literacy and Autism: Case Studies of Two Kindergarten Children, Their Teachers and Their Parents

Author: Dana Monroe

Dissertation Chair: Dr. Mary Renck Jalongo

Dissertation Committee Members: Dr. Joann Migyanka
Dr. Anne Creany

ASD knows no boundaries in terms of racial, ethnic, economic, educational or social background; it can affect any family and any child *(*Autism Society of America, 2009). As the population struggles to understand the disorder, parents and teachers find themselves on a quest to meet the needs of children diagnosed with autism, both in the home and the classroom. In contrast to their typical peers, students with ASD are more apt to display signs of uneven development of skills that are usually the precursors to reading (Lanter & Watson, 2008). We do not know what specific oral language abilities of children with ASD may contribute to their success in reading, and the studies in this area are limited in scope and duration. Since literacy extends throughout the curriculum, it is important to understand the underpinnings of educating students with ASD and the process by which their literacy skills develop and emerge.

The concept of emergent literacy suggests that children form literacy skills at an early age due to exposure to literacy artifacts, literacy events, and responsive adults and peers (Highnam, Raschke & Kohler, 2008). This study evaluates teacher beliefs and perceptions of literacy acquisition; teacher practices in the classroom and classroom environment, the responses of students with ASD to literacy events, and the perspectives of the parents regarding literacy. By studying these elements, it is hoped that this research will further support the importance of early exposure to literacy events and

advance the teaching practices for the student with ASD. These elements were examined by interviews of teachers and parents, observations of classroom practices, evaluation of classroom environment using the *Early Childhood Environmental Rating Scale-Revised,* and artifacts of student work during literacy events.

The results from this study demonstrated that there are key strategies and practices that are important to the literacy acquisition of students with ASD, the classroom environment is significant to the student with ASD, the teacher and parent beliefs influence the acquisition of literacy in the home and classroom, and the artifacts of students work can serve as a verification of literacy acquisition in students with ASD.

ACKNOWLEDGEMENTS

At times our own light goes out and is rekindled by a spark from another person. Each of us has cause to think with deep gratitude of those who have lighted the flame within us.

~ Albert Schweitzer

There are few times in life when a person can thank and acknowledge others in print that will live on forever. This dissertation would not have been possible without the unwavering support of my chair Dr. Mary Renck Jalongo. Although I did not anticipate allowing "life" to take me away from my personal achievement of finishing this degree, it did for a long period of time. Dr. Jalongo maintained her support for me, even though I am sure that I let her down on a number of occasions. I cannot thank her enough for her wisdom, guidance and patience. It is with this experience that I will forever hold all other professors to her standard of excellence. There is no doubt that my achievement was a result of her ability to teach. I am grateful that I was fortunate enough to be one of her students.

Another note of thanks goes to Dr. Anne Creany and Dr. Joann Migyanka who both agreed to be on my committee and offer their expertise and knowledge for this study. Finally, thank you to Dr. Kelly Heider who provided a fantastic service of copy editing with lightening speed in order for me to finish. I especially appreciated the notes of encouragement and support throughout the process.

I have little doubt that I would have been able to manage this task without the constant pick-me-ups and inspirational exchanges that so many of my colleagues, friends and family extended to me. Thank you to each of you who cheered for me during my days of weakness, insecurity, and INSANITY. Thank you for cleaning my house,

making meals for my family and supporting me regardless of what we needed. A huge thank you is in order to She-Ra Warriors Laura Vossen and Tracy Serbian for supporting me and cheering me on through each day. Additionally, thank you to Stephanie Hall who remained steadfast in her belief that I could accomplish this goal and continually prodded me with positive thoughts.

Thank you to my parents who, by example, taught me to work hard and to do the right thing. Their support for me to finish this degree never diminished and I know they were proud of me prior to this and SUPER proud now! I would thank you from the bottom of my heart, but for you my heart has no bottom ~author unknown.

There are almost no words to adequately show the love and appreciation I have for what my husband Travis and children, Laney and Briley, have done for me in order to accomplish this goal. Thank you to my best friend and husband Travis for his constant support, both for becoming Mr. Mom in my absence and for being my biggest fan. You have helped me to my feet more times than I can count, and without you I would be lost.

I love you

Not only for what you are

But for what I am

When I am with you

~Roy Croft

There are inevitably moments in life where a spotlight shines on how lucky a person is to be surrounded by those who love and support them. There has been no greater moment in my lifetime where I can see so clearly. I am so very blessed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

THE PROBLEM

Statement of the Problem

Autism Spectrum Disorder (ASD, Autism) knows no boundaries in terms of racial, ethnic, economic, educational or social background; it can affect any family and any child *(*Autism Society of America, 2009). Furthermore, because there is no definitive biological test or marker for autistic spectrum disorders, an accurate diagnosis is dependent on behavioral assessments that are observations and historical reports. These methods often rely on data from multiple sources including parents, health professionals and teachers. Knowledge of ASD is growing as research examines more and different sides to the disorder. As the population struggles to understand the disorder, parents and teachers find themselves on a quest to meet the needs of children diagnosed with autism, both in the home and in the classroom. ASD typically appears in the first two years of life (Autism Society of America, 2009). Currently, researchers don't know the exact number of people diagnosed with autism in the United States. The Autism and Developmental Disabilities Monitoring Network (ADDM) is a group of programs funded by the Centers of Disease Control (CDC) that determines the number of people with Autism in the United States. According to the ADDM, the average autism spectrum disorder prevalence was 6.7 per 1,000 in 8 year olds in 2000 and 6.6 per 1,000 in 8 year olds in 2002 in several areas of the United States. Approximately, 1 in 91 children in the United States have ASD, and the numbers are increasing internationally as well (CDC, 2009; Belfer, 2008; World Health Organization, 2006). Autism is the fastest growing developmental disability with an annual cost of $90 billion in research, education and healthcare. It is estimated that in ten years, the annual cost

will be $200-400 billion (CDC, 2007). With the rise in prevalence and cost it is apparent that there is a need for further research.

Autism is a complex developmental disability that is the result of a neurological disorder that affects the functioning of the brain. Autism impacts development in the areas of social interaction and communication skills. Both children and adults on the autism spectrum typically show difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities (Autism Society of America, 2009).

To date, there is no cure for autism, but sometimes, children with ASD make so much progress that they no longer show the full manifestation of the syndrome of autism when they are older. Autism is considered treatable; indeed, a wide variety of treatments, and techniques are claimed to help (or even cure) people with autism, and new ones are invented regularly (Autism Society of America, 2009). Today the picture is brighter and some research shows that early diagnosis and interventions delivered early in life, such as in the preschool period, are more likely to result in major positive effects on later skills and symptoms (NICHD, 2009). Evidence shows that early intervention results in much more positive outcomes for young children with autism (Maurice, 1998; Sundberg & Partington, 2000). While various models emphasize different program components, all share an emphasis on early, appropriate, and intensive educational interventions for young children. The Center for Disease Control (CDC, 2007) estimates that the cost of healthcare and education throughout the lifespan of a person with ASD can be reduced by two thirds with early diagnosis and intervention.

Because children with autism experience the most difficulty in communication and the fact that language is a social and cultural artifact, effective instruction in the language arts

is uniquely challenging (Maurice, 2004). In contrast to their typical peers, students with ASD are more apt to display signs of uneven development of skills that are usually the precursors to reading (Lanter & Watson, 2008). We do not know yet what specific oral language abilities of children with ASD may contribute to their success in reading, and the studies in this area are limited in scope and duration. Lanter and Watson, suggest a number of key strategies in promoting literacy in children with ASD: (a) avoid reading readiness models, (b) engage in shared book readings, (c) encourage story retelling, (d) create dialogue around storybooks, (e) teach literacy in natural contexts, (f) label objects to promote sight word recognition; and (g) use the language experience approach (2008). Although many individuals with autism are able to demonstrate skills that are directly related to literacy, they are often seen as " too cognitively impaired" or "not ready for" instruction in this important area (Mirenda, 2003). Teachers and administrators around the United States have concerns about the adequacy of their literacy instruction for this population and are actively seeking out means to adapt and learn how to sufficiently instruct children with ASD (Baron-Cohen, 2008; Koppenhaven, Pierce & Yoder, 1995;).

Students with ASD are increasingly being included in general education classrooms where attainment of literacy skills is a high priority (Simpson, Boer-Ott & Smith-Myles, 2003). The Individuals with Disabilities Education Improvement Act (IDEA) in 2004 requires schools not only to give students with disabilities access to the general education curriculum but also to help those students achieve the academic standards specified in that curriculum (Lanter & Watson, 2008). Furthermore, it is both important and necessary that teachers and administrators have an active role in supporting classroom literacy instruction, collaboratively helping students with ASD achieve curriculum standards; prepare for

standardized tests of literacy (as required by the No Child Left Behind Act of 2001); and ultimately achieve higher levels of success in academics, employment, and other life skills (Catts, Adolf & Weismer, 2006).

By studying the acquisition of literacy of children with autism, teachers may be able to devise individualized curricula that will be helpful to all teachers who educate this population. In addition, teachers may be able to better meet the individual needs of each student by learning new pedagogical techniques. Past research suggests that the likelihood of persons with ASD becoming literate depends not only on research to develop and implement appropriate techniques, but also on documentation of the literacy abilities in this population, and this theory continues to hold true three decades later (Pierce & Porter, 1996; Young, 2009).

Background

Research reports of the last decade have emphasized the longitudinal relationship between preschool-age children's performance on measures of print knowledge and their later achievements in skilled reading (National Early Literacy Panel, 2004; Storch & Whitehurst, 2002). The term "emergent literacy" was first used by Clay (1966) to describe pre-reading behaviors of children. Since that time, our understanding of the relationships between reading, writing, and oral language has popularized the term "emergent literacy" (Teale & Sulzby, 1986). Emergent literacy has been defined as the "reading and writing knowledge behavior of children who are not yet literate" (Justice & Kaderavek, 2002, p. 8). It is believed that over time, children benefit most from their exposure to literacy events and activities (Highnam, Raschke & Kohler, 2008). A print-rich environment is common to the experience of most children growing up in homes where parents are literate. Reading to

young children appears to influence their language development as well as their later ability to learn to read (Hood, Conlon & Andrews, 2008). Among other benefits of reading to young children is that they often appear to become better listeners (Justice, Bowles & Skibbe, 2006). Listening to stories may also help children develop better thinking skills. That is, as they think about the stories they hear, children learn about logical thinking, cause-and-effect relationships, and sequencing. Stories broaden children's experiences and help them develop rich "imaging" abilities. They also enable children to begin to understand the feelings of others (Smith, 1986).

Educators are just beginning to recognize how their perceptions as teachers determine the literacy opportunities presented to children, how much exposure they receive, how long it is offered, and how much is expected by school peers and families (Baron-Cohen, 2007). There are still many apprehensions and concerns felt within the school community as students with disabilities are fully included into general education classrooms. Although many individuals with autism are able to demonstrate skills that are directly related to literacy, they are often seen as, " too cognitively impaired" or "not ready for" instruction in this important area (Mirenda, 2003). Research and literature illustrates that teachers will become more comfortable and positive about including students with disabilities in the classroom as they are themselves able to gain first-hand experiences. Teachers who integrate and communicate more frequently with children with autism may change their values and beliefs to be consistent with an inclusive school philosophy (Harding, 2009).

Purpose of the Study

All children do not learn the same way on the same day. Are teachers setting appropriate standards for the language learning of children with ASD? Do young children with autism fail to demonstrate literacy because they receive far less exposure to it than they need in order to learn how to read? Have young children with autism had authentic literacy experiences, or did the educational system decide very early that they would learn less than other children and then act upon those dire predictions?

This research will attempt to show how the perceptions of teachers influence the learning outcomes for a child with autism, specifically in the area of literacy. Literacy is every form of reading, writing, speaking, listening and thinking; it is essential for academic and social success and can be supported in every language our students use to express themselves (Ruble & Dalrymple, 2002). The perceptions of teachers on literacy acquisition are an important aspect to explore because they not only affect the way in which children with disabilities are taught but, also have lifelong consequences of adjustment and achievement.

The challenge of providing appropriate and effective language arts instruction for children with autism demands extraordinary skill and commitment from contemporary teachers in inclusive settings. Special education teachers, general education teachers and paraprofessionals all report feelings of inadequacy with regard to their training to meet the needs of students with disabilities (Lohrmann & Bambara 2006; Scheuermann, Webber, Boutot & Goodwin 2003; Giangreco, Edelman & Broer, 2001). When an educational task is within a child's zone of proximal development, this means that the child understands the nature of the task (Basil & Reyes, 2003; Vygotsky, 1987); children with autism require unique instruction with individualized attention. Additionally, their zone of development

may be far more regressed than the typical student; therefore, they may have little understanding about a required task.

Teachers who are deficient in specialized training for the student with ASD will likely struggle finding the right format and approach that fosters success and achievement for the ASD student. Historically, literacy instruction (including reading and writing) for students with developmental disabilities has been underemphasized. However, literacy must be an instructional priority if students with developmental disabilities are to achieve desired post-school outcomes and make progress, even within a functional framework of curricula (Browder, Wakeman, Spooner, Ahlgtim-Delzell & Algozzine, 2006).

The purposes of this qualitative case study are to: a) examine two kindergarten teachers' beliefs about literacy acquisition in young children with autism, b) identify pedagogical strategies that two kindergarten teachers used to foster literacy skills in children with autism and, c) analyze student work collected by kindergarten teachers that was designed to foster literacy growth. It is hoped that this research will: 1) reveal some of the ways kindergarten teachers support the literacy growth of young children with autism, 2) discover appropriate and effective methods and adaptations so that other teachers may adopt these practices, and 3) present an argument for teacher self-efficacy as a key element in fostering the communication skills of students with autism.

Acquiring an understanding of the processes by which children with autism learn literacy skills will allow educators to better meet each child's needs. The number of children with a diagnosis of autism is on the rise. In addition, the research supports the contention that early intervention gives this population a better chance at literacy (Baron-Cohen, 2008). Children with autism, as with many other developmental disorders, have the best outcomes

when there is early identification and intensive intervention (Samms-Vaughan & Franklyn-Banton, 2008). The concept of emergent literacy allows children to form literacy skills at an early age due to early exposure to literacy artifacts, literacy events, and responsive adults and peers. Thus, this study seeks to find whether children with autism are capable of learning literacy skills and what types of strategies educators are using that have a significant impact on acquiring literacy.

Although there is no known cure for autism, it is suggested that early intervention makes a substantial difference in the lives of children with ASD. As educators collaborate with parents, families and professionals from various fields, no one's job among that group can be viewed as less demanding or more rewarding. As these efforts are made on behalf of young children with autism, it is important to believe that this level of commitment may lead to a less restrictive life with a more positive prognosis because of those who took the time to learn and act.

Questions to be Researched

Qualitative research is best characterized as a family of approaches whose goals are understanding the lived experience of persons who share time, space and culture (Frankel & Devers, 2000). This qualitative study includes two teachers, two sets of parents, and two children with autism and describes how they respond to one another in relation to literacy development for the student with ASD. Their time, space and culture are identified, scrutinized, and dissected in order to unearth answers that provide meaningful guidance to the pedagogy of literacy instruction for children with autism. Consequently, this study poses the following questions to enhance the future instruction for children with autism:

1. What philosophical stances, pedagogical strategies, classroom procedures, and curriculum adaptations are used by school teachers to foster literacy growth in young children with autism?
2. What do teachers report as their teaching philosophy, and to what extent is that philosophy evident in their language interactions with young children with autism?
3. How do the students and teachers interact in the classroom during literacy lessons?
4. How is the classroom set up and organized as a literacy environment?
5. What curricular adaptations do teachers make in order to meet the individual needs of a child with autism and how do they measure and modify these tools?
6. What types of literacy events occur for children with autism in the classroom?
7. What types of drawings or writings are produced by children with autism and what qualities are most expressed in these artifacts that demonstrate literacy acquisition?

Significance of Study

Ethnographic approaches were originally developed by anthropologists who were trying to understand new and unfamiliar cultures. By immersing themselves in a specific culture and systematically observing and interviewing members of a culture over time, a picture of the basic organizing principles of the culture was gradually constructed and provided the basis for comparison and theorizing (Miles, 2006). The significance of studying the complexities of children with autism is paramount to enhancing the achievement of this group of students. Each time a researcher plunges into the "culture" of autism, the disorder reveals itself, and a small piece of the mystery is uncovered. The cure, cause, and treatment of autism are still largely unknown, and this study seeks to expose some of the ambiguity of the process by which these children develop literacy skills. Acquiring an understanding of

the literacy acquisition of autistic children will allow educators to better meet each child's needs.

Limitations of the Study

Several limitations of this study should be considered when interpreting the results. There are limited environmental scales that include a specific category that evaluate a classroom environment for children with autism spectrum disorders. The use of the *Early Childhood Environmental Rating Scale (ECERS-R)* does not specifically address the population of autism. The *ECERS-R* includes a small category for evaluating a literacy environment for children with disabilities. The uniqueness of children with autism may demand specific criteria on an environmental scale that addresses a classroom literacy environment more successfully. Another limitation of this study is that the observed behaviors of the children in the classroom may not have been true representations of teacher-child interaction as children with autism are sensitive to change in their environment and could have been affected by the researcher's presence. The nature of a case study is that the population examined is often small and intimately described. This case study was designed to examine a small number of teachers, parents, and children in order to closely examine the relationship between literacy acquisition and students with ASD.

Definition of Terms

Autism Spectrum Disorders (ASD or Autism)- ASD is a spectrum disorder that falls under the umbrella of Pervasive Developmental Disorders (PDD). ASD includes: Asperger syndrome, Retts Syndrome, Autism, Childhood Disintegrative Disorder and PDD NOS. ASD occurs in young children before the age of three years that is characterized by unresponsiveness to social interactions, impairments in the area of language, and

inappropriate responses to environmental surroundings (American Psychiatric Association, 2009). For the purposes of this study, the terms Autism Spectrum Disorder, ASD, and Autism will be used interchangeably and are to be considered to be describing the same condition. Both students involved in this study are diagnosed with Autism.

Literacy events- any activities that involve the reading or writing of print (Osborne & Lehr, 1998).

Inclusion- the belief that a child with a disability can learn in a regular education classroom and should therefore be educated in one to the greatest extent possible (Wade, 2000).

Individualized Education Plan (IEP) - a written plan that gives specific instructions for special education programs and services that a child with a disability will receive (Mancuso, Stotland & Rieser, 1999).

No Child Left Behind Act (2001)- a federal act and mandate that was adopted to strengthen accountability for results, increase freedom for states and communities, improve education methods, and give more choices for parents (Young, 2009).

Pervasive Developmental Disorder-Not Otherwise Specified(PDD-NOS)- severe and pervasive impairment in the development of reciprocal social interaction or verbal and nonverbal communication skills, or when stereotyped behavior, interests, and activities are present, but the criteria do not meet the criteria for autistic disorder (Diagnostic and Statistical Manual of Mental Disorders-IV, 2000)

Self-efficacy- people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves, and behave (Bandura, 1994).

Teaching Philosophy- A teacher's belief system about her or his professional role, how children learn, and effective instructional techniques (Stipek, 1998).

Summary

The number of children with a diagnosis of autism is on the rise. In addition, research supports the contention that early intervention gives this population a better chance at attaining higher levels of literacy (Baron-Cohen, 2008). Children with autism, as with many other developmental disorders, have the best outcomes when there is early identification and intensive intervention (Samms-Vaughan & Franklyn-Banton, 2008). The concept of emergent literacy suggests that children form literacy skills at an early age due to exposure to literacy artifacts, literacy events, and responsive adults and peers (Highnam, Raschke & Kohler, 2008). This study seeks to evaluate teacher perceptions of literacy acquisition; teacher practices in the classroom, the responses of students with ASD to literacy events in the classroom, and the perspectives of the parents of children with ASD regarding literacy acquisition. By studying these key elements, it is hoped that this research will further support the importance of early exposure to literacy events and further advance the teaching practices for the student with ASD.

When educators collaborate with parents, families and professionals from various fields to meet the needs of students with autism, everybody benefits. A greater understanding of autism spectrum disorders, improved instructional planning and successful communication between professionals can further student achievement. As more of these efforts are made, young children with autism may lead a less restrictive life with a more positive prognosis.

Chapter Two, the review of literature, describes the identification, evaluation, and treatment of children with autism spectrum disorders, literacy acquisition in children with ASD, and the effect teacher perceptions and self-efficacy may have on the literacy development in children with autism.

CHAPTER TWO

REVIEW OF LITERATURE

This review of literature serves to discuss pertinent historical and contemporary information about Autism Spectrum Disorders. It will cover features related to the diagnosis and evaluation of ASD and the characteristics that are often exhibited. Students with ASDs present teachers with some unusual and comprehensive challenges. These challenges include students' need for a multi-faceted learning environment in addition to the social-communication, emotional and academic challenges intrinsic to the school experience. This chapter reviews the complexity of educating children with ASD while discussing various practices and interventions that are presently being used for this population.

One of the bigger challenges of educating children with ASD is they often have limited expressive language and it is difficult to assess for the emergence of literacy skills. It is complicated for educators to determine the literacy acquisition of this population because their methods of communication are often atypical and too convoluted to understand, which usually contributes to communication breakdowns. By exploring the subject of emergent literacy acquisition among children with ASD, this chapter seeks to describe the challenges and underpinnings of the beliefs that exist for educators, parents and other professionals. This review of literature discusses five areas of research important to this study including: 1) the diagnosis of autism in children, 2) a synthesis of the intervention strategies used worldwide, 3) the construct of emergent literacy, 4) emergent literacy issues for children with ASD, and 5) drawing as a way of demonstrating literacy learning. The first section in this literature review begins with the historical background of ASD and its evolution into modern times.

Historical Background and Prevalence

Autism, the word itself, coined in 1908, was used to describe children who were self-absorbed and unable to interact socially (Boyle, 2003). Although the term Autism had been coined previously, it was officially described by Dr. Leo Kanner in 1943. Dr. Kanner, the first child psychiatrist in this country, reported on a group of 11 cases that appeared to exhibit what he called "an inborn disturbance of affective contact" (p. 18). He meant that in contrast to normal babies, these children came into the world without the usual interest in other people. Kanner believed that the difficulty for children with autism in dealing with the social world was congenital in nature; that is, the children were born with it (Volkmar & Wiesner, 2009). The term Autism has been particularly multifarious and controversial. One source of confusion was the deficient English translation of the work by Hans Asperger, who linked clumsiness in children to autism in the 1940s. In 1944, Hans Asperger described four children in his care that had serious difficulty interacting socially. He labeled this deficiency as "autistic psychopathy" and defined it as marked social isolation. Another basis for controversy was reference to the misconceptions of autism as an infant's response to early disturbances of the mother-child relationship (Fombonne, 2003). Debates over terminology (for example, "infantile autism," "early childhood psychosis," and "symbiotic psychosis") largely reflected untested psychoanalytic models, yet these prevailed up to the late 1960s (Fombonne, 2003).

The first official clinical definition for autism in the United States was published in 1980 by the American Psychiatric Association (APA) in the Diagnostic and Statistical Manual of Mental Disorders (DSMM). Although Dr. Leo Kanner, in 1943, and Hans Asperger in 1944, first described the disorder, and the DSMM identified it as a disorder in

the eighties, autism was not recognized by the U.S. Department of Education as a serious, debilitating condition until 1991 (Ruble & Dalrymple, 2002). Since that time, the U.S. Department of Education has reported more children being identified with autism than with any other disability and reported that the numbers rose 173% from 1992 to 1998 (U.S. Department of Education, 1999). This increase in the identification of children with autism substantiates current information that autism spectrum disorders are no longer a rare occurrence (National Institutes of Health, 2005). Based on statistics from the U.S. Department of Education (2009), autism is growing at a rate of 10-17 percent per year. A study done by the National Institutes of Health (2009) reported that, based on telephone surveys with parents, that approximately 1 in 91 children between the ages of 3 and 17 had autism, including milder forms such as Asperger's syndrome. Based on the newest findings from the Centers for Disease Control and Prevention, nearly 1 percent of U.S. children have Autism Spectrum Disorders (2009). At these rates, the Autism Society of America (ASA) estimates that the prevalence of autism could reach four million Americans in the next decade (2008). That makes ASD more common than pediatric cancer, diabetes, and AIDS combined (Whelan, 2009).

It is important to understand the definition of ASD and the characteristics associated with it. As we learn to understand the facets of the disorder, we will be able to diagnosis and evaluate children more efficiently and effectively. The earlier that children are diagnosed with ASD, the greater the chance that they will get the programming they need to address their developmental delays. Distinguishing autism from other conditions is imperative, since an accurate diagnosis and early identification can provide the basis for building an appropriate and effective educational and treatment program (Sundberg & Partington, 2000).

Research indicates that early diagnosis is associated with dramatically better outcomes for individuals with autism. After a child is correctly identified, the process of trying various specialized intervention approaches can begin (Baron-Cohen, 2006; Maurice, 1998). Early identification has also been associated with a reduction in family stress level by giving the family specific ideas for intervention strategies and a diagnosis which facilitates the family's ability to access medical and other supports for their child (Charman & Baron-Cohen, 2006).

Diagnosis and Evaluation of Autism

Autism is a spectrum disorder. This means that the symptoms and characteristics of autism can present themselves in a wide variety of combinations, from mild to severe. Autism typically appears during the first two years of life with the regression of some skills or with an indication of delay in developmental milestones. Although ASD is defined by a certain set of behaviors, children and adults can exhibit any combination of the behaviors in any degree of severity. Two children, both with the same diagnosis, can act very differently from one another and have contrasting skills. Since autism is described as a spectrum disorder, it can involve cognitive, sensory, social, communicative, and motor development deficits (Autism Society of America, 2008; Maedan et.al., 2006; Rapin, 1991). Further complicating these features are other co-existing conditions, the most common being mental retardation. Autism is four times more common in boys, and current statistics suggest a ratio of 1 in every 94 boys has autism (Autism Society of America, 2008). Autism is recognized as among the most complex of lifelong neuro-developmental disabilities (ADMM, 2007; Allen & Rapin, 1990). It is among the most disabling and mystifying of all childhood developmental disorders because it has an atypical pattern of development that affects multiple areas of functioning (Hilt & Metz, 2008; World Health Organization, 2006). There

are no physical tests for ASDs that researchers, doctors or teachers can reference on a continual basis. Some children with ASDs who are seen in a structured, one-to-one situation (such as a school, clinic or during psychological testing) may behave very well, smile and look at the examiner and show none of the overt features of autism. Yet if the same children are observed in unstructured, real-life settings, especially in a group of same-age peers, the characteristics of ASD may become apparent (Hess, 2006; Wing, 1997). Children with autism struggle with social interactions which results in atypical social development. Additionally, they often have unusual interests that are not shared by peers and have information-processing impairments that lead to difficulty understanding social cues something that causes them to appear awkward and peculiar. Since children with autism do not show a typical progression of social development, it is often difficult to evaluate them (Barry et.al, 2003). Diagnosis is made by obtaining a detailed developmental history from infancy, from parents or other informants, with particular emphasis on repetitive behavior. The history and detailed assessment of the pattern of skills, disabilities, and behavior are required for correct diagnosis (Eaves & Ho, 2004; Wing, 1996). There are no medical tests for diagnosing autism, and a blood test will not detect the syndrome (Autism Society of America, 2008). An accurate diagnosis must be based on observation of the individual's communication, behavior, and developmental levels. However, because many of the behaviors associated with autism are shared by other disorders, various medical tests may be ordered to rule out or identify other possible causes of the symptoms being exhibited.

Official Diagnosis

The most frequently used system for diagnosis in the United States is the American Psychiatric Association's (2000) *Diagnostic and Statistical Manual of Mental Disorders*

(DSM-IV). The diagnoses in the DSM-IV and the code numbers assigned to these diagnoses are used for many different purposes, such as record keeping, public health information, and insurance reimbursement. These code numbers give guidelines to physicians and other health care providers about diagnoses. The most recent edition of the DSM-IV (APA, 2000) includes five related disorders on the autism spectrum under the Pervasive Developmental Disorder (PDD) umbrella: (1)Autistic Disorder, (2) Asperger's Disorder, (3) Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS), sometimes called atypical autistic disorder, (4) Childhood Disintegrative Disorder, and (5) Rett's Disorder. More recently, many prefer the umbrella term ASD and use that term instead of PDD because it more clearly presents these conditions as a spectrum of related disorders rather than a specific set of diagnostic labels (Hilt & Metz, 2008; Strock, 2007).

The boundaries between these disorders are often unclear, although they share a triad of neurological impairments including social and communication difficulties, along with narrow, perseverative, and repetitive behaviors. Additional indicators of autism include difficulty communicating with teachers and peers, social impairment (such as isolated play and failure to make eye contact), repetitive and stereotyped play and disruptive behaviors in the classroom.

Commonly Observed Behaviors	***Example of Behaviors***
1. Resistant to change.	1. Wants to wear same color socks every day. Doesn't like new foods.
2. Difficulty expressing needs.	2. May use gestures, point, sign language or pictures.
3. Repeats language or words or phrases.	3. Asks same question over and over. Sings a song over and over. Understand only one angle of a problem.
4. Inappropriate expressions.	4. Laughs, cries, screams without any precipitating event.
5. Has difficulty interacting with others.	5. Appears aloof, prefers to be alone.
6. Tantrums.	6. Screams, cries, kicks, spits, pulls hair, bangs head for extended periods of time. Violent tantrums.
7. May not like affection or cuddling.	7. Screams when hugged or kissed.
8. Has difficulty making eye contact.	8. Even when spoken to, seems to not know where the sounds are coming from and rarely looks at facial features.
9. Frequently observed behaviors.	9. Spins, rocks, hand flaps, follows imaginary objects with eyes, looks at hands, and moves part of body repetitively.
10. Has difficulty with traditional teaching methods.	10. Needs one-on-one help.
11. Oversensitive or under sensitive to sensory input.	11. May overreact to bright lights and visual stimuli. May have a high tolerance for pain.
12. Engages in parallel play.	12. Will play alongside another child but will not interact verbally or physically.
13. Limited understanding of boundaries.	13. Will run and dart away without warning. Sees visual cues selectively.
14. Uneven gross and fine motor skills.	14. Has difficulty walking a balance beam. Cannot pick up small beads.

Figure 1. Commonly observed behaviors in ASD and examples of the behaviors. Adapted from Maurice, 1998 and NICHD, 2009.

Additionally, associated features of the condition, such as hyperactivity, aggression and self-injury, are likely to be disruptive to classroom and home routines. Furthermore, impaired cognitive development that occurs in two-thirds of children with autistic disorder creates further disruption in the education of this population (Filipak, Accardo & Ashwal, 2000).

Children with autism have deficit areas that affect their lives both socially and educationally. Characteristics of autism include irregularities and impairments in

communication, engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (Hardman, Drew, Egan & Wolf, 1993). People with autism process and respond to information in unique ways. In some cases, aggressive and self-injurious behavior may be present in order to fulfill needs or wants. A person with autism may also exhibit the various traits and behaviors described in Figure 1.

Some people with autism understand enough about the world around them and are able to interact, to some degree, in a social context so that they can participate significantly in their own life decisions and live and work with family and friends. This level of integration was considered unthinkable twenty years ago. There are also people with autism who have almost no understanding of the world around them. Their social and communication deficits severely affect their ability to make decisions and integrate fully into a community. There are many thousands of other people with autism who fall at some point in between these two extremes. Clearly, this brain disorder causes a wide spectrum of symptoms, from mild to severe, which present themselves distinctly in different children. While for some, autism simply hinders speech or shortens attention spans, it leaves others without the ability to speak, physically spastic, and incapable of satisfying their most basic needs. As rates of autism continue to rise, the need to provide education for children with autism will continue to grow. Research has shown that the greatest chance for improvement comes when the disability is addressed at a young age, making education for children with autism an important priority (Leone, 2002).

Autism spectrum disorder is one of the disabilities specifically defined in the Individuals with Disabilities Education Act (IDEA), the federal legislation under which

children and youth with disabilities receive special education and related services (Nichcy, 1993). IDEA, which uses the term "autism," defines the disorder as a "developmental disability significantly affecting verbal and nonverbal communication and social interaction, usually evident before age three that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences" (Autism Society of America, 2008, p. 18).

In the early 1970s, experimental studies showed that developmental gains could be achieved in children with autism when they were educated with active, rather than passive, techniques; when the home and classroom environments were structured to capitalize on their strengths and compensate their deficits; when the educational environment offered a high number of teachers to low number of students and addressed the multiple deficits across developmental areas with individualized education plans; and when parents acted as co-therapists to promote the learning in these children (Fombonne, 2003).

The medical community understands surprisingly little about autism. There is general agreement that a genetic predisposition, coupled with unknown environmental triggers, may be one influential variable; however, there is no single predictor of the condition (Whelan, 2009). Autism is likely to be caused by multiple genes on several chromosomes, and is likely to be associated with chromosomal deletions (Hall, 2009). It is likely that autism is a syndrome with a common phenotype—visible characteristics—expressed by many different underlying diseases (Coleman & Betancur, 2005). There is also mounting evidence that for a significant number of children with ASD, their symptoms may arise from disease of the mitochondria (Hall, 2009). Mitochondria are rod-shaped bodies found in most cells that

produce enzymes for the metabolic conversion of food to energy. Mitochondria cells contain their own DNA that differs from the DNA found in the cell nucleus, and most of the chemical energy in the brain is produced by the mitochondria (Coleman & Betancur, 2005). Autism does not result from a problem with one location in the brain but from abnormalities within one or multiple neural systems (Akshommoff, Pierce, & Courchesne, 2002; Coleman, 2005).

There is no fully-effective treatment, no blood test or biochemical exam to detect it, and no known cure. A brief observation in a single setting cannot present a true picture of an individual's abilities and behaviors. Parents', other caregivers', and teachers' input, coupled with the child's developmental history, are very important components of making an accurate diagnosis. At first glance, some people with autism may appear to have mental retardation, a behavior disorder, and problems with hearing, or even odd and eccentric behavior. It is important to identify when a child is not meeting their developmental milestones. There are many ways that parents become aware that something is wrong with how their child is developing; sometimes their child seems different than other kids their age; other people in a child's life may mention the difference to the parent when they watch them socialize with their peers, or parents themselves may compare the development of all of their children which allows them to recognize differences. Knowing the developmental markers of normal childhood and the warning signs of autism is critical in getting a child screened for ASD.

Developmental Markers and Warning Signs

The characteristic behaviors of autism spectrum disorders may or may not be apparent in infancy (18 to 24 months) but usually become obvious during early childhood (24 months to 6 years). As part of a well-baby/well-child visit, a child's doctor should do a

developmental screening, asking specific questions about the baby's progress. Parents, caregivers, family members, teachers and others who spend a lot of time with children can look for indicators. According to the National Dissemination Center for Children with Disabilities (NICHY) (2009), typically developing children reach some of the following milestones:

1. 3 Months of Age- The child can do the following: lift head when held at the shoulder, lift head and chest when lying on stomach, turn head from side to side, grasp rattle, wiggle and kick arms and legs, turn head toward bright colors and lights, turn toward sound of a human voice, recognize bottle or breast, respond to shaking rattle, make cooing gurgling sounds, smile, communicate hunger, fear, discomfort and can be soothed by the sound of a voice or being held.
2. 6 Months of Age- The child can do the following: hold head steady when sitting with help, reach for and grasp objects, play with toes, help hold bottle while feeding, explore by mouthing and banging objects, move toys from one hand to another, pull up to a sitting position on own, sit with only little support, roll over, bounce when held in a standing position, open mouth for the spoon, imitate familiar actions, babble, know familiar faces, laugh and squeal, scream if annoyed, smile at themselves in mirror.
3. 12 Months of Age- The child can do the following: drink from a cup with help, feed oneself finger foods, grasp small objects by thumb and index or forefinger, use the first finger to poke or point, put small blocks in and take them out of a container, knock two blocks together, sit well without support, crawl on hands and knees, pull themselves to a stand or take steps holding onto furniture, stand

alone momentarily, walk with one hand held, copy sounds and actions, respond to music with body motion, babble but sounds like talking, say first word, recognize family members' names, try to talk, show affection toward familiar adults and apprehension to strangers, raise arms to be picked up, understand simple commands.

Although many children with ASD do not show significant signs of the disorder until after the first year of life, it is important to understand some of the early developmental patterns of typical children. National Institute of Child Health and Human Development (NICHD) list five behaviors that signal a need for further evaluation (2005):

- Does not babble or coo by 12 months
- Does not gesture (point, wave, grasp) by 12 months
- Does not say single words by 16 months
- Does not say two-word phrases on his or her own by 24 months
- Has any loss of any language or social skill at any age

Having any of these five "red flags" does not mean a child has autism, but because the characteristics of the disorder vary so much, a child should have further evaluations by a multidisciplinary team that may include a neurologist, psychologist, developmental pediatrician, speech-language therapist, learning consultant, or other professionals knowledgeable about autism. The American Academy of Pediatrics (AAP) recently revised practice guidelines calling for all pediatricians to conduct developmental surveillance as part of routine medical care (AAP, 2006). Developmental surveillance includes observing the child, documenting and maintaining a developmental history, eliciting and attending to parent's concerns about their child's development, and identifying risk and protective factors (Branson, Vigil & Bingham, 2008). Common reasons for parents to seek further assessment

include: speech delay, lack of response to speech, regression or loss of skills or failure to make usual gains in skills, unusual behaviors, limited interest in playing and interacting with others (Volkmar & Wiesner, 2009).

In the first year of life, the earliest signs of autism are decreased interest in looking at people and in responding to being called by their name (Lord, 1995). Roughly around a year of age sophisticated social skills start to emerge, for example, what are called "joint attention" skills are usually starting to develop and these skills help the infant engage with their parents and learn to focus on what is important. Young children with autism typically do not use pointing gestures, do not show things to other people, and rarely give objects to others to share or to get help. Joint attention refers to the two way back—and—forth between people around a third thing, often an object (Volkmar & Weisner, 2009). Toddlers with autism may use their finger to point to something they want but not usually with eye contact with their parent. The child may not follow if the parent points to something and may have little interest in imitating parents or siblings.

Problems in the sensory area may be noted, but this is much less consistent; similarly, it is less likely that infants under 1 year of age have some of the kinds of mannerisms and repetitive behaviors and interests that seem to develop a bit later with autism. Unusual behaviors of children with ASD occur after the first year and can include staring at items that spin (e.g., a fan blade) or making repetitive movements (e.g., rocking). After one year of age, problems with communication become more noticeable. Words are often delayed and some of the usual gestures and nonverbal behaviors may not develop. As parents and professionals become aware of the warning signs that may indicate that there is something erroneous with the development of a child, it then becomes essential to get a child screened

and evaluated for a determination of ASD. There are a variety of assessments and checklists that currently exist to give strong indication that a child may have ASD or a related disorder. As with other matters in relation to ASD, there are many alternatives for screening assessments with little conclusive evidence of which tool is the premier to administer.

Screening Assessments

While there is not one specified behavioral or communications test that can detect autism, several screening instruments and developmental checklists have been designed that are used for detecting autism. Screening tools share similar characteristics—brevity and a focus on the characteristics thought to be the important early markers for autism. They hold promise for assisting in earlier recognition of autism and thus earlier diagnosis and intervention (Eaves & Ho, 2004). Although there are many ways to screen children with autism, the specific instrument that is used may not matter as much as having professionals alerted to developmental differences in young children. The important finding is that children who have social and language difficulties at two years of age rarely are typical children who will grow out of it.

When a child is suspected of having an ASD at a young age, careful monitoring by professionals and referral to both specialist services and early intervention is appropriate and recommended (Baird et al., 2001; Filipek et al., 1999). The following are some examples of screening tests used for children that are suspected to have autism:

1. The *Childhood Autism Rating Scale (CARS)*, developed by Eric Schopler in the early 1970s. This scale is based on observed behavior. Using a 15-point scale, professionals evaluate a child's relationship to people, body use, adaptation to change,

listening response, and verbal communication (Autism Society of America, 2008; Schopler, Reicher, & Rennner, 1988).

2. The *Autism Behavior Checklist (ABC)* is a parental interview that allows a clinician to evaluate obtained skills and milestones identified by the parent (McGovern & Sigman, 2009).
3. The *Assessment of Basic Language and Learning Skills (ABBLS)* is a comprehensive behavioral assessment as well as a skills-tracking system and curriculum guide for children with language deficits (Kochel, Myers, Hendricks, Carr & Wiley, 2007).
4. The *Autism Treatment Evaluation Checklist (ATEC)* is a parent report questionnaire for children with autism with ratings in four domains: speech/language/communication, sociability, sensory/cognitive awareness, and health/physical behavior (Rimland & Edelson, 2000).
5. The *Checklist for Autism in Toddlers (CHAT)* is used to screen for autism at 18 months of age. It was developed by Simon Baron-Cohen in the early 1990s to see if autism could be detected in young children. The screening tool uses a short questionnaire with two sections—one prepared by the parents, the other by the child's family doctor or pediatrician (Autism Society of America, 2008; Baron-Cohen, 2008).
6. The *Autism Screening Questionnaire* is a 40-item screening scale that has been used with children four and older to help evaluate communication skills and social functioning (Autism Society of America, 2008).
7. The *Screening Test for Autism in Two-Year Olds*, developed by Wendy Stone at Vanderbilt, uses direct observations to study behavioral features in children under

two. She has identified three skills areas (play, motor imitation, and joint attention) that seem to indicate autism (Autism Society of America, 2008).

8. The *Vineland Adaptive Behavior Scales-Classroom Edition (VABS-CE)* is a teacher rating of a child's level of personal and social sufficiency. It is a well- recognized instrument in child development literature, with demonstrable reliability and validity both for children who are typically developing and those with disabilities (Sparrow et al., 1985).
9. The *Autism Diagnostic Observation Schedule (ADOS)* is a standardized protocol for assessing social and communicative behavior associated with autism. It was created by Catherine Lord and Michael Rutter and colleagues in 1989. The protocol consists of a series of structured and semi-structured tasks that involve social interaction between the examiner and the subject. The examiner observes the subject's behavior and assigns identified segments to predetermined observational categories. The *Autism Diagnostic Interview-Revised* (*ADI-R*), a companion instrument, is a structured interview conducted with the parents of the referred interview and covers the full developmental history of the referred individual.

There are many other assessments that are used in identifying, evaluating and assessing children with autism. Furthermore, the *Checklist for Autism in Toddlers (CHAT)* by Baron-Cohen appears to be used most frequently in very young children (Eaves & Ho, 2004). Professionals working in the field of developmental pediatrics and early childhood intervention are being confronted with escalating referrals regarding young children with suspected autism spectrum disorders. For many parents and professionals, there is a sense of urgency to identify such children so that developmentally appropriate services can be

provided (Boyle, Bertrand & Yeargin-Allsopp, 2000). Although normative evaluations are critical for making or confirming a diagnosis of autism, they typically offer minimal information beyond the diagnosis that relates to skills across environments (Vacca, 2007). These problems have prompted researchers in the field of early intervention to pursue alternative assessment and instructional strategies for children with autism that provide a better link between evaluation procedures and intervention goals (Guralnick, 2004).

Shifting attention from diagnostic information to functional information to help children and families in their daily routines has led to the development of more authentic approaches to assessment. A case study conducted by Vacca (2009) used both a diagnostic test to assess a young girl with autism as well as other authentic assessments (such as familiar play activities) while incorporating her interests into the testing environment. Given the complexities of autism, Vacca suggests that a child who is provided with opportunities to participate in activities that include the types of toys the child prefers will be more likely to demonstrate his/her knowledge than if he/she participates in traditional adult-directed assessment.

More research needs to be conducted to advance innovative approaches to evaluation, documentation and collaboration among all interested parties. Enhanced identification methods have direct consequences for school personnel—the foremost being to provide professionals with specialized skills and knowledge to develop collaborative and individualized educational programs. Furthermore, discussing and learning effective educational interventions allows educators to develop and utilize tools they need to effectively teach children with ASD. For the purpose of this study, identifying practices that may be used to enhance literacy acquisition in the classroom is pertinent. The sizeable

quantity of research on topics of treatments and instructional strategies for children with ASD has become daunting to wade through. The following review of information related to instructional approaches represents an overview of the most common practices happening today in classrooms, homes, and private agencies.

Treatments and Instructional Approaches

The literature on autism has grown remarkably during the last several decades, and the result has been a much better understanding of the nature of the disorder. Furthermore, a corresponding explosion of literature has occurred regarding the treatment of ASD; however, this information is a mix of science, anecdotes, and unproven theories. The ASD literature does include many studies in which children have been taught a wide variety of skills and behaviors, yet the emphasis of most of these studies is on the method of instruction rather than content (Olley, 1999).

As a result, it is difficult to determine what is important to teach and in what sequence it should be taught. In addition, it is difficult to ascertain which intervention or instructional technique is appropriate for children with autism. A case study conducted by Coffey and Obringer indicates that parents agreed on a majority of issues in relation to school accommodations, inclusive settings, and development of their children with autism and clearly pointed out that their major area of concern was the education of their child (2000). While best instructional practices are of grave concern to both parents and educators, the challenge of navigating through the identified strategies and research still remains. A summary of popular treatment approaches and their definitions is located in Table 1.

Stahmer et al. (2005) used focus groups to investigate techniques employed in community early intervention programs in California. Even though most educators

expressed a desire to provide evidence-based interventions, results indicated both researched and non-researched practices were being used. Additionally, when evidence-based programs were employed, significant modifications and adaptations were often reported (Hess, Morrier, Heflin & Ivy, 2008). Even though researchers have conducted a variety of studies in treating children with autism, little has been done in the research to prioritize the best strategy for long term success. A summary of popular treatment approaches and their definitions is located in Table 1.

Table 1

Summary of Popular Treatment/Approaches with ASD

Treatment/Approaches to Autism	Definition of Treatment/Approach
Lovaas Technique	Breaks down skills into manageable pieces and then builds upon those skills so that a child learns how to learn in the natural environment (Lovaas, 2009).
Applied Behavior Analysis	Employs methods based on scientific principles of behavior to build socially useful repertoires and reduce problematic ones (Harris & Handleman, 1994).
TEACCH	Cultivating a child's strengths and interests, and developing appropriate structures that promote a child's independent work skills while also fostering communication, social, and leisure outlets. (Shopler, 1995).
LEAP	The curriculum emphasizes independent play and social interaction in naturally occurring routines (Strain & Cordisco, 1994).
Comic Strip Conversations	The child is helped to use a series of standard "thought" and "word" bubbles in producing a visual depiction, frame by frame of a social interaction (Gray, 1994).
Floor Time	Help a child master the healthy emotional milestones that were missed in his early development and that are critical to learning, thereby helping children overcome their symptoms (Greenspan, 1981). Use of play and parent involvement to resolve communication issues.
Sensory Integration	Therapists stimulate children's skin and vestibular system. This stimulation consists of activities such as swinging in a hammock suspended from the ceiling, spinning in circles, brushing parts of children's bodies, and engaging in physical activities that require balance (Ayers, 1972).
Peer Mediated Interventions	Recent studies have focused on designing features that teach peers and provide support for them to engage in interactions with children with ASD that are independent of teacher involvement (Barry, et.al, 2003; Kohler et al., 1995; Odom & Watts, 1991) as well as designing procedures that could be implemented across the school day and with multiple peers (Laushey & Heflin, 2000).
PECS/Sign Language	The PECS method teaches communication by using parallels to early typical language development and by controlling verbal behavior (Frost, 2002). Use of pictures to represent language.
Video Modeling Programs	Video feedback involves videotaping the target individual performing specific behaviors and then co-reviewing the videotape so that the child can evaluate his or her own behaviors (Maione & Mirenda, 2006).
Social Stories	A Social Story is a short story written for an individual that describes a specific activity and the behavior expectations associated with that activity (Gray, 1995).
Parent Training Programs	Parents of children with autism are taught a variety of intervention techniques to improve the parent–child relationship (Koegel, Bimbela, & Schreibman, 1996, Ingersoll & Dvortcsak, 2006; Mahoney & Perales, 2003), increase communication skills (Harris, 1986), and decrease inappropriate behavior (Marcus, Lansing, Andrews, & Schopler, 1978; Prizant et al., 2000; Spann & Kohler, 2003)

Controversial and unsupported treatments plague the field of autism, resulting in wasted time, energy, and funds. According to many researchers, these strategies offer inadequate treatment for individuals with ASD and their families (Simpson et al. 2005). Unfortunately, the number and range of pseudoscience treatments has grown in recent years as more children have been diagnosed with autism (Metz, Mulick & Butter 2005). Fad treatments are interventions that use scientific jargon and sound logical, are supported by celebrities, and are discussed in the media and on the Internet where many parents can be exposed to them. Fad treatments, by definition, have no substantial body of research showing that they are effective in treating any aspect of ASD. Thus, there is little confidence that they are effectively treating autism. Overall, one-third of the treatments reported to be in use by responding teachers have limited support, suggesting a serious disconnect between the broadly accepted best practice guidelines and current reported classroom practice. Without clear best practice guidelines for children with ASD at different grade levels and classroom settings, teachers have little support for choosing which strategies to use with this population. Thus, educators are left to their own conclusions when determining which strategy to use. Often, teachers make the decision to use a specific strategy based on variables unrelated to the scientific basis. In addition, it may be possible that the school systems are attempting to avoid problems, such as litigation, by allowing all treatments to be available to all students rather than creating a curriculum of validated and empirically sound methodology (Hess, Morrier, Heflin & Ivy, 2008; Simpson etal, 2005).

Areas of intervention typically address the core diagnostic features of autism-deficits with social interaction and communication-but also include other issues including learning.

The National Research Council on Educating Children with Autism underscores several of the important priorities for intervention. They include:

- Development of functional, spontaneous communication.
- Social instruction in various settings.
- Enhancing play skills and peer play abilities.
- Enhanced academic cognitive growth including a range of abilities and problem solving skills.
- Positive behavioral interventions for problem behaviors.
- Functional academic skills and integration in mainstream setting as appropriate (Volkmar & Wiesner, 2009).

The literature showing the effectiveness of treatments is somewhat less advanced than the actual teaching materials. Although many of the strategies and interventions used with children with autism can be controversial in methodology, it is important to know and recognize the many commonly practiced programs for sake of this study.

Lovaas Technique

The most well-known preschool curriculum is that of Lovaas and his colleagues (Lovaas, 1993; Lovaas et al., 1980; Lovaas & Smith, 1989) which has been widely disseminated. Lovaas found nearly one-half of the preschoolers in an intensive treatment group to make dramatic improvements that were sustained into their school years by using behavioral methods. In 1987, he published a landmark study which found that devastating symptoms of autism could be ameliorated and even reversed in some children (Stacey, 2003). This approach is to be taught one-on-one with discrete trial sessions in the home. As children gain skills, instruction moves to all settings throughout the day. The only published

research on the Lovaas approach began when the children were two or three years old and continued until they were school-aged (Lovaas, 1987). The Lovaas approach is said to be the only empirical and scientifically-based treatment for children with autism (Olley, 1999). Lovaas' results were unprecedented. For the first time, someone in the scientific community had proved that autism was treatable. Some groups are critical of Lovaas because, in the years prior to the publication of his 1987 study, he recommended aversive techniques (such as spanking, showing anger, looking away, and yelling) as a means of coercing children to behave differently. However, recent researchers suggest that Lovaas added effective means of positive reinforcement and eliminated aversive techniques. Critics continue to argue that his study was seriously flawed (Stacey, 2003). Conversely, it remains the only empirical research that consistently shows a positive improvement in the symptoms of autism. However, there are problems with the child's ability to generalize the skill outside of the discrete trial format or environment.

Applied Behavior Analysis

Behavior management therapy is a derivative of the Lovaas philosophy and works to reinforce wanted behaviors and reduce unwanted behaviors. This method also suggests what caregivers should do before or between episodes of problem behaviors and what to do during or after these episodes (NICHD, 2005). Behavioral therapy is often based on Applied Behavior Analysis (ABA) and can be utilized across all populations and diagnoses. Applied Behavior Analysis (ABA) has been shown to produce substantial benefits for many children with autism (Anderson, Avery, DiPietro, Edwards & Christian, 1987; Birnbrauer & Leach, 1993; Fenske, Zalenski, Krantz & McClannahan, 1985; Lovaas, 1987; McEachin, Smith & Lovaas, 1993). As long ago as 1981, applied behavior analysis was identified as the

treatment of choice for autistic behavior. Applied Behavior Analysis (ABA) is the science of human behavior. Over the past 30 years, several thousand published research studies have documented the effectiveness of ABA across a wide range of:

- populations (children and adults with mental illness, developmental disabilities and learning disorders)
- interventionists (parents, teachers and staff)
- settings (schools, homes, institutions, group homes, hospitals and business offices)
- behaviors (language; social, academic, leisure and functional life skills; aggression, self-injury, oppositional and stereotyped behaviors)

Applied Behavior Analysis is the process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree and to demonstrate that the interventions employed are responsible for the improvement in behavior (Baer, Wolf & Risley, 1968; Sulzer-Azaroff & Mayer, 1991). A properly implemented ABA program is expensive. Some ABA programs cost upwards of $100,000 per year (Zane, Davis & Rosswurm, 2008).

TEACCH

The Treatment and Education of Autistic and Related Communication Handicapped Children Program (TEACCH) is a series of educational and skills training programs designed to meet the needs of individuals with autism throughout the lifespan (McGovern & Sigman, 2005). TEACCH is an evidence-based service, training, and research program for individuals with ASD of all ages and skill levels. Established in the early 1970s by Eric Schopler and colleagues, the TEACCH program has worked for thousands of individuals

with autism spectrum disorders and their families. TEACCH provides clinical services such as diagnostic evaluations, parent training and parent support groups, social play and recreation groups, individual counseling for higher-functioning clients, and supported employment. In addition, TEACCH conducts training nationally and internationally and provides consultation for teachers, residential care providers, and other professionals from a variety of disciplines. Research activities include psychological, educational, and biomedical studies (University of North Carolina, 2006). The TEACCH approach incorporates teaching communication versus just language and vocabulary development, focusing on pragmatic or functional language use and understanding the need for individualization (ASHA, 2008). Additionally, TEACCH is highly recognized for the use of structure and routine, which is a key component of this model.

LEAP

LEAP (Learning Experiences: an Alternative Program for Preschoolers and Parents) is a preschool program firmly based upon social skills taught in play and in groups. Unlike Lovaas' one-to-one instruction using discrete trials, Strain's curriculum is taught in an integrated classroom in such familiar formats as "circle time," "story time," and "activity centers" (Strain & Cordisco, 1994). The curriculum emphasizes independent play and social interaction in naturally occurring routines. This program has produced numerous individual research studies demonstrating the acquisition of social skills by preschool children with autism (Strain & Cordisco, 1994) and group outcomes showing significant improvements with follow-up in later grades (Hoyson et al., 1984; Strain, Kohler & Goldstein, 1996).

Floor Time

Greenspan, a child psychiatrist specializing in early development, spent sixteen years at the National Institute of Mental Health (NIMH), and his studies led to a new philosophy of emotional development (Greenspan, 1981). In his years at the NIMH, Greenspan developed sophisticated criteria for understanding and defining emotional maturity. He applied research about how babies and toddlers "process" the vast amount of sensory information available to them each day. On the basis of his insights, Greenspan designed a therapeutic model to help children with a variety of problems. He called it D.I.R. (Developmental, Individual-difference, Relationship-based Model) or, informally, "floor time" and made the approach available to the public in his book *The Child with Special Needs* (1998). Floor time required parental involvement. Though it emphasized relationship, fun, and joy, the method drew its power from parents' ability to entice a child with an impairment to perform at increasingly higher levels of attention, cognition, and motor functioning—far higher than that child would normally perform.

Sensory Integration

A common characteristic of people with autism is their difference in perceptual sensory processing, a disability commonly known as sensory dysfunction or sensory difference (Bauman & Kemper, 1994; Kern, 2002; Kern et al., 2001; Moller & Kern, 2005). Sensory dysfunction results from the brain's inability to correctly process stimuli from the sensory inputs including vision, hearing, touch, taste, smell, vestibular, proprio-ceptive, and kinesthetic. Ayres (1979) and others (Huss, 1983) asserted that sensory integration techniques could be used to reduce the results of sensory dysfunction, such as self-stimulation. Grandin (1992) noted that deep pressure, part of Sensory Integration techniques,

and can provide a “calming effect” for persons with ASD, since some (Hardy, 1990) believe that persons with autism display high levels of arousal. Other methods of providing sensory input include adding weight to vests and backpacks (VanderBerg, 2001) and brushing parts of the body (Stagnitti, Raison & Ryan, 1999). Even though sensory dysfunction is mentioned in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (American Psychiatric Association, 1994), sensory abnormalities remain excluded from the indicative profile. Since the nature or the frequency of abnormal sensory responses is not included in the diagnostic criteria for autism or pervasive developmental disorder (PDD), it has been disregarded in some research (Tadevosyan-Leyfer et al., 2000; Zane, Davis, Rosswurm, 2008).

Individual Therapies

A variety of health care providers can also help individuals with ASD and their families work through difficult and unprecedented situations. Speech-language therapists can help children with autism improve their general ability to communicate and interact with others effectively, as well as develop their speech and language skills. These therapists may teach non-verbal ways of communicating and may improve social skills that involve communicating with others. They may also help people to better use words and sentences and to improve rate and rhythm of speech and conversation (NICHD, 2005).

Occupational therapists can help people with autism find ways to adjust tasks and conditions that match their needs and abilities—finding a specially designed computer mouse and keyboard to ease communication or identifying skills that build on a person’s interests and individual capabilities. Additionally, physical therapists design activities and exercises to build motor control and to improve posture and balance.

Peer Mediated Interventions

Children with autism, especially very young children with autism, tend to have difficulty imitating, engaging in many activities, playing, and readily responding to social praise (Rosenberg & Schwartz, 2003). Peer-mediated interventions to support children's social behavior have been researched since the seventies (Strain, Shores & Timm, 1977). Currently, there are still educators and researchers supporting peer mediated activities for children with ASD (Barry, et.al, 2003; Odom, Hoyson, Jamieson & Strain, 1985; Odom & Strain, 1986; Strain, 1983). Recent studies have focused on designing features that teach peers and provide support for them to engage in interactions with children with ASD that are independent of teacher involvement (Barry, et.al, 2003; Kohler et al., 1995; Odom & Watts, 1991) as well as designing procedures that could be implemented across the school day and with multiple peers (Laushey & Heflin, 2000). Pairing children with ASD and their typical functioning peers appears to help facilitate enhanced social communication.

Visual Methods

Visual supports, such as graphic or photographic activity schedules, Picture Exchange Communication Systems (PECS) and general use of sign language, have become standard practice in many programs for young children with autism, and single-subject design studies provide evidence of their effectiveness (Charlop-Christy et al., 2002; Parsons & Mitchell, 2002). PECS is geared toward children who have difficulty using speech as a primary mode of communication. Developed in 1985 for preschool children with autism, PECS has expanded to include all age groups and disabilities. The PECS method teaches communication by using parallels to early typical language development and by controlling verbal behavior. When a teacher uses a powerful reinforcement, spontaneous requesting and

expanded communication skills can be enhanced and achieved (Frost, 2002). Additionally, Comic Strip Conversations use a visual approach like the PECS system. This approach, developed by Carol Gray in 1994, has the great advantage of teaching some important social distinctions. By producing a simple comic strip narrative, the child is helped to use a series of standard "thought" and "word" bubbles in producing a visual depiction, frame by frame of a social interaction.

Video Modeling Programs

Using the power of videotaped and televised images to provide models of appropriate behavior also has modest support for young children with autism and also produces promising results for some children (Carothers & Taylor, 2004; Schreibman et al., 2000). Virtual reality and video have been used for social skills instruction (Parsons & Mitchell, 2002; Nickopoulos & Keenan, 2003) with young children with autism. A study conducted by Parsons with secondary students found that using digital video was effective in allowing the student to role play interviewing skills, evaluate and observe themselves and get peer feedback (2006). Video modeling procedures have been used successfully to teach children with autism a variety of adaptive behaviors including social, play, requesting, self-care, and purchasing items with money, as well as academic skills. Video feedback involves videotaping the target individual performing specific behaviors and then co-reviewing the videotape so that the child can evaluate his or her own behaviors (Maione & Mirenda, 2006). Using digital video cameras is a natural fit for students with autism who are visual learners and struggle with auditory input. Innovative procedures for teaching children to use self-monitoring and self-evaluation techniques (Morrison et al., 2002; Shearer et al., 1996) have extended the intervention methods available to teachers.

Social Stories

Another popular intervention strategy for children with ASD is Social Stories (Sansosti, Powell-Smith & Kincaid, 2004). A Social Story is a short story written for an individual that describes a specific activity and the behavior expectations associated with that activity (Gray, 1995). There have been limited amounts of studies regarding social stories for children with ASD; however, the few studies that have been conducted have been positive (Sansosti et al., 2004).

Parent Training Programs

Research in the United States has demonstrated the importance of family involvement and training in the education of children with autism. Specific studies on effective practices in educating children with autism stress the importance of parent training, which enables parents to provide consistent and effective education to their children in all settings (Kaiser, Hancock & Nietfield, 2000; Koegel, Koegel & Carter, 1999; Lovaas, 1987; Schopler, 1987; Sheinkopf & Siegel, 1998). Although it has long been a program feature of many comprehensive intervention models, researchers are documenting the value of having parents and other family members involved in intervention practices that occur in the home and community. The importance of training parents as intervention providers for their child with autism was first emphasized by Lovaas and colleagues when they noted that, following intensive treatment, children whose parents were trained to carry on the intervention continued to make gains; whereas children who were returned to an institutional setting lost their previously acquired skills (Lovaas, Koegel, Simmons & Long, 1973). Since then, parents of children with autism have been successfully taught a variety of intervention techniques to improve the parent–child relationship (Koegel, Bimbela & Schreibman, 1996,

Ingersoll & Dvortcsak, 2006; Mahoney & Perales, 2003), increase communication skills (Harris, 1986), and decrease inappropriate behavior (Marcus, Lansing, Andrews & Schopler, 1978; Prizant et al., 2000; Spann & Kohler, 2003). Parent training has been shown to be a very effective method for promoting generalization and maintenance of skills in children with autism. The potential benefits of parent training are increased skills, renewed confidence and reduced stress for parents and children. Group training in new skills for parents has been demonstrated to facilitate mutual support between parents and educators (McConachie & Diggle, 2007).

Despite its well-established benefits, few public school programs include parent training as part of early childhood special education curriculum (Ingersoll & Dvortcsak, 2006). Barriers to provision of parent training include the lack of parent education models that can be easily implemented and the lack of preparation of special educators in parent education strategies (Mahoney et al., 1999). Despite its need and importance, however, many parents have little or no involvement in children's special education services. Earlier studies have indicated that although parents attend their child's Individualized Education Program (IEP) meeting, they often have no involvement in developing objectives, interventions, or methods of evaluation (Goldstein, Strocland, Turnbull & Curry, 1980; Yoshida, Fenton, Kaufman & Maxwell, 1978). For example, Lynch and Stein (1982) surveyed 400 parents about their involvement in IEP meetings. Although 71% of the participants reported active involvement in the meeting, only 14% provided specific recommendations or opinions. Similarly, Able-Boone, Goodwin, Sandall, Gordon, and Martin (1992) surveyed 290 parents about their involvement in early intervention services, and many parents reported that they were excluded from the process of planning for their

child's goals and development. Today, the studies reveal the same statistics. In spite of program efforts, parent participation is generally disappointingly low, making it difficult to interpret the effectiveness of parent training (Morrison et al., 2005).

Strategies Review

An interesting trend exists in the literature. Well-established intervention techniques represent traditional approaches to behavioral treatment for young children with autism. These approaches can be traced back to their roots in the 1960s in the pioneering work of Lovaas, Baer, Risley and other applied behavior analysis researchers known today. In many ways, these approaches represent past effective treatments for children with ASD. The accumulating evidence of the techniques being researched and developed now may well represent the "cutting edge" interventions for the current decade. Contemporary researchers are using prompting and reinforcement from early behavioral approaches. However, they are also designing interventions that are more precisely tailored to the characteristics and preferences of the child, i.e. implementing interventions in naturalistic contexts, involving cognitive capacities by building self-monitoring into intervention procedures, and making use of the advances in technology including the power of observational learning through the use of videotaped models. These intervention variations may well be the future direction for effective, scientifically-based practice for young children with autism (Odom et al., 2003).

Early diagnosis and appropriate educational programs are very critical for children with ASD to succeed. From an early age, children with autism are eligible for an educational program appropriate to their individual needs because of IDEA (Powers, 2000). Programs for students with ASD and related disorders focus on improving communication, social, academic, behavioral and daily living skills. Behavior and communication problems that

interfere with learning sometimes require the assistance of a skilled professional in autism to develop and assist with the implementation of a plan to be carried out at home and school.

Children with autism often need a highly-structured learning environment which helps them begin to understand the world around them (Autism Society America, 2008). Without this structure, most students with autism are unable to process information in a way that allows their learning to take place. For some students, a regular classroom can provide enough structure if the child receives additional assistance. Conversely, some students with autism need greater structure to maximize the benefits of the educational system. The bustle of activity in a regular classroom can be too distracting for many students. Additionally, special needs such as toileting and working on the modification of inappropriate behaviors is not feasible in a class of thirty students, even with one-to-one assistance (Schopler & Mesibov, 1995). Scheuermann and others described students with ASD, especially those who are low-functioning, as exhibiting many challenges for teachers. "They typically present with deficits in cognition, communication, and socialization and are unmotivated to interact with others or the environment in general. Basic functional and learning skills are usually delayed or absent, and many students demonstrate extreme aggressive, self-abusive, or noncompliant behaviors" (2003, pp. 18-19). For success in the classroom, teachers of these students must be very well-trained, qualified and skilled in a variety of approaches. As these students are integrated into the general education classroom, all staff must have strong support systems in order to provide a positive experience. For purposes of this study, it is important to understand the many current approaches that are prevalent in the classroom. There is notably more information regarding the assessment, education and programmatic complexities of children with autism. Teachers that understand current methods for

educating children with ASDs may have greater resources to draw from in order to enhance literacy acquisition for their students. There are still many avenues to research in order to achieve a greater outcome of success. Scientific research that is based in strong empirical methodology is limited today; therefore, it is an area where researchers should expand and build for better clarity for all professionals who are working with children with ASD.

In the preschool years, earlier diagnosis and intervention are associated with progressively better outcomes. Problems in communication are universal for children with ASD. In the past, as many as 50% of children with a single diagnosis of autism were largely nonverbal at the time they entered school; with earlier detection and intervention, that number has been significantly reduced to possibly 30% (Volkmar & Wiesner, 2009). Minimally verbal students may have difficulty with some of the basic social aspects of communication, i.e. joint attention or understanding simple gestures. Verbal children may have language that is unusual, for example; echolalia which is the repetition of speech. Additionally, they may struggle with pronoun use and pronoun reversal, speaking in a robot-like or monotone voice and often use inappropriate word inflection. Additionally, children with ASD struggle with the pragmatics of carrying on a conversation and telling stories and narratives.

Due to the unique literacy challenges faced by children with autism it is important to understand theories of emergent literacy and how that process unfolds, both for typically developing children and children with ASD. This will be discussed in the next section.

Theoretical Framework: Emergent Literacy

From a traditional standpoint, literacy is the visual-auditory task involved in the extraction of meaning from symbols—a decoding of the phoneme, grapheme relationship

into representational language (Koenig, 1992; Koppenhaver & Yoder, 1993). The understanding of written language or a system of symbols is fundamental to social interaction and to achieving quality of life (Zascavage & Keefe, 2004). About a half a century ago, children were given reading readiness tests at school entrance to assess whether they were ready for the new initiative of learning to read. About twenty years ago, this conception began to change toward an understanding of learning to read as a process that starts much earlier in life and is based upon a variety of foundational skills acquired before children enter formal schooling (Evans & Shaw, 2008). In the 1920s, educators began to recognize the early childhood years as a "period of preparation" for reading and writing. The introduction of the *emergent literacy* term gave rise to two different lines of research on preparing children for reading (Teale & Sulzby, 1986). While one group believed that reading readiness was the result of maturation (nature), the other group thought that appropriate experiences could accelerate readiness (nurture). These differing viewpoints underscore the philosophical differences that have characterized much of the research on children's development through the years.

Reading readiness from the "nature" perspective was the dominant theory from the 1920s into the 1950s which focused on biological maturation. From this perspective, it was believed that mental processes necessary for reading would unfold automatically at a certain period of time in development (Teale & Sulzby, 1986). Researchers argued that good practice would provide an environment that did not interfere with the predetermined process of development in the child. Thus, educators and parents were advised to postpone the teaching of reading until children reached a matured age—typically about age 6 to 8 years old, which coincided with the beginning of formal education. The 1960s introduced

numerous studies examining the reading readiness paradigm which claimed that children's ability to read and write developed only when formal reading instruction began in kindergarten (Saracho & Spodek, 2006).

During the late 1950s and 1960s, the dominant theory shifted from reading readiness as maturation toward readiness as the product of experience. Proponents of this viewpoint argued that if children had the appropriate experiences, their reading readiness could be accelerated. Teale and Sulzby (1986) identify several factors which contributed to this shift: a growing reliance on reading readiness workbooks and tests during the first years of school, which had been used by the maturationists as the intervention tool; increased research on young children, which demonstrated that preschoolers knew more than had generally been believed; the adequacy of American education was being questioned; and supporters of social equality argued that many minority children had culturally disadvantaged backgrounds and had to wait until they got to school to overcome the disadvantage.

Clay (1966) first introduced the term *emergent literacy* to describe the behaviors demonstrated by young children imitating reading and writing activities with books and writing materials. Clay (1975) emphasized the importance of the relationship between writing and reading in early literacy development. Until then, it was believed that children must learn to read before they could learn to write.

Teale and Sulzby (1986), in their acclaimed book *Emergent Literacy: Writing and Reading*, defined the term more broadly with their assertion that reading, writing and oral language develop interrelatedly and concurrently. They explain the concept of emergent literacy to be inclusive of all of the "skills, knowledge and attitudes that are presumed to be developmental precursors to conventional forms and the environments that support these

developments" (Teale & Sulzby, 1986, p. 849). From the growing body of research on literacy development, Clay's concept of emergent literacy has evolved to include the following elements:

- Literacy development begins before children start formal instruction in elementary school.
- Reading and writing develop at the same time and are interrelated in young children, rather than sequential. Literacy involves listening, speaking, reading and writing abilities as aspects of both oral and written language.
- The functions of literacy, such as knowing that letters spell words and knowing that words have meaning, have been found to be as important a part of learning about reading and writing during early childhood as the forms of literacy (Council for Exceptional Children, 1996; Teale & Sulzby, 1986).
- Children have been found to learn about written language as they actively engage with adults in reading and writing situations; as they explore print on their own; and as they observe others around them engaged in literacy activities (Teale & Sulzby, 1986).
- Children have been found to pass through general stages of literacy development in a variety of ways and at different ages (Johnson, 1999; Roskos et al. 2003; Teale & Sulzby, 1986).

Whereas the concept of reading readiness suggested that there was a point in time when children were ready to learn to read and write emergent literacy suggested that there were continuities in children's literacy development between early literacy behaviors and those displayed once children could read independently (Highnam, Raschke & Kohler,

2008). The view that the home environment or early intervention programs in which children grow plays a substantial role in their literacy development is illustrated by a large-scale study of twins completed by Petrill, Deater-Deckard, Schatschneider, and Davis (2005). Family environment characteristics were associated with children's reading outcome beyond what could be explained by genes shared by parents and children (Evans & Shaw, 2008).

Children have been found to learn about written language as they actively engage with adults in reading and writing; as they explore print on their own; and as they observe others around them engaged in literacy activities (Teale & Sulzby, 1986). In the United States today, children are inundated with print prior to their entry into school. Most preschoolers are provided a wide array of language and literacy-rich experiences in their everyday living environments which stimulate the development of their literacy skills. Early exposure to text encourages children to quickly generate the prerequisite skills necessary for achievement when presented with formal reading instruction (Saracho, 2006). Typically, developing older preschool children and kindergarteners often move between emergent literacy and conventional literacy stages, depending on the difficulty of the task (Sulzby, 1990). Indeed, children acquire a number of important skills during the preschool years that form the foundation upon which subsequent higher-level literacy acquisitions will be built. These emergent literacy skills have received increased attention in the developmental literature as their important role in the process of learning to read has been more fully recognized. Longitudinal research studies (Dale & Plomin, 2005; Young, 2002 & 2004) reinforce the importance of early language and literacy-related opportunities, as results have shown that young children's literacy understandings in preschool or in kindergarten relate strongly to later measures of literacy achievement.

Hood, Conlon, and Andrews (2008) showed, through a longitudinal study, that children will develop better emergent literacy skills, such as alphabet knowledge, and beginning reading skills, when their parents teach them about printed letters. Phonological and phonemic awareness, knowledge of letter names and rapid naming all have been shown to play important roles in the development of word recognition (Aarnoutse & Verhoeven, 2005). Furthermore, the experiences, attitudes and materials pertaining to literacy that a child encounters and interacts with at home compose a child's home literacy environment (Whitehurst & Lonigan, 1998). Particularly influential features of children's environments that relate to their development of print knowledge include parental involvement in children's school work and children's enjoyment of reading activities (Petrill et al., 2005), parental beliefs concerning the importance and value of home literacy activities (Zucker & McGinty, 2008), the frequency with which children are read storybooks and the quality of book-sharing interactions (Justice et al., 2009). Over the past two decades, the term *emergent literacy* has been broadened to include the development of reading, writing, speaking, listening, viewing and thinking skills.

These foundational skills of literacy are broad-based and span both the child's home and preschool environments. Preschool literacy experiences and achievements in the home and the classroom serve as strong predictors of children's later reading and academic performance (Kaderavek & Justice, 2000). Bennett (2006) found that the more parents initiated literacy activities in the home the better the preschool child's print knowledge was and the more interested he or she was in reading. Research suggests that deficits in early literacy skills and experiences can affect children's subsequent attainment of higher-level linguistic abilities such as reading and writing. Generally, research findings show that it is

not simply the frequency with which children engage with print that matters most, but rather the quality of these interactions (Skibbe et.al, 2008).

Because of the systemic stresses associated with socioeconomic challenges, children who are reared in poor homes may have relatively fewer experiences with print compared to other children (Roberts et.al., 2005). This offers at least a partial explanation as to why children who are reared in poverty tend to develop print knowledge much slower as compared to those who are raised in more advantaged homes (Justice, Bowles & Skibbe, 2006). Providing emergent readers and writers with rich, meaningful opportunities to interact with written language within the classroom is critical. From an emergent literacy perspective, teachers of preschool children and older children with learning disabilities should provide opportunities for students to explore the sounds of language, to acquire an awareness of print and book conventions, to develop narrative skills, and to experiment with early-writing modalities (Kaderavek & Justice, 2000).

Researchers believe that the content of early literacy instruction should include teaching preschool children:

- what reading and writing can do;
- to name and write alphabet letters;
- to hear rhymes and sounds in words;
- to spell simple words;
- to recognize and write their own names;
- new words from stories, work, and play;
- and to listen to stories for meaning (Roskos et.al., 2003).

There are numerous ways to promote reading and develop literacy skills in young children such as sharing and reading books, assisting children with exploring books, developing children's willingness to listen to stories, reading to the child, teaching songs, poems, rhymes, jingles, books and dramatic play (Hay & Fielding-Barnsley, 2007). A literary-rich environment is critical to the young child's development of reading skills. Emergent literacy theory asserts that children's experiences impact the acquisition of effective reading and writing skills. The development of emergent literacy is influenced by social contexts, parental involvement and educational philosophy. Children who are offered both informal and intentional experiences to read, write, be read to and engage in activities involving language, experience greater success in school (Genisio & Drecktrah, 1999).

Throughout this literature review, the importance of early intervention and exposure to instruction has been emphasized for children with ASD. Since it is important to work with children with ASD early, a logical inference can be made for experiencing early literacy events and exposure to literacy material to gain additional value. This research study focuses on the specific literacy materials and events that teachers are using with students with ASD, in order to ascertain key approaches that offer success in literacy acquisition. Currently, it is largely unknown how children with ASD acquire and develop literacy; and more specifically, how educators can support and encourage further achievement in this area.

Autism and the Acquisition of Literacy

Early childhood classroom environments that provide the child with authentic opportunities to become engaged in learning by listening, talking, reading, writing and playing foster emergent literacy (Genisio & Drecktrah, 1999). Historically, literacy instruction, including reading and writing, for students with developmental disabilities has

been underemphasized. However, literacy must be an instructional priority if students with developmental disabilities are to achieve desired post-school outcomes and make progress, even within a functional framework of curricula (Browder et al., 2006). Researchers and educators are joined in their ongoing recognition of the importance of literacy by advocates and legislators, as seen in the emphasis in the Individuals with Disabilities Education Act (1990) on access to general education standards and in the emphasis in the No Child Left Behind Act (2001) on the broadening and inclusiveness of assessment. Although many individuals with autism are able to demonstrate skills that are directly related to literacy, many people share the sentiment that they are not cognitively able to learn (Mirenda, 2003).

Literacy: The Interactive Process

In the past decade, the instructional pendulum has shifted toward practices that support balanced literacy theories and the belief that children with autism and other developmental disabilities can participate meaningfully in literacy learning experiences alongside their peers (Kliewer & Biklen, 2001; Koppenhaver, 2000; Mirenda & Erickson, 2000). Research regarding literacy learning in typical children has challenged the notion that reading and writing are primarily the result of an accumulation of sub skills (Au, 1998; Arlington, Block & Morrow, 1998). Instead, literacy is often viewed as an interactive process that encompasses the use of listening, speaking, reading and writing related to everyday life (Teale & Sulzby, 1986). The National Center on Educational Outcomes divides literacy into academic literacy and functional literacy (Ysseldyke & Thurlow, 1993). Academic literacy refers to the ability to engage in and master academic material taught in school. It also includes word analysis, comprehension, and fluency skills for deriving information from adult reading materials in the general community. For example, a

minimum of a fifth-grade reading level is needed for a person to be able to read newspapers and other materials encountered in adult life (Browder, 2001). Functional literacy refers to sight word reading and the communication abilities necessary to perform daily routines in various environments. For students with moderate and severe disabilities, the outcomes of a functional reading program include (a) comprehending words needed to manage activities at home (e.g., food preparation, medication directions), in the community (e.g., grocery words, menus), at work (e.g., job schedule), and at school (e.g., schedules, room names); (b) making safe responses when encountering warning words (e.g., "do not enter"); (c) using printed words to make choices (e.g., music or TV selections); and (d) accessing new opportunities through increased skills in reading (e.g., taking up hobbies that involve some reading), (e)participating more fully in general education lessons (Browder, 2001).

According to Chandler-Olcott and Kluth, the best place for most students with autism to develop literacy skills and strategies for life is in the inclusive classroom with same-age peers (2009). Additionally, Kliewer and his colleagues researched nine inclusive classrooms enrolling preschoolers and kindergarteners with significant disabilities, including autism, and found that when these young children were positioned as sense-makers who could draw on multiple modes of representation, including role-playing, storytelling, and art, they constructed narratives as full participants in the classroom community (2004). Furthermore, a case study of a 13-year-old boy with autism who had been placed in general education classes since preschool revealed that interaction with others in print and language-rich environments helped him to integrate written literacy, such as his own typed comments, into a classroom of his peers (Hendrickson, 2001).

Past research concerning the factors related to successful literacy learning suggests that learners with and without disabilities may be more similar than previously thought (Cunningham et al, 1991; Koppenhaver, Pierce, Steelman & Yoder, 1995). Home environments that are rich in communication, that support children to develop effective and efficient communication skills, that provide access to print materials, and that include models of functional literacy use appear to facilitate early literacy learning in all children (Erickson & Koppenhaver, 1995; Marvin & Mirenda, 1993). The expectations of parents and teachers are also extremely influential, especially for students with disabilities (Erickson & Koppenhaver, 1997).

It is increasingly clear that most, if not all, students with autism can benefit from literacy instruction that incorporates the use of multiple instructional strategies that are carefully matched to the stages or phases of development through which all readers pass on their way from emergent reading to skilled reading (Mirenda, 2003). Definitions of literacy that focus solely on reading words provide too narrow a framework for many students with severe disabilities. Obtaining information from the environment may be accomplished in a variety of modes, such as visual literacy, which is the ability to discern meaning conveyed through images.

A component of visual literacy is picture reading (Alberto, Fredrick, Hughes, McIntosh & Cihak, 2007). The ability to read pictures allows for the use of individual or sequences of picture prompts developed by teachers for performance of classroom, community, and related tasks. Children with autism typically have difficulty communicating with others, and often utilize augmentative communication strategies through uses of picture exchange communication systems (PECS), augmentative communication machines, or sign

language to establish a communicative pattern. These strategies involve the child recognizing pictures to communicate with their peers or teachers.

An estimated two million Americans have significant communication disabilities and require augmentative and alternative communication (Light & Kent-Walsh, 2003). Five times as many children and youth with the label of autism were served under the Individuals with Disabilities Education Act in 2006–2007 than had been 10 years before (National Center for Education Statistics, 2008), and efforts by parents, educators, and disability rights advocates have led to increases in the number of these students placed in regular education classes with their peers. Between 2002 and 2005, the number of students with autism placed in a regular classroom for 80% or more of the school day increased by 5% (National Center for Education Statistics, 2007). These demographic trends have coincided with the federal government's codification of higher expectations for achievement by students with disabilities, including autism, in the No Child Left Behind Act of 2001 (Yell, Drasgow & Lowrey, 2005). The use by many students with autism of various technologies to support their communication is a way that their presence in inclusive classrooms can help expand everyone's conception of literacy (Chandler-Olcott & Kluth, 2009).

Literacy skills are extremely important to all individuals, and they are dramatically important to children with autism because these skills provide a channel for educational assessment and learning and enhanced vocational opportunities, promote self-expression, and facilitate independent living (Light & Kent-Walsh, 2003). Given the critical importance of literacy skills for individuals who require assistance with communication, it is of great concern that most individuals who do require assistance experience difficulties in literacy development. Their skills lag behind those of typically- developing peers, and these

problems persist into adulthood. Clearly, intervention is essential to improve literacy outcomes for individuals with significant speech and communication impairments.

Emergent literacy development is crucial for individuals who require assistance in communication to ensure that they are well prepared for more formal reading and writing instruction (Light & Kent-Walsh, 2003). In particular, emergent literacy delays are prevalent in children exhibiting language impairment—either as primary disability or secondary to other conditions, such as autism or mental retardation. For these youngsters, delayed emergent literacy typically includes all key areas of emergent literacy, including print awareness, phonological awareness, alphabet knowledge and metalinguistic awareness (Boudreau & Hedberg, 1999). In contrast to their peers with typical development, students with ASD are likely to exhibit an uneven profile in developing the varied continua of skills that are predictive of reading. For example, qualitative and data-based case studies and individualized educational chart reviews reveal that some students with ASD may know the alphabet and be able to read some words despite having language difficulties (Church, Alisanski & Amanullah, 2000; Koppenhaver & Erickson, 2003).

Delays in emergent literacy development occur for a variety of reasons, with an important factor being less frequent exposure to and participation in literacy events (Marvin & Mirenda, 1993). In turn, emergent literacy knowledge provides the foundation for children's development of conventional literacy skills, including reading and writing. Such circumstances may directly contribute to later difficulties with conventional literacy achievement for children with disabilities (Katims, 1996).

Most early literacy experiences are embedded in social interactions mediated by literate adults, such as story reading (Light & Kent-Walsh, 2003). These interactions have

been widely recognized as natural contexts for language and literacy learning for young children. During the interactions, adults provide children with opportunities to develop vocabulary, discourse, comprehension, and pre-literacy skills. With repeated readings of familiar stories, children have the opportunity to develop competence in talking about the story and taking meaning from the text, and they gradually assume more active roles in storybook interactions (Light & Kent-Walsh, 2003).

Research suggests that children who require communication assistance have qualitatively different experiences that may affect their development of emergent literacy. Their adult partners often do not naturally provide supportive opportunities for these children to develop their skills within story reading interactions. Adults typically dominate the interactions and provide few opportunities for children to take communicative turns. They often do not provide the children with access to their communicative systems during these interactions, and they tend to emphasize the more mechanical aspects of book reading, rather than the meaning of text (Light & Kent-Walsh, 2003). If teachers don't make modifications to this instructional approach, many students with autism can be excluded, either figuratively because they become disengaged from the text or can't participate in the discussion, or literally because behavior perceived by the teacher as distracting causes them to be removed from the setting (Chandler-Olcott & Kluth, 2009).

One practical means of promoting the frequency with which children participate in informal literacy activities is adult/child-shared storybook reading. Indeed, many scientists and educators have asserted that adult/child-shared storybook reading is a powerful way to promote emergent literacy development in young children, including youngsters with disabilities (Arnold, Lonigan, Whitehurst & Epstein, 1994). It is often difficult for children

with autism to participate in informal literacy activities because some of them cannot conform to standard expectations, like sitting for longer than ten minutes without engaging in an inappropriate behavior. In some instances, the opportunities for these informal activities are too difficult to engage in with these children and teachers and parents are frustrated by the lack of independence and capability of the student. So, the pursuit for these activities diminishes over time. Chandler-Olcott and Kluth (2009) argue that children with autism create a learning environment that everyone can benefit from, and that teachers should adjust, create and mediate the circumstances by which these children are offered the opportunities for literacy development. Otherwise, they assert that a valuable learning experience may be lost by not including these children in classroom experiences.

Naturally as the uniqueness of ASD is uncovered and the awareness of the disorder fuels further research, it seems plausible that the way in which we define literacy may change in relation to children with ASD. Students with ASD require unique and different learning opportunities therefore, the need for educators to utilize new and innovative practices to enhance literacy achievement in this population is vital. The next section of this review will discuss some of the literacy issues.

Expanding Our Changing Definitions of Literacy

Given the changing face of literacy in the 21st century, it is imperative that educators consider ways to help students develop the skills required to read and write, often using multiple text forms, including but not limited to, traditional typographic print (Lankshear & Knobel, 2006). Increasingly, educational researchers are calling for schools to teach students to read, write, question, and understand many forms of media. Children who lag behind peers in language proficiency are thought to especially profit from an accumulation of

encounters with the same story presented with multimedia features (Linebarger, Kosanic, Greenwood & Doku, 2003). Understanding how young children become conventionally literate continues to be a compelling task for researchers and teachers alike. As many as one-third of all children experience difficulties with learning to read which then influences later academic performance (Whitehurst & Lonigan, 2002). Using a variety of visual artifacts allows some learners to grasp early language with a medium that they not only prefer but require. Through and within meaning-making events, a curriculum rich with opportunities for authentic encounters with literacy and with others in purposeful, meaningful work is possible. Focus on print-related knowledge and the reduction of curricular activities involving storytelling and play may work to inhibit the ontological work of early childhood that leads to literacy learning. While some argue that emergent literacy by definition is about learning the forms and functions of print, it seems clear that those forms and functions constitute simply the surface structures of knowledge about language. Such surface-level knowledge is only as useful as the deep structures that have been built in the self—those dialogic encounters that afford rich, generative experiences in the world of text (Lysaker, 2006). Acknowledging the importance of development of the "self that reads" and the self-capacities that are shaped during early childhood may be an important addition to how we define emergent literacy and how we approach young readers and writers instructionally (Lysaker, 2006).

Vygotsky (1978) stated that children capitalize on the narrative impulse that emerges in their earliest representational drawings, on their tendency to create stories in drawings, and on the talk that surrounds and supplements drawing events. Student talk and teacher conversation are tied to social learning theory and lead to an inquiry of questions. Student

talk allows teachers to engage the student in the literary setting and provides opportunities for questioning, directing, assessing, instructing, and praising the student (Sidelnick & Svoboda, 2000). According to Piaget (1962), children between the ages of one and three are constructing the basic rules for linguistic, gestural, and visual forms of reference for general forms of communication (Golomb, 2004). Researchers have linked play, language and graphic symbols as a shared basis for cognitive development (Dyson, 1990; McCune, 1985). Children with learning disabilities are often developmentally and emotionally several years behind their actual chronological age. Written language is more difficult for these students, and often the physical act of forming the letters is a struggle. The nonverbal nature of communication with a paired visual event therefore offers a unique perspective on the learning process of a child with autism. The strategy of "reading" a picture, part by part, and using it as text aligned with other curriculum areas may be known but underused by many reading teachers. Increasingly, attention has been paid, not only to core reading, writing, and listening skills, but also to "seeing" (Flood, Lapp & Bayles-Martin, 2000). Jalongo and others suggest that through wordless books, emergent readers and children with learning difficulties can draw upon interpretive skills (2002). This inclusion of pictures as literacy has considerably stretched the textual borders of what has previously qualified as literacy.

In one such case, children were taught to recognize sight words by labeling everyday objects and attaching the written word to specific pictures or icons (Oelwein, 1995). Through repeated associations of the written word with the pictures, the children learned to recognize sight words. As reading and interacting with sight words became meaningful and motivating, teachers worked ‘‘backwards’’ to teach concepts of individual letters and sounds from the known words (Oelwein, 1995). This is not to imply that learning sight vocabulary

is a paired-association task, but rather that, for these children, visual perceptual learning preceded alphabetic and phonic learning (Kaderavak & Rabidoux, 2004). In an article by Braun, children with ASD used the visual approach of Oelwein's methodology, which focuses on the whole-word sight approach, paired with visuals of either a picture or sign language (2004). Braun's article suggests that integrating a visual piece with the language or print can allow the student with ASD to begin to construct language. Furthermore, findings from a recent and seminal review established the efficacy of sight word reading approaches for most students with significant cognitive disabilities, including children with autism (Browder, Wakeman, Spooner, Ahlgrim-Delzell & Algozzine, 2006).

Temple Grandin, an adult with autism who is a renowned professor in agricultural studies, (1995) stated, "Spatial words such as over and under had no meaning for me until I had a visual image to fix them in my memory" (p. 30). Janzen (1996) emphasized the importance of providing visual support so that students with autism can process an entire message. Although there is wide scale use of visual strategies by educators, only a minimal number of studies on using visual strategies with students with autism have been published (Dettmer, Simpson, Myles & Gantz, 2000; Roa & Gagie, 2006).

Drawing as Literacy

The goal of most art activities for children is not to train artists but to offer opportunities for self discovery and self discipline so children may relate to their environment as healthy and integrated individuals (Pat-Martin, 2001). Child art is acknowledged to be uniquely different from adult art. A child begins to draw as a normal part of effort to explore, to manipulate, to seek order and to control themselves in their environment. Children who are appropriately encouraged along developmental patterns tend

to achieve a higher level of skill. Pat-Martin (2001) states that children's art follows a sequential pattern of growth and development. The art of each child reflects his level of self-awareness and the degree to which the student is integrated within their environment.

Children with ASD are often delayed in specific areas of functioning compared to typical students, therefore, their drawings and art often develops more slowly in comparison. There are limited studies on children with ASD and the typical stages of development pertaining to drawing but drawings can be an important form of communication and tool for assessing emergent literacy growth. Barnett and Henderson's (1992) study of figure drawing of children with dyspraxia is a relatively rare example of research in the field of special needs and drawing, albeit not of autism. This study concluded that drawing practice had significant beneficial results on the development of spatial awareness and hand and eye co-ordination. Piotrowski (1996) suggests that anecdotal evidence of the value of art education in the field of special needs may arise not so much from a reasoned argument supporting the validity of art education, but rather a habituated response to art as a good thing for children with special needs. She suggests that there is a somewhat spurious belief that art is a non-academic subject and that therefore it is 'suitable' for children with special needs. The work of Evans and Dubowski (2001) with children with autism in a residential setting supports their belief that art therapy is particularly conducive to facilitating communication in its widest sense. These authors are at pains to define communication in this context not as spoken language, but rather as subtle interactions of reciprocal movement, gesture and response.

Evans and Dubowski (2001), in *Art Therapy with Children on the Autistic Spectrum*, emphasize the value of art therapy for children with autism but acknowledge the often extremely challenging nature of working with this group of children. Evans reports on the

difficulties she experienced in 'picking up' on the non-verbal body language that her client, a young boy with autism, displayed. Evans draws attention to the need for the therapist to cultivate sensitivity to ways of communication other than through speech. She describes the need for skilled empathetic shadowing of the child in order to establish rapport conducive to learning. Her description of empathetic practice is characterized by a child-led rather than adult-dictated approach.

Notably, a small minority of children with autism exhibit drawing skills that are considerably advanced for their mental age (Selfe, 1977, 1983; Wiltshire, 1991). One explanation of such phenomena is that children with ASDs are sometimes also considered savants and are impaired in their ability to conceptualize their world. According to this idea, a lack of expectations about what is to be seen in the environment makes it easier to achieve an accurate depiction of what is really there (Snyder & Thomas, 1997). The observation that the children sometimes lose the ability to draw in a realistic way once language develops (Selfe, 1983) bolsters the suggestion that it is deficient conceptualization that is responsible for instances of outstanding artistic ability.

Hermelin and O'Connor (1990) compared accuracy and artistic merit in the drawings of eight individuals with savant abilities (four of whom had autism) with that of eight artistically-able typically-developing children; they concluded that while the accuracy of drawings might be related to intelligence, artistic quality was not. Selfe (1983) constructed a detailed psychological profile of six young people with autism with severe learning difficulty that had exceptional drawing ability. She reported how these individuals were delayed to start drawing, and then instead of scribbling, they produced a recognizable object at their first attempt. Their earliest representations covered a wide range of unconventional subjects such

as churches, yachts, windows, horses, flowers, and cars, but in contrast to every typically-developing child in the control group, only two of these children included human figures among their first drawings.

There are complementary studies of children with autism who do not have special artistic abilities. Lewis and Boucher (1991) examined the drawings of such children for their content and the strategies used for generating ideas. Participants were initially requested to draw anything they liked, to give their drawing a title, and then to produce nine pictures that were different from each other. For a further 10 pictures, the children were told that they must not copy anything they could see. Groups of children with and without autism were not different on drawing skill or content, including amounts of detail, nor on their ability to draw human figures as assessed by the Goodenough scales (Goodenough, 1926). However, the children with autism were significantly more likely to produce drawings that were related to one another than were the control participants without autism. The investigators concluded that children with autism have impaired generative ability, or fail to use their generative ability to produce varied sets of drawings. People with autism form concepts in a different manner than others. For the individual with autism, details are assigned into categories, which then are used to form a larger concept. "I take lots of little details, and I put them together to form a whole," said Dr. Grandin. "It's bottom-up thinking. It's like putting together the pieces of a puzzle. For most people, it is top down thinking. Forming concepts is also a sensory-based, as opposed to word based, process for people with autism (Uffen, 2001). Dr. Grandin suggests that there is evidence that teachers do not expand the child's ability to categorize and classify sets (2000). This leaves students with language deficits as they try to assimilate those things just on the fringe of set to another set. There is evidence

that expanding the ability to label, categorize and classify, provides a building block for language, literacy and other cognitive concepts (Grandin, 2002). Studies examining visual realism (the ability to represent what one can see) and the ability to identify real and imaginary pictures have suggested that children with autism are not exceptional in these respects (Charman & Baron-Cohen, 1993; Eames & Cox, 1994; Leevers & Harris, 1998).

To the child, each scribble has particular significance, and those observing young children may gain insights by listening to the child's simultaneous utterances. Young children frequently interchange the terms draw and write as they discuss their work. Drawing does not necessarily precede writing but may develop simultaneously with it. The transition may not be from speech to writing, but from drawing to writing, as the connection to language is made. In many ways, art is the first language of the beginning reader and writer. Children usually draw or paint before they write. They use what might look like simple scribbles, squiggly lines, scratchy marks, and blobs to represent something else; however, the connection to writing is clear (Church, 2005).

The notion of drawing as a simultaneous event gives further credence in the work of Nutbrown (1999) whose study of schema led her to propose, "Given that children working on particular patterns of thought can represent their schemas through making marks and talking as well as through their actions, it may follow that 'vertical' and 'back and forth' schemas emerge before 'enclosing and enveloping' schemas" (p. 21), a conclusion linked to Kellogg's suggested developmental sequence of scribbles. If one accepts this hypothesis, then it follows that these very early drawings form an important part of children's learning. Such activities allow rules to be explored and the child to choose the direction, shape and format appropriate to that moment (Matthews, 1994). The use of art and other visual concepts

connected to children's play may further the development and understanding of children's environment (Swann, 2009). Consideration of children's utterances while drawing is more likely to be found in texts relating to pre-literacy, where links are made between mark making and emergent writing. Pahl (1999) suggests that drawing helps the child externalize a thought and is a first step in creating symbols to represent real objects. Kress (1997), in his book *Before Writing,* goes further in stating that the form and content of the drawings is as powerful as composing and writing. Children do not think only in written language but in visual image as well. Responding to picture books helps them cross over and discover meaning in nonverbal representations (Bloom, 2001). By looking at pictures to determine how they communicate and elaborate a story's message, children make a smooth transition from image to language (Piro, 2002).

Art provides a "common ground" between students with autism and the teacher because—unlike many other subjects such as math or science--it is less dependent on verbal communication and less fundamentally concerned with cognitive ways of knowing (Osborne, 2003). Teachers of children with special needs are usually well-versed in empathetic communication because they've had to develop an alternative to verbal communication.

Children come to school with a multitude of differences as a result of racial, ethnic, socioeconomic, and cultural influences. Ideally, approaches to learning should focus on the individual child's unique strengths and styles of learning. While the arts have value for teaching all children, they are especially motivational for youngsters who otherwise may be unreachable. Aesthetic, narrative, and reflective inquiries using the arts help children attain new conceptual language, to organize and express their learning, and serve as an instrument for acquiring knowledge. Many basic skills can be introduced, explored, understood, and

mastered if taught in conjunction with a visual activity. The relationship between seeing, telling, drawing, and writing is intimate, essential, and a significant aspect of teaching the writing act. Drawing can be used to give children with learning disabilities the desire to learn and to write. It can create a bridge between the ideas in a child's head and the blank piece of paper on the desk. Art offers a way to solve problems visually and to plan responses. It forces children with autism to be less literal and concrete in self-expression, and it offers a nonthreatening way to deal with rejection (Epp, 2008). It replaces the need for tantrums or acting-out behaviors because it offers a more acceptable means of discharging aggression and enables the child to self-soothe (Henley, 2000).

Artistic expression often enables students with special needs to translate what they know and perceive into another medium or modality so they can express meaning (Sidelnick & Svoboda, 2000; Osborne, 2003). Armstrong (1993) believed that individuals with learning disabilities could gain access to skills and information by using alternative symbol systems that match their stronger intelligences. He felt that there are ways to use these strong intelligences to overcome weaker ones by linking what the student is learning with as many different intelligences as possible. While an individual may not find connections to all of Howard Gardner's intelligences (1983), for any given learning set, the more intelligences that are activated, the stronger the cognitive and neurological bridge between weaker and stronger sectors of the brain.

While children come to school with a variety of diverse patterns of strength in the various intelligences (i.e., verbal/linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, interpersonal, and intrapersonal), it is equally important to realize that teachers enter their classrooms with differing knowledge base and a distinctive set of

individual preconceptions. Each teacher has his or her own philosophical foundation that is the source for ideas, opinions, and wisdom on ways to support students' learning. Educators make daily decisions based upon their own past experiences, often creating their own perceptions of their students' abilities. Additionally, teachers' personal beliefs have long since been researched as impacting student achievement. The last section of this review addresses teacher perceptions and self-efficacy beliefs because they are crucial to success in surmounting the literacy obstacles that most students with ASD encounter.

Teacher Perceptions and Self-Efficacy

Gary Mesibov (2003) refers to autism as a "culture," in that it yields characteristic and predictable patterns of behavior in individuals with this condition. The role of the teacher of a student with autism is like that of a cross-cultural interpreter—someone who understands both cultures and is able to translate the expectations and procedures of the non-autistic environment to the student with autism. Educators must understand the culture of autism and the strengths and deficits that are associated with it (Mesibov & Shea, 2003). There is now a tremendous amount of information available on ASD with significant variation in methodology between different treatment approaches (National Research Council, 2001). Given the wealth of information available, it can be difficult to determine which strategies are appropriate for each situation. It is important that educators are able to identify research and socially-validated strategies that are effective for meeting the educational, social, and behavioral needs of children with ASD (Simpson et al., 2005).

Teachers make judgments on a regular basis about the ability of students, and their appraisals can have critical implications for curricular and instructional opportunities and decision making (Alvidrez & Weinstein, 1999). Furthermore, teachers' judgments about

abilities may be conveyed to the student. Teacher judgments have been recognized as strong predictors of future achievement (Alvidrez & Weinstein, 1999). Perry, Guidubaldi, and Kehle (1979) demonstrated that kindergarten teacher ratings of children's social competence predicted their third grade spelling and math achievement as well as IQ scores. An examination of teacher ratings of classroom behavior found that first grade teacher ratings on interest, participation and attention span restlessness scales correlated with student achievement test scores at the end of that year and with student grades over the next three years (Alexander, Entwisle & Dauber, 1993).

Teachers' perceptions of their students' characteristics influence the strategies that teachers use and the efforts they make in their classrooms (Biddle & Anderson, 1996; Wenglinski, 2000). What teachers do influences students' learning (Chung, 2002; Green, Miller, Crowson, Duke & Akey, 2005), including the quality of students' academic motivation, effort, and self-perceptions regarding school and tasks (Hidi & Harackiewicz, 2000; Reeve, Jang, Hardre & Omura, 2002). Because teachers' perceptions play a critical role in students' academic success, it is important to understand the factors that contribute to the formation of these perceptions (Seligman et al., 1972). Hudson (1996) stated that a student who makes an unfavorable first impression on a teacher will have to perform much better than other students because first impressions are resistant to change. Consequently, students who are positively perceived by teachers will make greater gains in school and have better educational opportunities than those who are perceived negatively. Hudson concluded that, in light of the evidence of subjective inequality, stereotypes, and language-based prejudice, educators need a better understanding of the potential that their perception (and possible prejudice) can have on a child's education (Overby et al., 2007).

According to Dweck (2000), how individuals define intelligence affects their views towards others' capabilities, which influences how they interpret and react to situations involving these individuals. Individuals who believe that intelligence is malleable and can be cultivated through learning hold an incremental theory of intelligence. Those who subscribe to an entity theory of intelligence believe that intelligence is fixed, uncontrollable and cannot be changed. Incremental theorists are more likely to explain student success and failure as a result of the degree of effort expenditure, persistence and motivation, whereas entity theorists are more likely to explain the outcomes—both successes and failures—in terms of intelligence. Teachers' beliefs about appropriate practices and classroom instructional content become especially important considerations as preschool programs increase their academic focus and expand enrollments of diverse populations of children (NCEDL, 2005).

The link between preschool teachers' beliefs and instructional content is supported by research (Kowalski, Pretti-Frontczak & Johnson, 2001; McCarty et al., 2001), as is the link between measures of teachers' beliefs and the use of developmentally-appropriate practice in preschool and early primary grade classrooms (Cassidy, Buell, Pugh-Hoese & Russel, 1995; Cassidy & Lawrence, 2000; Stipek & Byler, 1997; Vartuli, 1999). Stipek and Byler (1997) reported that teacher beliefs about appropriate practices in early childhood education—for example, whether they should be child-centered, oriented toward basic skills, or involve intentional instruction—are reflected in classroom practices. The literature also supports the idea that a teacher's goals for what he/she wants to achieve with his/her students and classroom structures are rooted in the teacher's beliefs.

The challenge for researchers studying teacher characteristics and teacher beliefs is finding empirical work on specific content areas. Brown (2005) studied teacher attitudes,

beliefs about mathematics, and classroom practices in a sample of 20 preschool teachers. Evidence supported a relationship between teacher efficacy and beliefs, as well as between efficacy, beliefs, and mathematics classroom practices. These results add support to the findings of Kagan (1992); Nespor (1987); Spidell-Rusher, McGrevin & Lambiotte (1992), who reported that teachers' beliefs tend to align with classroom practices. However, these findings are different from those reported by Graham, Nash, and Paul (1997) who found that preschool teachers believed that mathematics knowledge is important, but observations of the teachers' classroom behaviors showed little mathematics instruction. There are limited studies to support an emphatic causal relationship between teacher perceptions and student outcome.

With regards to children with autistic spectrum disorders who were included in mainstream, Mavropoulou and Padeliadu (2000) found that regular education teachers were more concerned with social and psychological well-being while special education teachers were more educationally goal-oriented. When both groups of teachers were asked about their current success in including students with disabilities in their classrooms, general teachers rated their understanding of inclusion and their ability to motivate students lower than special education teachers (Buell, Hallam, Gamel-McCormick & Scheer, 1999). Ward, Center, and Bochner (1994) compared attitudes toward inclusion among principal teachers, general mainstream teachers, resource teachers (learning support teachers), school psychologists/counselors, and nursery school teachers and found that the general mainstream teachers held the most negative attitudes toward inclusion. This concept is a cause for concern, as negative attitudes towards children with disabilities are likely to have a harmful impact on the outcome of inclusive educational practices (Tait & Purdie, 2000). Clark

(1997) found that children with identified learning difficulties were more likely to be rewarded after failure than their peers with no identified learning difficulties. Teachers expressed less anger and more pity towards the children with learning difficulties and held lower expectations of their future success.

How comfortable a teacher feels around children with disabilities in general is also likely to have some impact on his/her attitude towards teaching children with learning support needs. Studies by Leyser and others (1994) and Parasuraman (2006) have both suggested there may be a relationship between experience with children with disabilities and teachers' attitudes. Using Gething's (1991) Interaction with Disabled Persons Scale (IDP), Forlin, Tait, Carroll, and Jobling (1999) found that the student–teachers who felt most comfortable in their interactions with people with disabilities were those who had regular contact, for example, at least once a week.

Teacher self-efficacy has been shown to predict student motivation and achievement (Ashton & Webb, 1986; Midgley, Feldlaufer & Eccles, 1989; Moore & Esselman, 1992; Ross, 1992), students' self-efficacy and attitudes (Anderson, Greene & Loewen, 1988; Cheung & Cheng, 1997), teachers' goals and aspirations (Muijs & Reynolds, 2002), teachers' attitudes toward innovation and change (Fuchs, Fuchs & Bishop, 1992), teachers' tendency to refer difficult students to special education), teachers' use of teaching strategies (Allinder, 1994), and the likelihood that teachers will stay in the teaching profession (Burley, Hall, Villeme & Brockmeier, 1991; Glickman & Tamashiro, 1982). Bandura (1986) offered a formal definition of self-efficacy: "Perceived self-efficacy is defined as people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (p. 391). Self-efficacy is a belief about what a person can do rather

than judgments about one's attributes, which are characteristic of self-concept (Bong & Skaalvik, 2003; Zimmerman & Cleary, 2006). Furthermore, self-efficacy is a multidimensional and context-specific construct (Zimmerman & Cleary, 2006), and there is no all-purpose measure of self-efficacy beliefs (Bong, 2006).

Bong (2006) underscored that context specificity should not be confused with level of generality and that self-efficacy beliefs may be skill-specific, task- specific, or domain-specific. Efficacy beliefs determine how environmental opportunities and impediments are perceived (Bandura, 1987) and affect choice of activities, how much effort is expended on an activity, and how long people will persevere when confronting obstacles (Pajares, 1997). Indeed, research has shown that teachers who have a higher sense of efficacy have greater commitment to teaching and stay longer in the profession (Glickman & Tamashiro, 1982). Kagan (1992) commented that "the more one reads studies of teacher belief, the more strongly one suspects that this piebald form of personal knowledge lies at the very heart of teaching" (p. 85)

Studies have been generated to address topics of teacher beliefs and perceptions in order to determine their effect on student achievement. Children on the autism spectrum present such unique learning challenges that it often creates apprehension in decision making by educators, only causing further self-efficacy anxiety and possible distorted perceptions. For purposes of this study, it is relevant to assess the influence of perceptions and beliefs of a teacher and whether they have an impact on the acquisition of literacy in students with ASDs. Students with ASDs present complicated questions about how best to support literacy growth.

Chapter Summary

Autism is a life-long debilitating disorder that is becoming more prevalent in our population. The need to unravel the complexity of the disorder and to advance research to assist children with ASD to lead functional lives is of vital importance. Although there are many new treatments, interventions, and educational strategies that are gaining recognition, ASD nevertheless remains largely mysterious**.**

It is imperative that educators and researchers discover and provide the pedagogical strategies that allow children with ASD to embrace literacy in a way that supports their unique learning style. After all, literacy extends throughout the entire curriculum. It is equally important that teachers believe that children with autism have the ability to acquire literacy, and that teachers design a classroom and implements strategies that supports literacy learning for all. Every child has the right to be fully understood and educated in appropriate and effective ways and given the opportunity to develop to full potential. Understanding unique learning styles and teaching to a student's strengths is a critical portion of every teacher's responsibility in modern times. Differentiated instruction addresses individual learning needs and adjusts instruction to fit the skills and experience level of each student in a classroom (Smutny, 2003). In this decade, it is increasingly more eminent that managing multiple instructional needs in the classroom is of great importance, not only for the individual student, but for society. In 1916, John Dewey argued that everyone has the right "to live as a social member so that what he gets from living with others balances with what he contributes. What he gets and gives as a human being, a being with desires, emotions and ideas, is not external possessions, but a widening and deepening of conscious life, a more intense, disciplined, and expanding realization of meanings" (p. 360). It is with Dewey's

words that we recognize the importance of understanding each student and the elements that contribute to their deeper learning.

Chapter Three will outline and discuss the method of data collection and the setting of this study. Interviews were conducted with two special education teachers to examine their perceptions of the literacy learning processes of two children with autism who were students in their classes. In addition, observations were conducted in their respective classrooms to examine their distinctive practices in literacy instruction for young children with autism. Furthermore, the researcher evaluated their classroom environment for literacy centers and curriculum use. Additionally, interviews were conducted with two sets of parents of the students with autism in order to gain perspective on their literacy beliefs and the student-parent relationship. Lastly, the work students created during the observations was collected to further authenticate the literacy experiences in the classroom. Chapter Three will also outline the research instruments used and describe the plan for analysis of the data.

CHAPTER THREE

PROCEDURES

Introduction

The purpose of this study was to explore the beliefs and practices of kindergarten teachers who teach emergent literacy skills to children with autism. The researcher conducted case studies of two teachers utilizing a variety of qualitative methods that included in-depth interviews, classroom observations and analysis of artifacts produced by two students with autism. In addition, the researcher interviewed the parents of the two students that were selected for artifact collection. The parent interview allowed the researcher to gather additional information and perspective that a student with limited communication abilities could not provide. This chapter will provide a foundation and rationale for the use of these methods and describe the measures that were taken to assess the acquisition of literacy in children with autism. It will further explain the methods used to analyze and interpret the information that was collected.

Qualitative Research

Qualitative case studies may be characterized as detailed studies of separate cases intending, on the one hand, to identify and describe phenomena and, on the other hand, to contribute to the development of theory (Kenny & Grotelueschen, 1984). Through qualitative case study it is possible to show the complex connections among diverse factors and to provide explanations at different levels (e.g., the teacher, the pupil, the classroom, the school and its context). The combination of the participants' perceptions of school reality and the observations of researchers add to the value of this research method. Qualitative researchers engage the "routine and problematic moments in individuals' lives" through the

"studied use and collection" of a wide array of empirical materials (including, for example, in-depth interviews, participant observation, personal experiences, archival texts and photographs) (Denzin & Lincoln, 2005, p. 3). Merriam (2003) suggests that qualitative research that is concentrated on discovery, insight and understanding of a selected topic offers the greatest potential for making a contribution to the field of education. Glesne (1999) believes that the methods researchers choose say something about their views of what constitutes valuable knowledge. In addition, researchers choose their methods based on their perspectives on the ontology (i.e. nature of reality). Consistent with Glesne's (1999) and Merriam's (2003) stance, the decision to use qualitative methods for this study was based on what is paramount for the researcher; namely, a better understanding of the literacy acquisition of children with autism and the hope that this study contributes to the educational practices of this population. Qualitative methods such as interviews, observations and collection of artifacts permit the researcher to delve into the experiences and belief systems of teachers, parents and students.

The researcher interviewed two kindergarten teachers to gain insight into their beliefs and practices of teaching children on the autism spectrum (Appendix A). Observing the participants during instruction was a way to witness the implementation of what they reported they believed in. Did the teachers engage in the philosophy that they said they practiced in the classroom? What actions did the teachers take that demonstrated—or failed to demonstrate their self-reported beliefs?

Collecting and analyzing the work of several children allowed the researcher to analyze the effects of instruction on the children's work. Did the children respond to

the literacy experience? How did they demonstrate what they had just learned? How did their actions provide a glimpse into their literacy growth? In addition, the researcher interviewed the parents of the children with autism in order to gain perspectives into the teacher-student relationship. How did the parents perceive the teacher-student relationship? What were their feelings about literacy and their children?

In the next section, the process of selecting the research participants will be discussed. Additionally, the section will describe the site of this research study.

Selection of Research Participants

The selection of possible participants began by first establishing specific criteria. Teachers had to hold valid Pennsylvania special or regular education-teaching certificates and needed to have experience teaching children with autism. Additionally, it was important that the teachers believed that children with autism have the ability to acquire literacy skills.

The researcher initially contacted a school district to participate in the study and they declined the invitation. After several unsuccessful attempts to involve public school districts, the researcher was able to secure the participation of teachers from an Approved Private School (APS) for children with autism. A school that has APS status in Pennsylvania is approved by the local school district and the Department of Education and is still entitled to a percentage of state funding like a public school district. The Director of Education agreed to participate in the research study and was given a letter to read and a consent form to authorize permission (Appendix B).

The researcher decided to ask three teachers from the APS school (based on the director's initial recommendations) if they would be willing to be interviewed, observed and have their students' work examined. All three teachers agreed to participate initially and were given consent forms to verify their agreement (Appendix C). The researcher began to

make the first contacts with teachers to arrange interviews. Three teachers (who met the inclusionary criteria) agreed to participate. With the assistance of the Director of Education and the participating teachers, parents were solicited for participation through a letter and a consent form (Appendix B). Parents were sought out to be interviewed regarding their beliefs of the acquisition of literacy in the home and classroom for their children (Appendix D). Consequently, two sets of parents agreed to be interviewed (Appendix E). The parents who agreed to participate in the study expressed interest and gave positive feedback about the content of the research study. Unfortunately, one of the teachers who originally decided to take part dropped from the study after the interview process stating that she was too busy to continue. This teacher's demographic information and audiotape were destroyed.

Site of Research

This qualitative study was conducted at a private school which could be mistaken for an office building from the road. The playground was visible through the slats in a fence, and all of the swings and outdoor activities were housed inside. When school was in session, the back parking lot was packed with small, white school vans, and the walkway to the entrance was full of teachers escorting children through the doorway. Aesthetically, the outside was clean and white; the entranceway was barely recognizable if it were not for the glass door. The stucco walls gave the building a clean, yet cold look. As the researcher waited in the back of the line to enter, there were visible signs of children who were in need of extra attention getting on and off of the van. Occasionally, a teacher would have to run after a child who had run away. As the researcher approached the entrance, both doors opened automatically into the foyer. The walls, floor tiles and steps that led to the upstairs were a clay color. Ordinarily, the color may have been overpowering; however, it seemed

subdued in these surroundings. In the center of the foyer stood a huge, black-and-white marble table that hosted a flower arrangement and a sign-in sheet with pen. The researcher signed into the journal indicating the time of arrival. There were a few cushioned chairs scattered throughout the foyer, none of which seemed to match the clay-colored backdrop of the room's walls and floor. Although the foyer was an attractive space, none of the decorative elements seemed to match. There was a staircase and a sign that directed visitors upstairs to check in with a secretary. To the right of the foyer there was a wooden door that provided the entrance to the private school. On the wall next to the door a beautiful cherry plaque read, "Licensed by the Pennsylvania Department of Education," with a copy of the license beneath it.

The researcher pushed the doorbell to the right of the door, and an administrative assistant asked for identification. The researcher obliged by showing her license and was allowed to enter the facility. The administrative assistant opened her window and directed the researcher down the hall saying "follow the signs to the left." As the researcher walked through the entrance, the color of the inside of the school was white and appeared clean, clear and barren. There weren't any pictures on the walls, no displays, no distractions—just walls and office doors. The walls had a spotty type of paint that tended to camouflage dirt and other marks. The floor was nicely carpeted with a bluish pile that appeared to be resistant to stain and heavy traffic.

As the researcher turned left it became obvious that the classrooms were ahead and that the sunshine was bright even though the blinds were closed. The beams of light made the classrooms glow, and it was particularly easy to feel comfortable in the atmosphere. The school was warm and soothing, and the teachers were energetic and in high gear for the day's

events. The smell of toast was abundant through the facility, as several of the students were in the lunchroom getting their breakfast. The lunchroom resembled a kitchen in a home, since there were shelves of food and access to a refrigerator, microwave, toaster oven, water cooler, coffee pot and carts of supplies. The adolescent students lingered around, some standing while others were sitting. There were noises coming from all parts of the school—yelling, crying, humming, the beating of a drum, singing, shrilling…baaa, baaa, daaa daaa, mmmm, mmmm. Although the students were in their classrooms and not in the hallways, the classrooms appeared to be chaotic. One student emerged from a classroom and walked in front of the researcher chanting, "Good morning, WNEP News, good morning, WNEP News, good morning, WNEP News," until eventually he disappeared from view. Everyone appeared to accept the noise as the usual order for the morning. A passing teacher smiled at the researcher and said jokingly, "It is like walking into Saigon the first time, isn't it?" The researcher must have looked bewildered to have received that sort of comment. The researcher quickly learned to recognize that what appeared to be turmoil was the usual atmosphere of a private school for children with autism.

The school appeared to have a relaxed environment where students had the ability to choose what they wanted to eat and took responsibility for food preparation as well. It was a home-like environment where the researcher felt a family connection. Various people were in and out of classrooms greeting one another and greeting the children. The researcher seemed to be the only person in the location who was unfamiliar.

Students were encouraged to ask questions and often introduced themselves. A tall, lanky adolescent student confronted the researcher and asked what type of vehicle she drove. He introduced himself as Sawyer and told the researcher that he really liked the History

channel and that he liked to wear SpongeBob underwear all in the same breath. He lunged to hug the researcher, and a teacher quickly stepped in and asked him whether hugging strangers was an appropriate thing to do. Sawyer smiled and said, "No, but I like her." The teacher used this opportunity to discuss personal boundaries while she maneuvered him down the hall. He looked over his shoulder once and smiled a mischievous grin. The researcher had immediate fondness for the environment; there seemed to be an acceptance of the sometimes surprising behaviors of children with autism.

The classrooms on the first floor were lined up along the back end of the facility; all five of them had windows and a bright atmosphere. The lighting system was of particular interest, as it was not bright when you looked directly at it. The researcher later found out that the light fixtures were specially designed to limit artificial and overcast lighting. The director of the school shared with the researcher that the lighting was designed for the students because of their sensory sensitivities. Bright lights can often be over stimulating to children with autism (Maurice, 1998).

Each classroom was set up in a unique fashion, but all were understated. The classrooms were designed for a small number of students; there was just enough room for the maximum attendance of six children. The first classroom was set up with two tables, each with six chairs. In the farthest corner there were four Dell computers. There were very few pictures on the wall or displays, yet the classroom seemed comfortable and cozy. Along the side of the classroom, there were six desks enclosed by sectioned cubbies with two chairs at each station. The researcher assumed the cubbies were to promote individual work without disturbances. The classroom appeared clean and well-organized.

The other classrooms were set up in a similar fashion with some variation of furniture and materials. The walls were white with very few sources of distraction. In each classroom there were white boards that nearly covered every wall. However, the classroom at the end was an area designated as an indoor physical fitness room with climbing equipment, trampolines, jumping ropes, games, parachutes, and many other activities in which students engaged. The room had shelves of play materials that included stacking rings, puzzles, books, and matching items. There was a large swing hanging from the rafters that looked like a platform with a safety mat underneath. Giant pillows sat in the corner of the room in a pile next to a box of hair brushes, vests and squeeze toys. The room had a very distinct feeling of enjoyment.

The entire school was shaped like a square. The bathrooms were located directly across from a row of small offices. One of the offices was labeled, "Therapists," and it indicated speech, occupational and physical underneath with a whiteboard to sign in and out. The adjacent room housed several small televisions, monitors, and a security camera system. Parents and affiliated professionals were able to come anytime throughout a school day and observe children without distracting them or disrupting classrooms. Each classroom was set up with a video camera, and live footage of the classroom was available all day.

Further down the hallway there was a display of student work, and it proudly shouted across the top, "See What We Can Accomplish!" There were pictures on the bulletin board of the students on a field trip to a local nursing home where they visited and read stories with the elderly. There were six classroom teachers in the elementary portion of the school and several aides that rotated from classroom to classroom. There were a number of other professionals in the classrooms—nurses, behavior specialists, speech therapists, as well as a

crisis counselor who occasionally dropped by a classroom. The entranceway to the facility was also the exit, and the researcher was able to leave the facility with ease. A buzzing noise was heard throughout the school indicating that the door had been opened. The door buzzer evoked several staff to check who had left the facility, since some of the students had eloped from the school previously. The site of this study appeared to be a welcoming and enthusiastic place. There were many smiling faces among both professionals and students, and the culture of the school seemed easy and pleasant upon the initial visit.

Conducting the Teacher Interviews

Upon approval of all relevant documents, letters of consent (Appendix B, C, D), and initial permissions, contacts were made with the teachers to begin setting up times to meet for the interview. Each teacher was again informed of the study and the importance she could bring to the field of autism and emergent literacy. The three kindergarten teacher participants consented again and set up interview times at a mutually agreed upon location. At a later date, one of the candidates decided that she did not have the time to go beyond the interview with the researcher and, therefore, retracted her original consent to be a part of the study.

During the interview, arrangements were also made for the classroom observations. The two kindergarten teachers and researcher established the protocol for the researcher to adhere to while in the classroom. The procedure was individualized to meet each teacher's requests. It was mutually decided that the researcher would enter each classroom, walk to the back of the room, sit at a desk, and refrain from participation in the classroom activities. The location of the desk was to be different in the two rooms, as each teacher preferred to use a space that was conducive to her classroom structure.

All interviews were audio taped and transcribed for data analysis. A semi-structured interview was used with each participant. The interview lasted approximately one-and-a-half to two hours and consisted of informal discussion. Teachers were assigned a pseudonym to protect the confidentiality of their statements when reporting the findings of this study. The interview questions were created and formed by the researcher and focused on participant beliefs about children with autism and emergent literacy, as well as background information about each teacher. The in-depth interview questions were broken into three categories: general background, beliefs about literacy and autism, and expectations for students. At the completion of the interview, the researcher allowed a few moments for reflection and questions from the participant. The teacher and researcher planned the subsequent observations. One teacher seemed apprehensive about the observation process, and the researcher took a moment to dispel her fears. After brief discussion, the teacher felt at ease with the researcher's intentions and appeared to no longer feel intimidated by the process or the researcher.

The first teacher interview was conducted in the private school on a Tuesday evening in April. There was a sense of the school year coming to a close, and the teachers were beginning to experience the distraction of warm weather. The researcher walked into the school on a day when the air conditioning was not working, and the teacher to be interviewed appeared tired, sweaty and less than amused to be staying late to answer questions. She was quick to tell the researcher that the students were unfocused and unruly during the day. In fact, she had spent a couple of hours getting one student to stop screaming and crying for a reason unknown to anyone.

The researcher brought a boxed dinner from Panera Bread that included a sandwich, salad, chips and a cold drink. Whatever misery the teacher had been envisioning seemed to diminish at the surprise of dinner, and she seemed very appreciative and grateful. The interview for the second teacher was done on the following day, and the same boxed dinner was provided. On that day, however, the air conditioning was working. Both teachers provided a wealth of information. They were passionate about their responses and were eager to share their opinions and experience. There were occasional digressions from the interview questions for personal stories or restroom pauses; however, the conversations were productive and rich with details.

Classroom Observations

Originally, each teacher was to be observed four times; however, at the teachers' requests for the researcher to observe particular events that were meaningful to them, each teacher was observed six times. The instrument used was the *Early Childhood Environment Rating Scale-Revised* (*ECERS-R*) by Harms, Clifford and Cryer (1998) (Appendix F). This scale identifies background information regarding the school as well as the teacher-to-student ratio. In addition, the *ECERS-R* is broken down into seven areas to be identified and studied: space and furnishings, personal care routines, language-reasoning, activities, interaction, program structure, and parents and staff. There is also a section for comments and plans. Observations were scheduled directly with the teacher and discussed with the school director when she was available. The researcher entered the classrooms and sat in the back of the room in a designated desk so as not to disturb the students. In the beginning, the students were distracted by the researcher's presence. However, by the third observation, there was little acknowledgement of the researcher's presence.

The observations lasted approximately 3 to 4 hours and occurred six times for each classroom. The researcher used the *ECERS-R* to evaluate the classroom setting and activities of the classroom. The researcher filled out the rating scale during the observation and took running log notes for later analysis. The teachers were observed teaching academic content, fun activities and social skill programming. The small class size of no more than six students and structure of the rooms facilitated observation. The researcher paid particular attention to the demonstration of work by the students and wrote continuous notes while students worked on their own or received assistance. On a few occasions, the researcher left the classroom for a restroom break that also allowed a view of the students and teacher through a two-way observational mirror in the hallway. Although the two-way mirror was initially helpful, the researcher determined that the students were able to see a shadow through the mirror, which was a distraction. Therefore, the researcher refrained from standing in the hallway in future sessions. In the initial observation session, the researcher left the classroom without engaging the teacher in discussion and decided to contact the teacher after the school day. The researcher contacted the teachers in order to schedule a time for future observation sessions and discuss the protocol of artifact collection. During the observation, the researcher was meticulous about taking notes in a journal to keep track of student work and its reference to the lesson; therefore, it was important for the teacher to collect the work of each student. Each classroom had its own designated journal of notes to avoid confusion. Both teachers requested that the researcher observe some specific lessons in order to get an overall picture of classroom events. The researcher agreed to observe specific lessons while still making sure to meet the needs of this study.

Early Childhood Environment Rating Scale-Revised

The instrument utilized during the initial observations was the *Early Childhood Environment Rating Scale-Revised (ECERS-R)* by Harms, Clifford and Cryer (1998). The researcher chose this instrument due to its emphasis on the environment of the classroom and the inclusion of the special education population. Many scales do not include the portion that delineates special education. The *ECERS-R* is a thorough revision of the widely used program quality assessment instrument, the *Early Childhood Environment Rating Scale (ECERS*). This scale was designed for use in preschool, kindergarten, and childcare classrooms serving children 2 ½ through 6 years of age. The *ECERS-R* can be used by program directors for supervision and program improvement, by teaching staff for self-assessment, by agency staff for monitoring, and by professional development staff for teacher training programs. The established reliability and validity of the scale make it particularly useful for research and program evaluation. The rating scale is comprised of 43 items which include topics such as: interaction items (staff-child interactions and child-discipline), curriculum items (nature/science, math/number, video/computer, and diversity acceptance), health and safety items, inclusive and culturally sensitive items; and staff needs. Each of the 43 items is expressed as a 7-point scale with indicators for 1(inadequate), 3(minimal), 5(good), and 7(excellent). The rating is organized into seven categories: 1) space and furnishings; 2) personal care routines; 3) language-reasoning; 4) activities; 5) interaction; 6) program structure; and 7) parents and staff. After all questions have been completed, there is an overall rating of the entire section. Ratings are assigned through a method that is specific to the number of indicators that categorized as yes, no, or not applicable.

The rating scale includes an area that allows for comments and additional information where the researcher can include details of the observation. A profile is provided at the end of each rating scale to allow the researcher to create line graphs. These graphic representations of data enable the researcher to synthesize the outcome of the observation visually.

The next section will explain the process by which the parents were interviewed for this study. Furthermore, the section will provide details of the interview sessions with the parents of the children that were observed.

Parent Interviews

The parents that agreed to participate in the study were contacted to schedule convenient dates and times. The parents' that were interviewed were also the parents' of the children in the observations of this study. The researcher discussed locations for the interviews and it was mutually agreed upon that interviews would take place at a local park. By holding interviews at a park, the parents could answer questions while their children played. Because of the complexities of raising children with autism, the researcher arranged to have a babysitter from a local service provider at the park to allow the parents to keep focused during the interview. Hiring a babysitter also increased the likelihood that the parents would keep their appointments.

The interviews were approximately an hour in length, and the discussion was informal and very comfortable. The first family came a few minutes late and brought a friend from the neighborhood to keep their child company at the playground. The children were busy playing on the yellow monkey bars while the discussion took place. Although both children were playing in the same space, the researcher noticed that there was very little

interaction between the two girls; both seemed to have a good time, yet interacted on a limited basis.

The weather was warm and muggy this particular day, and the sun was beating down on the picnic table. The researcher had a large yellow drink cooler filled with lemonade for the families and watermelon for a refreshing snack. Both families appeared to be very appreciative of the cool drink. The researcher asked the questions and, in most instances, the conversation was expanded to other subjects that were more of a concern to the parents; for example, a fever that their child endured after a particular vaccination at the doctor's office. On most occasions, the researcher listened with great interest without commenting. Parents often sought the opinion of the researcher, but were understanding of the researcher when she explained that was outside of the scope of her knowledge and this study. There were instances when the researcher asked additional questions or asked for clarification to ensure complete understanding.

The researcher asked about the development of literacy, and the parents typically wanted to expand on the painful experience associated with finding out that their child was diagnosed with autism. The researcher was able to generate answers to the intended questions with probing and continual discussion. The parents appeared to be looking for answers themselves and wanted the researcher to know about their lives, their pain, and their experiences. The researcher sensed that when the interview came to an end, the parents were both satisfied that they had answered the questions and disappointed that they would no longer be able to discuss their frustrations.

There was about a half hour lag between the two interviews, and the second set of parents arrived with all six of their children following behind. The children ran for the jungle

gym, and the researcher began the questioning. The parents were answering the questions, yet the researcher sensed some reservation in their answers. This interview was much shorter and less expansive. It lasted approximately 40 minutes. The parents were not comfortable in the setting, and the researcher perceived that the level of questioning bothered them. The researcher noticed that the father was wringing his hands, dripping with sweat, and detached from the discussion. The more the researcher tried to pull the father back into the conversation, the more he retreated. It became obvious that the father was not comfortable and possibly only agreed to this interview because his wife consented. Within the first twenty minutes, the mother of the child became visibly tearful and asked the researcher for a Kleenex. Sadly, the father decided he had enough of the conversation and went to the playground area with his children. The researcher and the mother digressed from the planned discussion as she needed some time to process her feelings about why her husband had walked away when she became upset. The mother was apologetic to the researcher and explained that he has not dealt with the fact that his only son is "not normal." The interview eventually continued with just the mother present and then concluded.

As the researcher watched the second family's maroon van pull out of the parking area, their child with autism put his head out the window and screamed, "Hey, why does Jesus wear sandals?" The researcher smiled over this type of outburst characteristic of children with autism and yelled back, "I am not sure, do you know?" Smiling, the boy called out, "I think it was sandy back then." The researcher just nodded in agreement, and the family drove away. This type of unpredictable comment, which is unrelated to current discussion, is often displayed by children with autism. Frequently, such statements are a source of consternation to parents, families and teachers. However, these kinds of comments

are a positive reminder that children with ASD, although unique, have the ability to reason and ask thought-provoking questions.

The information that the researcher was able to gather from the interviews was constructive and interesting. Although the second interview was disrupted, the information gathered from the disruptions added depth to the underpinnings of raising a child with autism and the devastation it can bring to the whole family. The researcher found that the children who accompanied the parents were distinctive, vivacious, and captivating to be around.

Collection of Artifacts

The researcher contacted each teacher after each observation and discussed the collection of the two children's work and the process that would follow. It was determined that the researcher would collect various artifacts after the school day from each activity that was observed. The researcher carefully matched the child's work to the lesson, ensuring that she was able to determine whether that child grasped the literacy concept and demonstrated it in their individual capacity. The collection of artifacts resulted in accumulating 8 pieces of work for each child, a total of 16 artifacts. The pieces of work varied from recognizable words, patterns, shapes and letters to unrecognizable scribbles or a mass coloring of a page. Although the researcher sat closer to the students while they were finishing their work, it was sometimes difficult to assess what the content of the work was, due to the proficiency of the student and the distance of the researcher. The ability levels of the two students were different. Some were able to use handwriting. Others had trouble with the skill of grasping a crayon and needed hand-over-hand assistance. On many occasions, it was difficult to ascertain whether there was a link between instruction and the artifact. The observations provided a glimpse of the variation of outcome and the difficulty of evaluating a student with autism.

Each teacher received a portfolio at the end of the data collection process that included a copy of their interview tape, a copy of their scored classroom *ECERS-R* from the observations, and copies of any related documentation from the study. Both teachers were very appreciative of this portfolio and indicated that they were anxious to read through the material.

Information collected in this study will be detailed in the next chapter. The outcomes of the interviews, the student observations and the analysis of their literacy works will be included. Results are discussed in relation to the research questions that lead this study. As the researcher completed the above-mentioned tasks, there was excitement in the possibility of discovering common practices of both teachers that resulted in success. Chapter Four will synthesize the data and interpret the findings.

CHAPTER FOUR

DATA AND ANALYSIS

Chapter Four begins with the individual stories of the teachers' early years and their growth as educators. Of particular interest are their current practices with children who have autism. To be respectful of their stories, people and places are referred to by name rather than as "subjects." Whenever transcriptions are used, the speaker's pseudonym and position are given in the excerpt's introduction. In order to provide the sense of an unfolding story, the researcher decided to try and capture the events as they took place.

In this chapter, the researcher shared the conversations and actions of two special education teachers gleaned from the interviews and the observations of their classroom practices as well as the artifacts collected from the students. In addition, the researcher interviewed select parents of the children in their classrooms in order to fully understand all perspectives of their experiences with educating children with autism. The two teachers' profiles included an integration of the researcher's thoughts and reflections of their teaching, past and present. Each educator's beliefs and practices were woven into the text using direct quotations. In order to present material clearly, hesitations and repetitions, which would not appear in written language, were eliminated. The researcher removed repetitions such as "um", "you know what I mean," "ah," "kind of like," and other idiosyncrasies of speech "that do not do the participant justice in written version of what was said" (Seidman, 1998, p. 12). Slight grammatical corrections were made, while at the same time, the researcher remained respectful of the content and the intended meaning of the participant's words. There is no significance in the fictitious names adopted for these individuals or the order in which the profiles appear.

The profiles of each teacher included the story of their personal philosophies about autism and literacy, the classroom observations gathered with the *Early Childhood Environmental Rating Scale (ECERS-R),* children's artifacts and the parent interviews. Each profile is intended to be a case study of the analysis of special educators and of what a child with autism may encounter with respect to literacy in his/her classroom.

Teacher Profile 1: Heather

I want all of my students to be successful citizens and be able to be productive in life. I expect that will happen (personal communication, October 11,2005).

Heather's earliest memories of learning to read were with her mother who was a science teacher. Her mother would sit with her and read books about frogs, grass and the history of science in particular. Heather can remember using her vivid imagination as she listened to the books read aloud and loved every minute of that time spent with her mother. Events such as these were what inspired her to become a teacher. She made a decision early in her adolescent years that she would become a teacher, and she loved math, which was what she thought she would teach. In college she met a young man by the name of Sam who was mentally retarded, and she was forever changed by this meeting. Sam worked in the cafeteria of her college and was always smiling at everybody while they ate lunch. Heather and Sam got to know each other during the lunch hour and became friends. Sam eventually became Heather's inspiration to become a special education teacher. She learned about patience and understanding while being friends with Sam, and he opened her mind to the idea of finding additional ways to communicate and learn. Sam would often pass by Heather's table at lunch and ask her questions about things he was interested in—geology, rocks,

mountains and lava. He once saw a folder she was carrying and admired the waterfalls in the picture.

Heather compared answering Sam's questions and helping him with his reading to putting an intricate puzzle together. She enjoyed the challenge of finding new ways to spark learning, since routine methods seldom worked for Sam. He often discussed how difficult it was for him to learn and retain information, and he frequently repeated the same questions during their conversations. She realized that there were others in the same predicament that were depending on their teachers to help them fulfill their potential as learners. As a result of her experience with Sam, Heather embarked on her journey to become a special education teacher.

Five years ago, as a young woman of 22, Heather's special education career began by teaching children with ASD. Although a relative novice in the field of education, her five years experience of teaching in the area of autism sets her apart from most of her peers. Many of the tenured educators in her building consulted with her when they had a question about a student with ASD. In many ways, she was viewed as a veteran by her peers. She has been teaching a mixed elementary grade level, children in the grades K-2, for the duration of her five-year career.

Heather smiled often while talking about her students and her classroom. Her body language clearly conveyed that she had a passion for her job and responsibilities. She expressed a strong commitment to her students and enjoyed talking about their accomplishments. Although Heather had originally intended to teach secondary students, she began her career in the elementary grades and now feels that she could teach nowhere else.

Heather articulated clear opinions about autism and literacy and how the two fit together in the classroom structure. The need to practice and hear language was totally consistent with her views about literacy development for this age group; those views are summarized in Table 2. Heather had six students in her classroom, and the room buzzed with what the researcher would call controlled talking. Students in her classroom mumble, speak out of turn, and chant to themselves. Because these are typical behaviors of children with autism, Heather accepted these sounds as a part of her classroom. She encouraged the children to work both individually and in cooperative groups. She emphasized language, which was observed in her ability to get the students to express themselves orally, through a picture, or via sign language. Heather believes that there is a very strong connection between oral language development and print literacy and that this is reflected in the literacy interactions that take place early in a child's life. In her view, all children need adult and peer models of speech if they are expected to read and write with some degree of fluency. She encouraged her students to use their imaginations and feelings in their writing, rather than draw upon TV episodes. She discussed the importance

Table 2. Heather's Beliefs and Values about Literacy and Autism

- Children with special needs require modeling of language like regular children.
- Support of another adult is needed in the classroom.
- Children learn about diversity with a special child in their class.
- It's an enjoyable challenge for a teacher to teach this type of child.
- Children with special needs learn in lots of the same ways.

About Literacy:

- Read expressively to engage the learners.
- Read aloud frequently to children.
- Encourage and model oral language.
- There's a strong connection between oral language and literacy.
- Share reading through cooperative activities, large group lessons.
- Integrate subject areas using multi-media.
- Spark kids' imaginations with open-ended writing activities.

of getting children to visualize what they are reading—quite a departure from the TV culture of their world where visual images are created for them. She read aloud to her students regularly and discussed each book or material that was presented. She used "literacy bags" that were sent home with each student at least 10 times over the course of a school year. These literacy bags were tasks for the parents and students to complete together and send back to school. The bags contained a specific book that she chose, a writing request and a journal of the event. The uniqueness of the returned journals was often captivating, and Heather put them on display in the classroom when they were not being used.

The next section describes the observations and the interview of Heather in order to capture her beliefs and perceptions regarding literacy acquisition and children with ASD.

Observations/Interview of Heather

A student and the teacher assistant, Wendy, were seated together toward the back and the side of the classroom. They were a part of a group of six children who had their desks pushed together. This kind of grouping was the arrangement in this mixed classroom. Students were able to turn around easily in their seats to use the computers during the day. Wendy's desk was located close to all of the students' desks. It was a bit awkward for her, as she was a tall woman with long legs. When a student worked on the computers, Wendy often pulled up a chair beside or behind the child. Heather incorporated the computers in her classroom into center activities for the class. She talked about many different types of literacy practices and expressed that children need to feel comfortable with reading and writing; in her words "the more they are exposed the more they will feel at ease with it." Heather did not restrict the use of the centers nor discourage lots of cooperative learning. There was a sense that her class was a learning community—one in which all were expected

to help each other. Although most of the six students in her classroom had difficulty interacting with their peers or acknowledging them, Heather's class appeared to be a place where, if one of the students was missing, the other students would be affected by it. For example, one of the students who was higher functioning and had stronger verbal abilities always helped another student with her lunch; he literally held her hands and helped her grasp her food and eat it. This type of helping and caring about one another was consistently encouraged throughout the environment. It was comforting to watch the opportunities that students had to help one another. In most cases, it appeared that the environment functioned like a family unit—accepting, understanding and, at times, dysfunctional. As good-natured and caring as the students were much of the time, it was clear that it took only a nanosecond for a student to lose control and attack another student in the heat of a tantrum. For example, the same student that so patiently helped during the lunch period grabbed a pencil and launched it toward another student when he experienced difficulty with his science project. The researcher gathered, throughout the many observations, that the students were very unpredictable. It was often difficult to ascertain whether a student liked you or wanted to hurt you. It was also difficult to interpret a facial expression or a stare because at one time it resulted in a hug and another, in lashing out. The nature of being with students on the autism spectrum is that trust is sometimes broken. Often it is difficult to know when they are manipulating or being truthful with their emotions. This unpredictability can be attributed, to some extent, to the significant delays they have, as well as the history of how they have been reinforced by past teachers, parents and caregivers.

Heather's class was balanced between large group and individual work. Heather worked with individual children daily. She expressed her uncertainty when she was asked

about the availability of guides for working with autistic children. Her reply was interesting, because it revealed her ability to respond to students' needs even though she wasn't always positive about the outcome of the process. She relied on her observational skills and, although uncertain about which strategies to choose, she was willing to try different approaches and was eclectic in her teaching practices. There was no hint that these children "did not belong" in her classroom. She fully incorporated her students into every classroom activity and advocated including them in group activities with their peers from the "regular" classroom through field trips or visits to the local school district for art and music. She asked questions of everyone. For children with limited verbal skill, Heather still expected an answer either with a gesture or by pointing to the answer. Furthermore, she was willing to wait that extra time for all of her students to respond. Heather explained how she had set up their desks to meet her expectations of their communicative ability; they each had "yes" and "no" cards they pointed to during a conversation. Because of her example, and that of the teacher assistant, the children developed expectations of each other. They often modeled the adult behavior they saw, good or bad. Heather spoke about her experiences with children who were learning to read and write:

Heather:	Most of my experience with children learning to read and write…is that everyone learns differently. Some learn with auditory, some learn visually. The average child learns to read, I find, by sounding things out, by looking at the word and breaking it down. With one student, I find him learning to do that now. Before it was memory. This is a word, this is what it means, and this is the way it is spelled. Now this student is learning to break down syllable by syllable, letter by letter.
Researcher:	What adaptations do you make when teaching a child who has limited verbal abilities, is severely disruptive and has attention difficulties?
Heather:	Today is…and he will find the date. I feel he will look at a picture book and pick out pictures which have matching

> words. So I am happy…or I am tired…{prompts} He [seems to] learn by that. Most of the beginning of the phrases are memorized now, and most of the endings are memorized by now. He has his favorites, which he uses almost every day. It's starting to develop but very, very slowly…Now this student {points to a student named Rich} likes "Read and Write a Rabbit" (computer software). He has a math one, which there is some writing, but just the noise and the lights attract him to it, and he goes nuts. There is a creative writer one where he can add pictures to words, so he types in the word and then sees what the word means visually, and that is the best one for him…Picture books, anything with a big picture. He can look at and identify what it is and then, normally, he has the right identification of the word. If it's not, then we go through the word, and he works with you. You tell him the word, he says the word. You spell the word, and he spells the word. Orally, I don't know how this student's process works. I don't know if this student can't get them out all of the way, or if he chooses not to. I think every child learns differently. Some will take a long time to learn. Some learn very quickly (personal communication, December 12, 2005).

Heather's observations about how the computer helped students learn to expand their literacy was insightful. She concluded that the students appeared to have an extensive receptive vocabulary that they had difficulty expressing because of their language processing difficulties. She assumed that students were trying to make sense of the tasks before them, even if their verbal speech was not present.

The room was set up with learning centers, as evidenced by the seven hanging center tags: art and writing center, block area, sand center, science and game center, house area, library and ABC center. There were six rectangular tables in the center with enough space for all of the students to sit. Each chair had a cloth sack which covered the back of the chair and included a large pouch. This sack provided each student with an alternative compartment for storing his or her classroom materials.

The classroom was surrounded by white boards that stretched the entire length of the classroom wall. They were hung low on the walls so that the children were able to write on them. The researcher told Heather how nice the white boards were, and Heather replied that they used white boards for these rooms because students with autism can be sensitive to chalk dust which can cause distractions in their work. In addition, there was low-glare lighting throughout the room. This classroom was designed to give the students soft, ambient lighting. Heather welcomed parents, and there was parent participation nearly every day. Overall, the classroom was a warm and inviting place. When the researcher asked Heather to share her philosophy and experience of how children with autism learn to read, much of what she said was reflected in the way she had set up her classroom

Heather: A lot of the kids that I get in this age group don't have a lot of reading skills when they arrive. They have an ability to memorize certain things, and so I give them these little borrow books that have one word and one picture, and that works into a pattern book type where they are reading a little sentence that is the same all the way through with one picture-related word on each page. So that sort of progresses. And once they get through a series of those, they are usually reading quite well on their own. But there is a certain amount of memorization, picture association. They build up a sight vocabulary, but work is stuck all around the classroom…I make them go back and use the words when they are writing and reading so that it's not for me to tell them how to spell the word. They are supposed to remember where it is and find it. I think at home they learn a lot through just driving around in a car and passing McDonald's signs and things like that.

Researcher: What about the instructional programs that work supporting your ideas? What changes in your teaching have you made to accommodate your students with autism?

Heather: I have a series of readers, and it gets divided up. And I ended up with one, but I am using it in combination with oral books sometimes in a series, in combination with my own resources that I have built up. So, I have a lot of books here, and it's not just the readers that I use. I have a phonics program that I have pulled from different areas, that I have sort of fitted into the year so all that sort of ties together. I developed my own way

> of coping with all sorts of materials, given that these children have very different learning styles. I use a lot of behavioral strategies to keep them on target and keep them attentive. I use token systems so that they are rewarded for sitting and staying on task with me. I use a variety of programs, and some are on the computer as well for listening skills (personal communication, December 12, 2005).

Heather felt that she must focus on phonics. It was very important in her program. She took the children through a sequenced phonics program that she developed over the years with supplemental information from a variety of curricula. She described more of her literacy program, and how there was an emphasis on continuous text reading that relied on the little books she talked about. Heather discussed what she observed about her student Tommy:

> Heather: Now…Tommy is exposed to all those things but, in addition, he is also having some help at home with a special helper. The helper goes to his house, and she ties in with the things that we are doing in the classroom. So, he is getting the individual attention from his assistant in the classroom, he is getting individual attention at home, plus the group things that he is getting here in the classroom. So, I feel that he is getting a lot of things reiterated to him from many sources.
>
> Researcher: He's presented with similar kinds of material but just from different people?
>
> Heather: Different ways and different people. That's right. And I think that is what has helped him. He has got phenomenal memorization, but in the writing section it really became obvious. As I was writing notes for this and that, he would start out by scribbling and doing little signs and pretending …The children are writing and they are saying things that we can't understand, so we get the meaning from those by asking them to tell us, but they start out by writing their name, they write family names…things like that. So there is a purpose to their writing, and with the kids in the classroom the same thing. They tell me things that they have done that are meaningful to them, and it carries on from there. So, what might be one word…at the beginning of the year, it turns into a sentence as the year goes on, and then they turn

> into their own little stories about what they invented as the year progresses (personal communication, December 12, 2005).

To support literacy development in her classroom, Heather described what appeared to be a very eclectic program—one in which she used the best materials to which she had access. She recognized the need to integrate reading and writing and noted that children progress from simple to more complex understandings as the year progresses. The books she used for her "*Borrow a Book*" program were from the reading series *Ginn 2005* (or the output of other publishers who publish series of leveled small books. She used a combination of the *Ginn* curriculum and the *SRA Read-a- Loud Library* and the *SRA Phonemic Awareness* from the McGraw Hill curriculum to support the instruction in the classroom. The books she used for lessons varied according to the theme being studied. She chose stories from different readers to fit these themes, because the multiple copies allowed the children to do group work and often provided skills pages to go with the stories. The children wrote as a

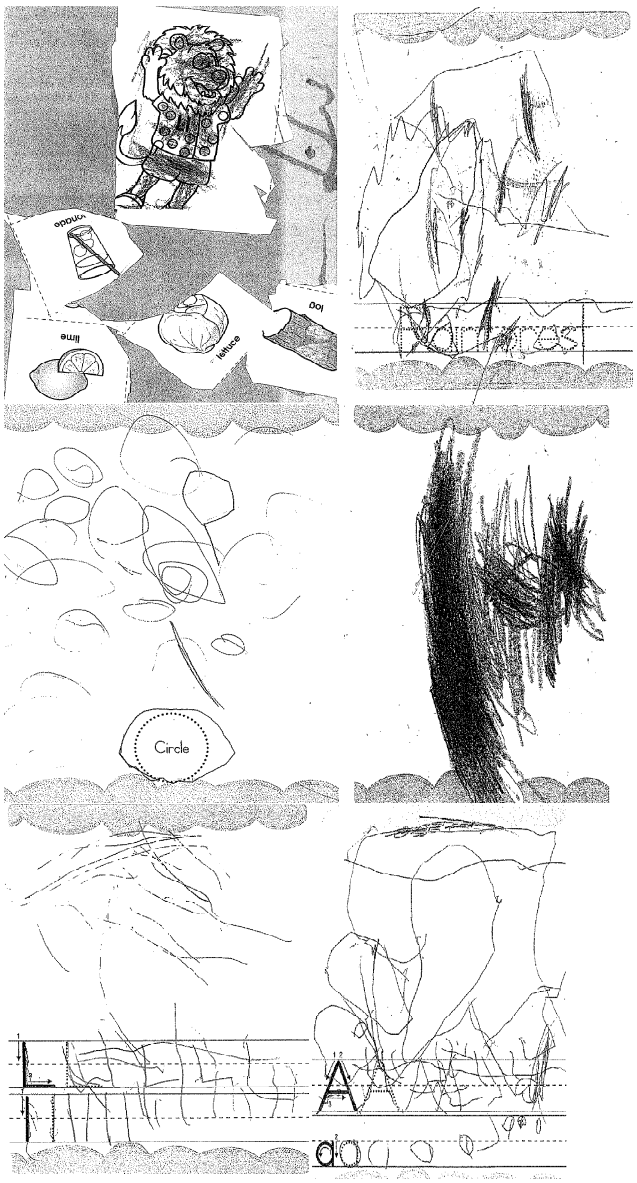


Figure 2. Example of a journal from one of Heather's students.

group with her at the front modeling the writing process on a daily basis. She took oral sentences from the children and wrote each in a different color so that they were able to recognize their sentence on the chart. All of the children had journals in which they wrote at least three times a week. Figure 2 is an example of a journal that was collected from Heather's classroom. Each week the students completed pages in their journal to document progress through the year.

Invented spellings and drawings were encouraged in their writing. Each day Heather had a skills lesson in which she introduced a sound or word family. This lesson was often linked to the larger theme she presented. Themes included all subject matter. The researcher was able to observe math, social studies, science and health themes. There was a noticeable emphasis on oral language in this class. Because Heather believed young children needed to hear good literature, she read to them daily:

Heather:	I think children learn language mainly from good role models and from talking and interacting with their peers, with their parents and extended family when they are young and listening to good literature. I think that helps when they are read good books. There may not have the best things in them, but I think that's where they best learn the language is just hearing the good stuff.
Researcher:	What about the student you described earlier (Tommy)?
Heather:	I think it probably goes the same for him as well. He's got parents that speak very clearly and easily to him, and I think the rest of the family carries along and the helpers he's got at home (personal communication, December 12, 2005).

Observations of Heather's Classroom Using the *ECERS-R*

Throughout the six observations completed by the researcher, Heather appeared to be confident in her teaching abilities. If the researcher hadn't already interviewed her and been informed of her self-identified insecurities, it would have been impossible to recognize them

while observing her. Table 3 is a depiction of the scores that Heather received through the observations of her classroom environment using the *Early Childhood Environmental Rating Scale*. The table incorporates the *ECERS-R* category that each teacher was scored against as well as the total scores for each observation.

Heather was fairly consistent throughout the observations in her total average scores. She had two days that were unlike her normal performance; however, significant personal circumstances distracted her from her usual standards. On the day of her fourth observation, she was told that she had breast cancer. The trauma of that information resonated throughout the classroom and affected all staff. The researcher did not know this information during the observation and was not informed of it until after the fifth observation. The researcher approached Heather after school to discuss the observation that day and Heather disclosed that she was dealing with the issue.

Table 3:

Heather's scores on the ECERS-R

ECERS Category	1	2	3	4	5	6	Total
Space and Furnishing	50	48	55	52	45	51	301
Personal Care	34	29	42	29	14	30	178
Language-Reasoning	26	27	28	19	21	28	149
Activities	60	62	60	9	2	60	253
Interaction	35	35	34	24	12	35	175
Program Structure	24	25	28	20	19	28	144
Parents & Staff	42	42	42	10	18	42	196
Total	271	269	289	163	131	274	1397
# of items scored	43	41	43	30	32	43	232
Total Average	6.3	6.6	6.7	5.4	4.0	6.4	6.0
Total Possible Score	7.1	7.1	7.1	7.1	7.1	7.1	7.16

It is important to note that her performance in the areas of Personal Care, Language-Reasoning, Activities, Interaction, and Parents & Staff were the categories that were affected to a higher degree during these days. Her ability to interact, mediate and communicate with everyone involved in the classroom appeared to be affected by her preoccupation with this devastating news concerning her health. Heather's interactions were noticeably different with the parents, staff, and students as well as her ability to manage her classroom. For example, Heather's staff changed the arrangement of her classroom one day while she was unavailable. Her staff took out two of her learning centers and created a larger dramatic play area to facilitate more social integration for the students. Although the staff had good intentions, they eliminated key beneficial learning centers for literacy and science which affected her score in that category. When Heather realized that the centers were removed at a later date, she instructed her staff to restructure the room to include the original centers because she firmly believed they were important. Furthermore, Heather was normally impeccable at providing the parents of her students with information concerning program changes, enhancements, and feedback as well as encouraging their involvement in their children's education. This was an area that weakened while she was emotionally unavailable. It seemed that this level of execution was far too exhausting to continue while she was sorting out her own issues.

During the other four observations, Heather was performing with great enthusiasm and vigor. She encouraged the students to communicate by giving them time to respond to a question and helping them verbalize. Heather struck a balance of listening to each student and responding according to his/her individual communication needs. Her activities were modeled for each student's ability, and she took the time to differentiate instruction, rather

teach in a uniform practice. She would have a small group discussion of a story and present it to one student with pictures and phonetic sounds and then present it to another student who was able to verbalize in great detail. Her learning centers encouraged students to communicate. There were toy animals with various accessories to stimulate a conversation between two students who were playing with small plastic farm equipment, a picture book that had puppets to act out each character, and a science center that contained a game that encouraged the students to work together to figure out what substance they felt when they put their hands in a box. Heather's classroom facilitated communication through a variety of methods. Both Heather and her teacher assistants promoted the use of the learning centers, and students were consistently directed to events in the classroom.

The topic of literacy emerged in most of what Heather did in her classroom. She used pictures as cues for the students for planned activities—eating a snack, getting on the bus, and arriving at a destination. She integrated story time and discussion with drawing and writing and nudged each student to find a means to communicate with increasing effectiveness. She used lists to set clear expectations for ordering information, and such concrete materials helped a student to define the beginning, middle and end of a story. If a student was struggling with reading comprehension, Heather recreated passages in a list format that allowed the student with autism to process the information more easily. Each student had individualized instruction time where Heather focused on addressing the student's deficiencies. She used a multitude of approaches to encourage understanding and reasoning. This appeared to be where Heather exuded confidence and competence. Even during her difficult days of dealing with her diagnosis, her skills in teaching the individual student with a creative method were tremendous. Some students were taught with a

combination of direct instruction and behavior analysis and were given matching pictures of the alphabet, numbers, shapes, or animals, depending upon ability level. She used timed sessions, reward systems and praise to increase a student's motivation while other students were working with sequence cards, same and different games, or sorting various objects to stimulate further reasoning and managed to orchestrate it all with aplomb. For those students who had an elevated ability level, she would encourage them to discuss the rationale and process they chose for sorting particular objects. She asked for clarification if she didn't understand how they explained their decisions and offered them opportunity to problem solve. She asked questions to encourage more thought-provoking responses and allowed the students time to respond with a more detailed answer. Heather was creative in her teaching strategies and used the students' interests to increase their attention and motivation. She used a strategy called "Teaching with Questions." A study by Hundert and van Delft (2009) suggests that some children with ASD may be able to profit from specific instruction in answering inferential "why" questions. The method helped her students stay involved and focused and helped to ensure their understanding. She adapted her teaching consistently throughout the day for each student. It appeared to be both challenging and strenuous, but Heather gave praise and encouragement with gusto, and she didn't appear to lose her enthusiasm. Heather's response to challenging students appeared to be second nature to her, and the students seemed to be engaged in learning and making meaningful connections

One of Heather's strengths was the continual collaboration with the parents of her students. The next section in this case profile illustrates the parent perspectives in regards to the relationship between literacy acquisition and their child Tommy.

Interview with Tommy's Parents

"Every child deserves the chance to read."

(Tommy's mother on literacy and her son with autism.)

When he was an infant, Jackie and Rob's son was exhibiting normal physical development. They realized, Jackie recounts, all was not quite right when her mother and others observed some differences about Tommy:

> Jackie: My mom noticed that my niece, who is a year younger than Tommy, could do things that he couldn't do. That was Christmas when he was about two-and-a-half years old. She didn't think that his development was normal. A little bit later, I asked the pediatrician if there was anything wrong, and he said, "He might not just be quite as mature as his peers." Boys walk late, boys talk late, boys toilet train late, and so this area all things people just attributed to Tommy being a boy. Now that spring, I used to go to the YMCA to fitness course... There was a woman there looking after the babysitting though. She actually gave them kind of nursery school while they were there, and she told me at one point when I was starting to question…she said, "Look, I am not qualified to say what's wrong with Tommy, but there is something different about him, something not quite normal in his development." And my brother was here and he only saw Tommy for an afternoon. And not very long—a couple of days or something—and he wrote me a letter, a very strongly worded letter that said I had better do something about my kid because he won't look me in the eye, he still wets and soils his pants, he doesn't speak the way other kids speak and so on. And he could just tell from that limited experience that Tommy was not normal (personal communication, December 12, 2005).

As a result of these comments, Tommy's parents arranged for their son to see a new pediatrician, and a referral for a complete assessment (physical, including hearing test, speech-language, occupational therapy, psychological) followed. Tommy was age three years and four months when this action was taken. Jackie recalls the stress of these events:

> Jackie: They say kids who have these symptoms, these behaviors and so on, are classified under this category autism, and they explained a bit what autism was at the time, but I didn't catch any of the explanation. I was kind of reeling from the effect of hearing it (personal communication, December 12, 2005).

A diagnosis of autism led to a renewed search for a medical cause by the local Children's Hospital; someone there suggested genetic testing. Tommy was finally diagnosed as a child with Fragile X Syndrome. For between 2-6% of all children diagnosed with autism, the cause is the Fragile X mutation (Hagerman, Rivera, & Hagerman, 2008). Tommy's parents set out on their own to find out as much about this syndrome as they could. What followed was a search for help. Interestingly, what they perceived at the time about medical authorities, recalls Rob, was that, "You had to know the questions to ask" (personal communication, December 12, 2005). The problem then was that they didn't know what those questions were, and it was frustrating to navigate through the various layers of a system that wasn't prepared for children with ASD. They got involved with a local agency that provided home programming and accessed a variety of services from their local Intermediate unit. Intermediate Units are United States regional educational service agencies, established by the Pennsylvania General Assembly. Intermediate Units serve a given geographic area's educational needs and function as a step of organization above that of a public school district, but below that of the Pennsylvania Department of Education. There are twenty-nine intermediate units in the Commonwealth of Pennsylvania, each serving a given region (Pennsylvania Association of Intermediate Units, 2008).

Tommy went to a preschool and, after completion; his parents began the process of finding a kindergarten program for him. Because Jackie was a teacher, she felt that the local districts did not have the appropriate placement for her son, so she researched and discussed

this issue with the district. After some discussion and heated conversations, Tommy was able to go to a school for students with autism, and the school district agreed to pay for his education at the private school for children with ASD. Tommy has done very well in this specialized setting and both of his parents were pleased with his progress in many areas. Tommy's parents' beliefs and values regarding literacy and autism are summarized in Table 4. Tommy's parents were articulate regarding autism and the facets of his learning. They have visions of Tommy becoming an architect because of his skill of building with any type of materials. Tommy once took all of their videotapes and built a huge building in the middle of their living room. They were shocked at how well he had formed such an intricate structure. Tommy's mother felt that he had a very special learning style and had difficulty grasping words and writing. Jackie described Tommy as a visual learner needing constant repetition to grasp words. Jackie discussed how much Tommy loved to hold books, look at the pictures, and make up his own story to go along with the illustrations. Many times Jackie could not understand what Tommy was saying, but she listened just the same. Jackie had pictures attached to almost every item in her house. She stated that the pictures were helpful to everyone in the household, and everyone became accustomed to having them.

Table 4. Rob and Jackie's Beliefs and Values about Literacy and Autism:

- Reading to children is how they start to learn.
- Spoken and written language goes together.
- It takes longer for children with autism to process and learn.
- Children with autism need more pictures paired with words.
- Hearing others read and associate words is important.
- Parents must communicate with school teachers and carry over the same strategies in the home.
- Parents need to get involved in advocacy groups that support their ideas and values.
- Structure is very important for children with autism.
- Every child deserves the chance to read.

Jackie and Rob both speculated about the importance of Tommy seeing a word with a picture and hoped that it would spur Tommy into understanding the written word. Rob had a strong passion for reading, and he shared his hobby with Tommy every night. Rob read to Tommy every night from a book of his son's choosing for a half an hour. For the next half hour, Tommy had to listen to the book his dad chose. Rob told the researcher that Tommy didn't always enjoy his father's choices, but he had become accustomed to the ritual and patiently sat through Rob's reading on most occasions. Rob hoped that this ritual had influenced his listening skills. This custom of reading every night facilitated both literacy and Tommy's ability to listen.

Both Jackie and Rob were secondary teachers in the local school district. They were very well-versed in autism and the needs of their son, especially when those needs related to his communicative skills, which they included in his literacy development. Both of Tommy's parents interchanged the words "literacy" and "communication" as if they had the same definition. They were in constant communication with Tommy's teacher and wanted to carry over what she was doing during the day into their home. Tommy was on a strict schedule at home and was very aware of his routine and what he was supposed to do when he walked in the door. Jackie and Rob allowed Tommy to watch only a half an hour of TV a night. Most of the night was filled with reading, going over homework, and pointing to pictures with small verbal utterances. Tommy had really thrived in this structure, and the whole family seemed to need it.

> Jackie: Tommy walks in the door from school, hangs his coat up, puts his book bag on the kitchen table and pulls out his books from the day. We go over everything he needs to get done and try to finish this while I cook dinner. We eat dinner. Tommy gets a bath. By this time it is 8:00. He is allowed to watch a half an hour of TV, reads with his dad

> for an hour and then he goes to bed. Simple as that, and he knows what he needs to do, and there is no more fussing or complaining. It is just this way. On Saturdays and Sundays we are structured, but he has a little more downtime to play etc. If he is left to his own devices, he will rock back and forth and look at his hands all day, and I just don't think that is productive. That is why we structure his night, and he seems to like it. I know when we can't stick to our structure, he is a mess. He over-stimulates, has tantrums and gets out of control. He just doesn't understand change like the rest of us.

Jackie admitted to having high expectations for Tommy, and she knew it would be difficult for Tommy to be on his own one day. She felt blessed because she had learned so much from Tommy's teacher, Heather, who visited their home every marking period to show them what Tommy had achieved and where he needed to improve. Jackie had difficulty listening to how poorly he performed in his reading, but she acknowledged that this was a struggle for him and that he might never make advances in literacy in quite the way she once envisioned. She struggled with understanding autism and why it varied from some children to others. She mentioned other kids in the classroom that were able to read, and she wished the same for her son. Jackie considered herself to be Heather's student as well, because Heather showed her what to do in their home to reinforce what Tommy was learning in the classroom. Jackie and Rob used a token system with Tommy at home that motivated him to use language. Every time he used a word, he got a token in a jar. Whenever he accumulated 15 tokens he was able to play 10 minutes of PlayStation video games. This type of reward system kept him motivated to verbalize the words of items. Tommy seemed to enjoy the reward system, and it was successful at encouraging him to use his verbal skills rather than pointing at things. Jackie and Rob learned the reward system strategy from a local support group that they had attended every month; parents got together and talked about interventions

and teaching strategies to help in the home. Jackie and Rob used visual schedules in their house that allowed Tommy to know what he was doing every day and to become accustomed to structure. The schedules had pictures that identified his tasks in the morning, throughout the day, and into the evening. An example of this schedule is present in (Figure 3). Sometimes the schedules were lengthy. An example of a longer picture schedule is shown in Figure 4. Although the example is not Tommy's picture schedule, it offers an illustration of what a picture schedule would look like in the classroom.

8:00am Brush teeth 

Figure 3. Example of Picture Schedule

Tommy's days were usually planned for him, both at home and school. He had to read his schedule to keep track of what he should be doing, and there were times during the day when he was allowed to choose an activity. Jackie and Rob felt that this schedule had been a big part of why they had been able to keep Tommy from escalating during his transitional times; he could understand what was expected of him because he was consistently alerted to it in advance. Tommy's teacher, Heather, adopted a similar visual schedule, and it seemed to smooth the transition between school and home. Collaboration between home and school was an area where Jackie and Rob commended Tommy's teacher. Jackie, Rob and Heather have a working relationship that

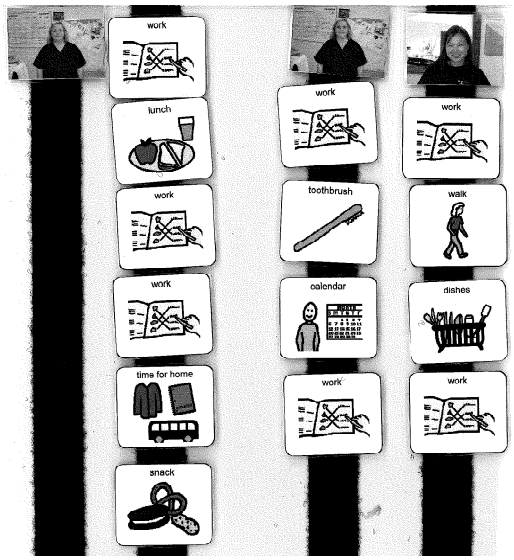


Figure 4. Example of a longer picture schedule.

maximizes Tommy's success. It was easy to glean out from our interview that Jackie and Rob were very knowledgeable about autism and had a good understanding of how their son learned and acquired literacy. They had many great ideas and tools that they used with Tommy and credited the many teachers and support groups that they have been involved with. Tommy had made progress, and his parents were thrilled to be part of that process. Jackie offers some closing remarks:

Jackie:	At first we relied on the outside professionals for all of the help, and then we realized that nobody had the answers. So, we were just as knowledgeable as anyone else. We figured we would join with the others and try to do this thing together. It takes a lot to come to the conclusion that there isn't anyone with the exact answers like, "If you have a headache, then you take Tylenol." I feel a sense of pride every day when I am with Tommy. He is my son. I am able to be his mother and his teacher, and he is a better person because of it, and so am I. I know as parents we are doing what we are supposed to do, and it feels good. I am so proud of my Tommy and what we have accomplished together.
Researcher:	Do you have any closing comments or questions?
Jackie:	There are some people who look at our situation and think that we can't possibly be happy, but we are. I have not really taught Tommy nearly as much as he has taught me. I learned how to be patient, change my perspectives, and accept what I cannot control. These are things that other families don't know how to do. I am the one that feels fortunate.

In the next section, artifacts created by Tommy were collected in order to demonstrate his acquisition of the literacy lessons in Heather's classroom. Likewise, the next section will describe the classroom events surrounding the artifact collected.

Tommy's Literacy Events

The researcher observed Tommy engaged in the student's invented spelling strategies. This provided valuable insight into his knowledge of words and written language.

This knowledge is critical for teachers of emergent readers, because it points to setting realistic outcomes and instruction. As children entered the different phases of invented spelling, they thought differently about words and written language. Recognizing where children are functioning assists the teacher in bringing them to higher levels. The strategies for emphasis were in making individual educational plans (IEP) for literacy more meaningful. The researcher assumed that Tommy would follow recognizable, invented spelling strategies similar to non-special needs children who came from literate backgrounds. The researcher was intrigued by Tommy's literacy abilities, because he appeared to have a large vocabulary and some writing ability. Tommy wrote the names of his friends and family on one side and then turned the paper over to finish writing more names (Figure 5). He vocalized to himself utterances like "Tommy draw" or "Tommy good," got very close to the paper and held his pencil between his index and middle finger. The pencil looked uncomfortable, yet every time his teacher would fix it he reverted back to the same position. Tommy drew a combination of names and appropriately ordered numerals. He seemed to run out of names when he crossed out four names and wrote a period halfway down the page and looked up. The teaching assistant encouraged him with verbal prompts to continue to write. He continued with the numerals of "1234" and

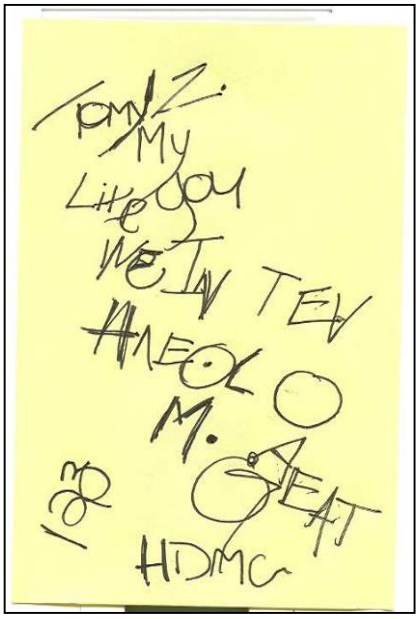


Figure 5. Tommy's writing sample at school.

then went back to writing his name. A feature of Tommy's autism is the tendency to fixate on items. Tommy loved to write names, especially in uppercase. Names were concrete things onto which he could latch and representations of what he had seen in his classroom.

Clay (1991) writes about the inventory principle; the tendency of beginning writers to spontaneously take inventory of the things they already know in list fashion. Often their names are one of the first items children learn to write. Children's own first names appear to be learned early and play an important role in literacy development (Treiman, Kessler & Pollo, 2006). The natural interest children have in their printed names provides a link to exploring and constructing knowledge about important literacy skills, such as phonology, using symbols to represent meaning, letter names, letter sounds, and understanding concepts of print (Bloodgood, 1999; Haney, 2002). Name writing has been viewed as an early step toward developing literacy skills (Clay, 1975).

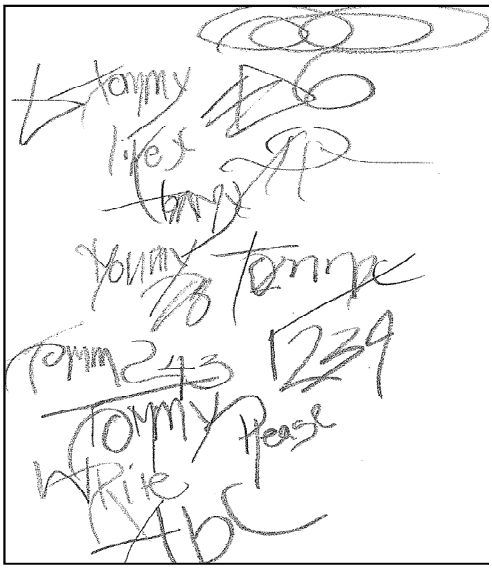


Figure 6. A writing sample with names and numbers.

The researcher observed Tommy in school where he was on a schedule and involved in art class. Tommy's teacher gave him a writing assignment while the researcher was there, and the researcher observed Tommy engaged in the task. Tommy's teachers gave him a stack of post-it notes, and he began writing. Much of what Tommy wrote this day was formed by his own conversation in his head. He would be discussing something by himself and invariably write down what he said or thought of (Figure 5). This particular writing sample was about Tommy writing his name

and that he liked the researcher. Basically, it amounted to various words on a page that formed no meaning together. At one point, he counted out loud and started to write his numbers. Tommy was able to form words on the paper, yet the page did not show any meaning by looking at it. Being present for his work made it possible to understand his work because he mumbled and spoke while he was engaged in writing. Vygotsky (1978) suggests that private speech (overt self-talk used by children in various situations that is not addressed to others) is the primary socio-cultural tool that children internalize from their social interactions with others and use for both learning and for behavioral and cognitive self-regulation. The researcher also observed Tommy engaged in an art project related to a lesson on sailboats (Figure 7).

Tommy drew on the bottom of the boat and described his family under the hot and yellow sun. When his teacher asked him to include words on the project, he wrote what appeared to be an "XYZ" on the top of the boat. He immediately went back to the drawing of his family at the bottom of the page. Tommy recognized letters and words and knew the meaning of many words; however, he had to be continually prompted to use them, which made it very difficult for him to retain and apply what he had learned. His teacher and his parents argued that his resistance to using the words was the single most detrimental characteristic of his autism that contributed to his lack of communication. As frustrating as it was to know that

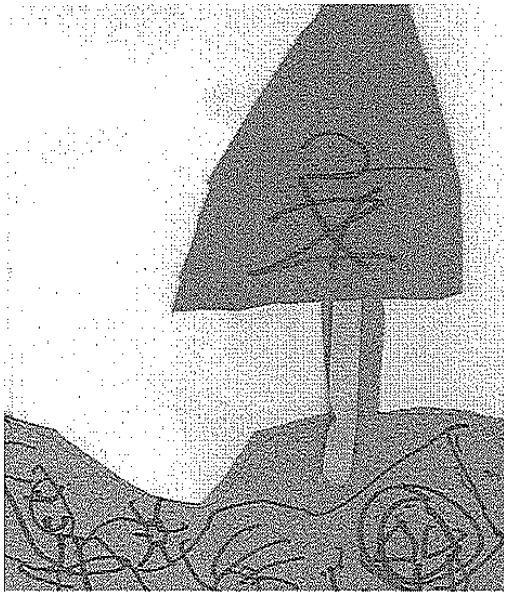


Figure 7. Tommy's art project on sailboats.

he had the words and the mind to acquire the skills and didn't use them, it was equally comforting to know that he had the ability to learn words in the first place. On one occasion, the researcher observed Tommy writing in what appeared to be cursive handwriting after the teacher asked her six students to write the sentence, "This is my writing at the beginning of the day" (Figure 8). The teacher wanted a sample of the students' print abilities. Tommy decided to write in cursive, and the teacher asked him where he had learned to write like that. Tommy stated, "Dad." The teacher directed and guided Tommy to finish the statement that he started, but he had lost interest and began tapping his pencil on his shoe. The moment appeared to be lost, and he never finished the sentence.

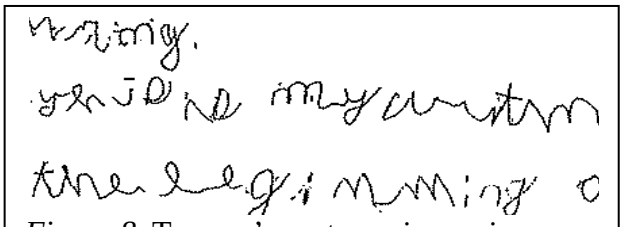


Figure 8. Tommy's sentence in cursive writing.

On one particular sunny day when it appeared that Tommy was feeling happy and joyful, the researcher observed him walking toward the window and using sign language to say "happy." When his teacher asked him why he felt happy, he responded with a clear and deep "sun." The teacher jumped back with excitement when Tommy expressed this new word and praised him effusively. Everyone was affected by his excitement. Tommy laughed so hard he was bent over with jovial shaking. Tommy repeated the word "sun" for the teacher three more times,

Figure 9. Tommy drew a sun.

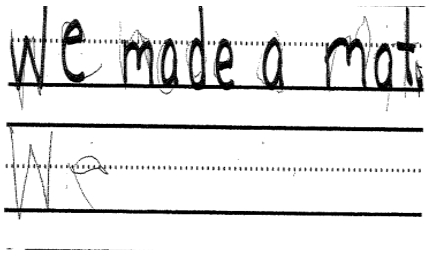


Figure 10. Tommy's difficult day.

and his teacher brought him right to his desk and helped him draw the sun and write the word "sun." Tommy gripped the pencil in his left hand, and the teacher readjusted his hand to hold the pencil with his fingers instead of a fist (Figure 9). As the teacher spoke, she helped Tommy, hand over hand. Throughout the ten-minute event, Tommy just smiled and moved his eyes from side to side. Tommy looked at the paper briefly, as his teacher was describing the sun and all of the details and chimed in with his "happy" sign again. The teacher nodded yes and exclaimed, "The sun makes you happy!" She quickly went to the board and wrote the sentence, "The sun makes Tommy happy." Additionally, Heather put the pictures under the words "sun" and "happy" on the board. The teacher assistant escorted Tommy to the board, held his hand, pointed to each word, and said the sentence. Tommy turned around and smiled. There was a connection that almost cannot be described to those of us who take this for granted; Tommy was able to visualize an object, verbalize the word and describe how it made him feel. It was a fleeting moment in the classroom when Tommy achieved something so difficult that it energized everyone who witnessed it. The researcher began thinking about how difficult it must be to wait for these small moments of growth, yet how exhilarating and gratifying it must be to be a part of his success.

During another visit to the school, Tommy was lethargic and melancholy. The researcher noticed right away that he was not responsive and seemed to be subdued and disinterested in his surroundings. At one point during the day, he fell asleep for ten minutes with his head propped on a bookshelf, until his classmate accidentally bumped him with his

elbow. Tommy was able to produce one word, as shown in Figure 10. Heather was attempting to do a writing sample with Tommy. Tommy sat at his desk with his teacher, and she continuously prompted him to look at the paper, hold the pencil, and focus. She would tilt his head toward the paper hoping that it would catch his interest, but that didn't work either. She tried art materials to get him engaged, but he would drag his arm across the painting so he was able to put his head down on it. Tommy was lost in a different world on this day; he hadn't produced any artwork, much less writing. The teacher continued to prompt and redirect him most of the day and worked through his sluggishness, even though he appeared to be disinterested. The teacher continued to teach him and kept challenging Tommy to respond, but he wasn't able to break out of the "funk" he was in. The researcher was intrigued by the sheer difference in Tommy since, during the last classroom visit, he was able to recognize the meaning of the word "sun" and pair it with an emotion. The researcher stood there and watched Tommy struggle to exit the building with the support of his teacher. He tripped over a small stair outside of the door because he wasn't lifting his foot high enough to clear the stair. This small incident highlighted the challenge of working with students who are diagnosed with autism. Some days are productive while others are much less so, and both types of days are characterized by unpredictability.

Two weeks after the visit when Tommy was unable to produce any work, the researcher observed Tommy in his speech therapy session. As the researcher walked through the door of the small speech office, there were dangling letters in the doorway held together by strings and taped to the doorframe. The researcher commented to the speech teacher about how attractive the letters were. The speech teacher had an imposing persona; however, she was joyful and gregarious. Tommy was already sitting at the table when the researcher

walked in, but they hadn't begun any instruction. The speech teacher began with Tommy by talking to him about what they did last session. Then, she held up a visual schedule and went line by line describing what they were going to do during the current session. Immediately following the visual schedule discussion, she turned her back to set a visual timer to allow Tommy to watch the red bars disappear, telling him exactly when he would be done with the session. Since Tommy could not tell time by himself, a visual timer allowed him to watch a color dwindle down, much like an hour glass, and alerted him to the completion of his session. Instantly, the researcher noticed that Tommy was at ease with the situation and stared at the timer nodding his head up and down as if to indicate his acceptance of the schedule. It was clear that Tommy had been in this situation before, and he needed little prompting from the teacher because of it. The session started with the teacher pronouncing sounds to Tommy and asking him to repeat them. The first sound was /a/, and his response was a blank stare at her, indicating he could not or did not feel like saying it. The teacher responded by pulling out a card that had the /a/ and a picture of an apple on it and said the letter again. Tommy said /a/ emphatically, and the teacher began to brush his arm with a hairbrush. The teacher then looked at the researcher and said that Tommy enjoyed the feeling of his skin being brushed, and she used that as a motivational reward. When she removed the brush from his arm, she asked him again to say /a/ without the card. He responded /a/, and again she brushed his arm. The researcher recognized that the brush was effective in motivating Tommy. Lastly, the teacher asked Tommy again to say /a/, and he complied. She then asked him to write the letter /a/. She carefully placed her hand on top of his and prompted him to write the letter /a/. After consideration of the task, Tommy independently picked up the pencil and wrote the letter /a/. It appeared to look more like an

/e/, but the speech teacher was pleased that he made the attempt. She then placed the hairbrush in his hand and allowed him to brush his arms and legs. This process happened a few more times with the letter /a/, and they moved through the alphabet all the way to /f/. Each time Tommy would get a sound out or a letter written, she kept his interest by providing him with things that he really enjoyed, and he sat through the entire 45 minute session without any angry outbursts or sluggishness. He was engaged throughout the entire session.

The researcher watched Tommy's face as the timer crept toward the ending mark, and he was elated to be done with his session. He jumped from his seat and pointed to the door, and the teacher asked him to say goodbye. Tommy waved without sound, but she didn't accept that, saying, "You cannot leave until you say goodbye." So, he smiled and said, "Bah bah." It was close enough, and she dismissed him. An aide was waiting outside to escort him back to his classroom, and he bounced through the hallway as if he were in a pleasant mood. As he made his way into the classroom, he found his desk in the middle and sat down with one leg underneath the other and stared at the wall. The teacher barely recognized he was there, because he came in so quietly. It appeared to be a day when Tommy was productive and energized.

On another occasion, the researcher entered the building to observe Tommy and heard screaming and crying. The noise sounded like someone was wounded and needed immediate attention. As the researcher turned the corner to Tommy's classroom, she saw his teachers and paraprofessionals huddled around him trying to prevent him from banging his head against the concrete floor and slamming himself up and down. Although the scene was difficult to watch, the researcher was familiar with such extreme behaviors; however, onlookers in the other classrooms were watching with desperate facial expressions as Tommy

carried on at such an extreme level. They weren't staring because they had never seen this behavior before, but rather, they were worried that he could hurt himself. After seventeen minutes of exhausting, painful thrashing, Tommy finally settled down in response to calm vocal coaching from his teacher. She talked to him throughout the process and, eventually, her persistence enabled him to calm down and verbalize "sad."

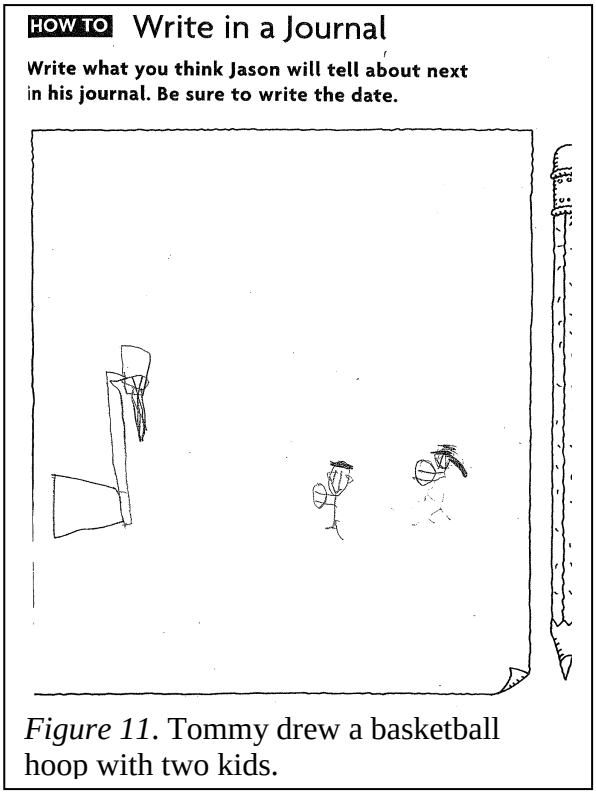


Figure 11. Tommy drew a basketball hoop with two kids.

Tommy looked physically exhausted; his hair was tousled and sticking up in the back, sweat was streaming down his face, and he stared ahead with blank expression. The staff seemed to walk away with the same exhaustion, and it left the researcher feeling anguish for all who have to wonder why children like Tommy suddenly experience such painful events. Outbursts such as these happened multiple times during the day, and the researcher understood how it could wear on even the staunchest of people. It was even more apparent, as the observation continued, that Tommy was resilient. His teachers had a large impact on his daily life. Later that same day, Tommy transitioned back to doing class work and concentrated on his math problem as if none of the day's events had happened. Regardless of what happened 15 minutes prior, Tommy was there to learn, and his teachers were willing to work with him under any circumstance.

The researcher conducted the last observation of Tommy during a small group instruction with the teacher. Heather was instructing Tommy and another student at a small table in the back of the room. She was holding up a story about a boy named Jason. Jason was on an adventure in his neighborhood, and the story was about his experiences. First, Jason went down the long driveway and then walked on the sidewalk toward a basketball court in the park. The students were given a worksheet in order to document what they thought would be the next experience Jason would have. They were asked to write it on the sheet as if it were a journal entry by Jason. Tommy stared at the paper for a few moments and, eventually, Heather tapped the table to get his attention. She held up a picture of a pencil and said in a firm tone, "Write." Without a response, he grabbed his pencil and worked diligently on his journal. When he lifted his head, the researcher spotted a clear picture of two children in front of a basketball hoop (Figure 11). The researcher watched Heather as her eyes brightened and a smile extended across her face. The researcher was moved by the enthusiasm of Tommy's classroom teacher. It was a great reminder of how special teachers are in the lives of others. Furthermore, the teacher assistant jumped from her seat at the front of the room to praise Tommy and several of the students offered praise to Tommy as well. Tommy eventually looked up from his paper and gave a sheepish grin. There was elation in the classroom at that moment, and it was a great way to end the researcher's time in Heather's classroom.

The next section describes the profile of the second teacher in this study. The profile begins with the interview process and her description of literacy acquisition and students with ASD.

Teacher Profile 2: Kendra

"Students with autism are like any student. They have all of the same opportunities and possibilities" (personal interview, October 25, 2005).

Kendra has been teaching 26 years. She taught 25 years in a public school, which afforded her the ability to learn about many different types of students who require special assistance. Kendra teaches in the private school for children with autism even though she feels that she should be enjoying the "golden years" of retirement. The fact remains that Kendra is not ready to fully leave teaching, so she thought it would be fun to teach in a private school for a while. Kendra has had many years of experience that have contributed to her teaching values and beliefs. She has a strong passion for children with special needs; she raised three children, all with disabilities. Kendra's earliest memory of reading was with her father who, sadly, passed away not long after our interview together. Her father was a professor of mathematics at a university in Texas, her birthplace. Her father would spend hours reading to her and her sisters in their bedrooms, and they would often fight to sit on his lap while he read them a story. Kendra had always loved to read and had instilled that value in her own children, as well as in all of her students over the years. Her foundational philosophy is that reading is the cornerstone of success. She places reading in high regard and wanted to be clear about this idea during the interview:

> Kendra: Literacy is the magic bullet. It is what opens the doors to the world, good and bad. It is a hard place to live when you can't read or write. I do believe that all people have the ability to read. Students with autism are no different. It just may be in a different form than the average Joe is used to seeing. It is not them that need to conform to our practices; it is us who need to change our views to accept theirs. We need to teach the way they learn.

Kendra told the researcher that she tries to absorb new practices and use them to expand on what she has been doing. She said she feels a strong commitment to teaching and

even more devotion to the students. Kendra felt that she had been a good teacher for most of her career, but it had only been in the last 3 years that she felt that she had mastered the art of teaching. Kendra believes that teachers aren't performing at their best until they are ready to retire; she feels that it takes that long to become proficient.

Kendra discussed how difficult it was to teach children with ASD, though she felt that she had been doing it pretty well. She did not feel as though she was the best teacher for children with autism, as most of her prior experience had been with lower-functioning children who had different disorders like Down Syndrome. She indicated that she was aware of most of the new interventions to use with children with ASD and felt that most of the students were able to acquire literacy skills when these new teaching methods were used. Kendra discussed how she was somewhat intimidated by the amount of knowledge the parents of children with autism had, and it seemed that sometimes they knew more about the diagnosis and how to teach them than she did. She felt that this was a totally different "arena" than what she was used to.

Observation/Interview of Kendra

Kendra's kindergarten classroom was a dynamic place for six-year-olds to work. The class was set up with tables and chairs—three children to a table and a total of six students in the class. Whole class lessons took place on the carpet area in front of the class, with the whiteboard or chart board used as the focal point for the students. The students sat on a marked seat on the carpet in a circle. There were activity centers around the room, but the children completed the bulk of their work at their tables. The activity centers included a place for dramatic play, a reading corner, and a science section. By the time the researcher entered the classroom, routines were established and the children had a good idea of what was going

on. Kendra's desk was across the room toward the back near the carpeted area. Kendra tended to move around the room while the students were working on their own so they could call on her for assistance. She made a point to call on each of the children during circle time which enabled them to use their pictures to speak, use sign language or use voice box communication systems. Kendra was good at checking with each student individually to make sure he or she was doing okay. Kendra had many pictures posted on the walls in an orderly fashion. Many of them were eye-catching but not overwhelming. There was very little distracting material around the classroom. If a student were to look at the wall, he/she would see a sight word or a picture with a word. It seemed that labels were everywhere on everything. Even the door knob had words on it.

Kendra stated her commitment to inclusion of students with autism in the regular classroom setting; however, she felt that since the private school had all of the necessary things for students with autism, most students with this disorder were better off in a special placement like the center. Kendra felt the school had worked for many of her students because there were so many additional supports, such as teaching assistants and volunteers. There was a comprehensive model of education that included behavior specialists, speech therapists and many other professionals that could meet her students' needs. She admitted that, for many years, she believed students with significant disabilities should be kept in a classroom by themselves. She quickly explained that her philosophy had changed. She now believed that children with significant disabilities could learn from their peers and should be integrated into regular classrooms as much as possible.

Kendra was an experienced teacher who was hired at the school after 25 years of teaching in a public school. She had experience in a variety of classroom settings; however,

she spent the longest period of her career in a life skills program, which was inclusive of only students with mental retardation and lower IQ's. Kendra admitted to having very low-functioning students most of her career. So, when she began working at the private school, she felt very overwhelmed by the fact that many of her students were very high-functioning students with Aspergers Disorder. Aspergers Disorder is one disorder on the autism spectrum that typically affects children's social skills. However, children with Aspergers Disorder often have increased verbal and intellectual abilities (Volkmar & Wiesner, 2009). Kendra discussed how she had to work to understand the typical student with Aspergers Disorder and spent time assessing how to educate these students. She quickly realized that there are no "typical" students with ASD, and each student is unique and unlike the next. Kendra discussed how difficult the population was because, "they have the mind to challenge everything, but socially they are much delayed." She mentioned that it was hard to decide what subject matter was the most important for their futures: social skills development, enhancing their math skills, literacy skills, etc.

Kendra expressed her beliefs about how children learn to read, and that she viewed her students as being at the readiness level. Kendra felt that it was acceptable to restrict her students to controlled vocabulary readers. She appeared to have a linear view of reading, even though she was prepared to let go of this notion where writing and speaking were concerned. Most of our conversation focused on a child named Karrie, since this student happened to be testing her abilities as a teacher. Most of the researcher's observations focused on the relationship between Karrie and Kendra and how the student/teacher relationship was formed.

There was ample opportunity for talking and writing in Kendra's class, as well as text reading that corresponded with the writing. Kendra talked about Karrie's language development and how it was reflected in her reading, but her enriched background experiences came through as well. She recognized that Karrie was reading due to her sight word vocabulary recognition, but she felt that Karrie did not comprehend much. By implication, there was a reluctance to recognize that this student was taking beginning steps toward literacy, since her oral speech was delayed and often incomprehensible; therefore, it was Kendra's belief that she did not comprehend text. She admitted that Karrie was following a parallel program rather than an adapted curriculum:

Kendra: Extra classroom support is paramount in getting the instructional program into place. We are using a rather old series right now that has phonetically-based vocabulary and a sight word list as well. But that's not to say that everything is done in isolation with this child because, ultimately, what you do want to develop are independent work skills which are modeled by the other students in the class. We are always aiming at the proper behaviors, the proper working habits, and the proper movement in the classroom that "normal" children have already acquired. It is very similar to what other students are doing, except we have activities with large balls, gross motor things and fine motor things more often. Computer work is very important, so we do a lot of computer work. We have a reading program, spelling program, writing program.

Researcher: But she is basically parallel with what "typical" children are doing?

Kendra: That's what I mean. She is working at all times, but her program is different. I would also say that it is different from any other kindergarten child's program, even though she is in many ways functioning like a normal kindergarten student. She has sight vocabulary. She is reading and she is printing, so there are modifications because the on-task behaviors are not as developed yet, because the fine motor skills are not as developed yet, because her attention wanders very easily. She is very distractible, and all of these things have to be supported by a teacher's aide. But if you had to say what we are doing differently, well I think we are doing all of it

> differently, but you'll walk into the classroom and basically see her working with paper and pencil, with books, with word cards as you would with any other student (personal communication, October 23, 2005).

Kendra told the researcher that her experience had been with children who were much lower-functioning than the students she was currently teaching. It appeared to the researcher that Kendra was not confident in working with a student that had higher-functioning skills.

Table 5. Kendra's Beliefs and Values about Literacy and Autism:

- Accept approximations from students.
- Literacy development relies on readiness.
- Exposing children to literature is important.
- Basal readers are more important instructional tools than trade books.
- Teachers must develop themes to enhance vocabulary and skills.
- Some teaching of skills in isolation is all right.
- Writing follows a continuum.
- Special needs children can learn in supportive environments.
- Models from peers assist language and literacy learning.
- Social behaviors often learned from peers.

Although Karrie was at an elevated ability level, she still had deficit areas that—particularly in comprehension—slowed her reading achievement. Kendra appeared to be satisfied with the fact that Karrie was sitting in a chair "appearing" like other typical students.

Kendra seemed concerned about all of the skill areas that Karrie was missing. She was unwilling to leave the basal readers behind completely for fear that some aspect of learning to read would be lost. Kendra described her classroom as very structured; there was fragmented use of cooperative learning groups to balance whole group instruction. Assignments appeared to be geared to the students' levels, so individual achievement goals were flexible. She used a theme approach to teach literacy. Consequently, skills were automatically integrated into a meaningful context. A summary of Kendra's beliefs and values about literacy and autism are included in Table 5.

She read to the children regularly, relating her literature choices to the class theme. Kendra enjoyed having Karrie in her classroom and appreciated the presence of the teacher assistant, but took complete ownership of every student's program. The researcher observed many times that Kendra would sit beside Karrie for a few minutes and assist her, usually when there wasn't a teacher assistant in the room. It was clear that Kendra was comfortable working in collaboration with other professionals. She had an equally good sense of what types of goals to set for Karrie. She had a willingness to accommodate different learners, letting the children choose, with her guidance, the group in which they could learn best. Kendra often spoke about the need for children like Karrie to have subtle challenges in their learning and that newer strategies were more beneficial. This was a surprising statement to the researcher, as Kendra seemed to favor her practices from her many years of teaching students who were mentally retarded. Although Kendra was a very strong teacher with good pedagogical skills, she was often unwilling to try new approaches that have been shown to be successful for children with autism. Although it was never stated directly, the researcher got the impression that Kendra acknowledged that newer practices were effective, but was reserved about implementing them. It was easy to understand that Kendra was a strong supporter of literacy when it came to discussing the topic; however, this follow up sometimes was skipped over. From the observer's perspective, the reading activities were present and very well done; however, they seemed to end with the reading event. Students were very quickly transitioned to the next activity; there was little room for thought-provoking questions. It seemed that she doubted their ability to answer questions about the book and to comprehend the story. The researcher noted that this could stem from her previous experience with students who were lower functioning in literacy. There was one

uncomfortable moment for the researcher when Kendra whispered to her assistant, “I should probably read to them again later (the students) since that is what SHE is looking for.” Kendra seemed to believe, at least based on the practices of her classroom, that “literacy” and “reading” were synonymous.

In Kendra’s classroom, literacy with print was standard; other forms of communication—drawing, signing, and so forth—were less valued. She tried to incorporate many literacy events into her classroom teaching, yet there were missed opportunities when it came to growth and improvement in the students. These missed opportunities would not be apparent to outside individuals, but they could make the difference in a student’s learning retention from year to year. An important learning method for children with autism is repetition of concepts (Shore & Rastelli, 2006). The more often the students heard something, the greater the chance that they would retain and master the information. Nevertheless, Kendra rarely reiterated information to the students and seldom pursued discussion that might help to solidify children’s understanding.

Kendra acknowledged that Karrie was learning to read, yet she seemed to focus on her difficulties and expressed doubt that the child was capable of getting past the hurdles. On one occasion, she wondered aloud what was wrong with Karrie’s “memory,” rather than focusing on her accomplishments, and she assumed that the material was too frustrating for Karrie. The researcher did not observe any behaviors from Karrie that were indicative of frustration with the task. The researcher sensed that Kendra was finding it increasingly difficult to cope and felt pressure and anxiety to do the right thing for Karrie, even though Karrie was seemingly doing very well in her classroom. Overall, Karrie was a student with behavior issues, who was making solid academic progress.

Kendra's classroom was a well-run room, and the students were kept on task doing academic things. Nevertheless, there were many loose ends that should have been addressed along the way with many students. For example, Kendra was reading a book about trains and one student began making "choo-choo" utterances. Instead of acknowledging that the student was aware of the concept of a train and could link the sound with the physical, which is typically a difficult area for children with ASD, Kendra ignored his utterances. When his voice rose, she asked him to sit in the corner to calm down. The researcher observed the student escalate his self-stimulatory behaviors for the next hour of instruction. It appeared that the student was no longer engaged in anything and had been misunderstood, which ultimately lead to Kendra's observation that he "would not behave." Luckily, the students were provided with a lot of structure with the help of teacher assistants, and they were able to maintain a schedule throughout most of the day. Kendra's students engaged in many self-stimulatory behaviors, and her students benefitted from the structure on most days. The researcher noticed that there was very little time in the schedule for independent learning at the centers. The students were given short, timed breaks. The researcher noted that, on several occasions, a student during the small break time would stand at the chalkboard and engage in hand-flapping. Kendra was at her desk reviewing papers, and the student missed the opportunity to work at a learning center. It appeared that as long as the students kept their behaviors at a non-disruptive level, their behavior was acceptable, even if little or no learning appeared to be taking place. As for Karrie, she seemed to be doing quite well and she was managing to complete assignments.

In the next section, observations of Kendra and the classroom setting were examined by using the *Early Childhood Environmental Rating Scale*. This section will include Kendra's scores on the *ECERS-R* and the highlights of the observations using this tool.

Observations of Kendra Using *ECERS-R*

According to the results on the *ECERS-R,* Kendra was very skilled at maintaining a classroom and following routines. The students in her classroom could rely upon a schedule of events and find comfort in the habitual practices. The structure of her classroom offered her students comfort and was of huge importance to the students on the autism spectrum. There was order through the daily commotion, and the students routinely followed the classroom rules.

Table 6.

Kendra's ECERS-R scores.

ECERS Category	1	2	3	4	5	6	Total
Space and Furnishing	31	48	52	37	50	32	250
Personal Care	27	32	36	27	36	25	183
Language-Reasoning	18	18	16	20	18	20	110
Activities	57	55	62	60	60	55	349
Interaction	25	28	22	25	25	22	147
Program Structure	28	29	29	28	28	30	172
Parents & Staff	28	24	28	28	28	25	199
Total	214	234	245	225	245	209	1440
# of items scored	39	42	43	40	42	40	246
Total Average Score	5.5	5.6	5.7	5.6	5.8	5.2	5.7

Through the order of her classroom, Kendra was able to achieve high scores in the activities portion of the *ECERS-R* because she was able to meet the challenge of transitioning students from one subject matter to the next with few or no behavioral issues. Kendra mastered the periods of change for her students, and they rarely had difficulty with ending and starting activities. The commitment to the schedule allowed each student to accept the transitions as part of their day, and the students rarely resisted the system. Kendra's students were able to consistently partake in every learning objective of the curriculum that she had identified as important. There were rare days that the students weren't able to participate in one of the subjects.

Kendra's classroom was set up to enrich students' experiences and was aesthetically pleasing to the observer. The aesthetics of the classroom ultimately elevated her scores for the furniture and space category on the *ECERS-R* (Table 6). She included various learning centers in her classroom with plenty of space to freely move. There was a cozy area incorporated into the classroom that included books and puzzles to review. There were many opportunities to engage in a learning event within her classroom. In her science area, she had an aquarium filled with toads and other amphibians, and the students were able to read about the creature and its habitat. It was apparent that her classroom acknowledged the need for literacy, and the materials within the room supported that philosophy. There were opportunities to read and visualize in nearly every corner of Kendra's classroom environment.

Kendra struggled in the areas of Interaction, Language and Reasoning, and Parents & Staff. Although there were very different elements to score in each of these categories, the common theme involved communication. Kendra maintained just enough communication

with staff, parents and students to perform adequately according to her job description. There was little conversation regarding logical relationships, and often Kendra would gloss over a student's question that could have encouraged an advanced thought process. She was able to present materials to the students, yet concepts like same/different, matching, classifying or sequencing were introduced inappropriately. Often there were students who weren't able to grasp a concept or, conversely, the task was too easy.

There were few activities that were used to encourage communication. Kendra would present the student with a task, and the lesson would end with the task. There was very little elaboration on a drawing, story, or further sharing of ideas related to the lesson. Kendra appeared to focus on the task, but not expand upon the lesson. Interaction between Kendra and the students was sufficient, yet not deeply involved. Kendra preferred to walk around the room and visit with students doing their work to check in with their progress on completion, rather than individually focus on a way for them to comprehend better. There were moments when Kendra seemed to prefer controlling the situation and sticking to the schedule rather than taking more time to explain something. There seemed to be little time for reciprocal listening and responding between the students and Kendra.

Teacher-initiated receptive language activities were infrequent. Kendra had materials available for the students to read during independent breaks; however, it was not a priority to initiate a story-telling session or encourage a student to engage in a reading activity. Students were left to wander around the room and engage in whatever behavior they wanted. The general supervision of the students was lax during times of independent play, and if a behavior of a student got out of control during this time period, it was dealt with by means of shouting "no" or yelling for the student to be quiet. It appeared that during an independent

learning session, Kendra was busy with desk work and had little tolerance for a student interruption, especially if he/she was having an escalation in behavior.

The next section will describe the interview responses from Karrie's parents regarding their beliefs and perceptions of the acquisition of literacy skills and their daughter.

Interview with Karrie's Parents

Karrie developed significant seizures at 16 months of age and was medicated for a partial complex seizure disorder. Barbara and Tony, Karrie's mother and father, had this to say about what the medical authorities told them at that time.

> Barbara: There was no explanation why she had seizures, and they called the term idiosyncratic. It sounded funny because it always reminds me of idiots, as if we needed to hear that…but she falls into 60% of cases unknown to the neurologist… To him it was sort of like the good news, that we don't know why, because if they do know why sometimes…it's something much more serious. And, of course, being young at 16 months, younger children have a higher percentage of outgrowing a seizure rather than an older child or adult, which is good news….
>
> Tony: We just looked at each other in disbelief when she was diagnosed with seizures. There is no family history, so it was devastating (personal communication, November 17, 2005).

Needless to say, Karrie was regularly monitored by the neurologist. Toward the age of three, her mom and dad insisted the neurologist do an assessment, because Karrie's speech and language were not developing like that of her brother. As Barbara recounted the events of that time, it was clear that she and Tony were the primary people responsible for getting an assessment, rather than her pediatrician. Karrie was diagnosed with a severe speech and language disorder and also autism, both of which made her very difficult to understand. Barbara explained the history:

> Barbara: Her first speech assessment was when she first turned 3. I recognized there was a difference, or delay I should say, around the age of two or two-and-a-half, so then we inquired and went on a waiting list for assessment. Communication was usually done by gestures and grunts or pointing, though I always instinctively knew what Karrie wanted (personal communication, November 17, 2005).

Like other parents, Barbara and Tony sought help for their daughter themselves. They were willing to take the time to work on Karrie's speech, even when there were cutbacks in the educational system and the family had to draw upon its own resources. Barbara already had an older child from a previous marriage in the public school system, and she intended to use those contacts to help find a placement for Karrie. Karrie ended up at the private school after Barbara discussed and planned Karrie's placement with the local district. Barbara and Tony were very committed to helping their daughter learn to read. They recognized early that Karrie needed more attention, and they were willing to put in the time and the energy at home. Barbara read to Karrie like she had read to her older son. Reading was an important skill she wanted Karrie to acquire. She talked about her older son learning to read and explained how she drew on this experience to teach Karrie. Drawing on Karrie's environment, she used games and one-on-one informal teaching:

> Barbara: Basically, I taught my older son to read from the stories that we had been reading to him ever since he was a young child, and we did the same thing with Karrie. Always being introduced to books in the bathtub, foam letters, showing examples of us reading stories or, if we were at church, also reading the Bible. When nursery school time came along, there was reading also with their peers. This was also the case with Karrie. She was in a nursery school prior to the school system, so there have always been books available, and I guess maybe the pictures were also very important. The coloring books which might have the big car and you would have car written underneath or you would spell it. Realizing Karrie did have special needs, I

> needed to be more creative for her sake. I used tiles from a Scrabble game to build small words for her. I tended to use tools to print which letter is with the tile, then you would slip the tile into the middle to spell the word (personal communication, November 11, 2005).

This was a mother and father committed to having their daughter learn to read and to overcome her communication difficulties. Karrie tried very hard to make herself understood. She repeated what she was trying to communicate without getting frustrated or angry at someone. Barbara worked with her daughter to give her the confidence to keep speaking even when she thought no one understood her. Karrie learned to speak and often would shake her head when someone didn't understand her, as if to suggest it was the other person's fault.

Barbara felt that Karrie was making huge gains this past year in her classroom at the private school. Both Barbara and Tony felt that Karrie was using more words and more sounds than ever before. Barbara was a volunteer in the school twice a month and usually brought the students a snack and juice when she would come. Barbara alluded to Kendra being overwhelmed with her students, and the conversation quickly dropped when the researcher asked a follow-up question regarding why she felt that way. Interestingly, Barbara felt that Karrie was doing very well in Kendra's classroom, and the teacher felt that Karrie was a difficult student and was not performing well. Despite the differences of opinion, it was clear to the researcher that Karrie was

Table 7. Karrie's Parents: Barbara's and Tony's Beliefs and Values about Literacy and Autism:

- Community resources are important.
- Acceptance of child with special needs by the teacher is essential.
- Parent involvement in school is necessary.
- Children learn to read within their home environment.
- Children with special needs require lots of fun practice with skills through games.
- Reading aloud to the child enhances literacy.
- Parents need to try varied strategies.

communicating well, and her mother had a right to feel proud of her daughter's progress. Karrie was able to verbalize her feelings and give Barbara reasons for her emotions. She was also beginning to understand and deal with the way in which her emotions affect her behavior. For example, Karrie was able to identify that when she had difficulty with a math problem, her frustration escalated. Karrie excused herself from the table one night, according to Tony, and counted to ten when she recognized that her stress level was high and she needed to calm down. In the past, Karrie's frustration resulted in striking out at her teacher or a peer.

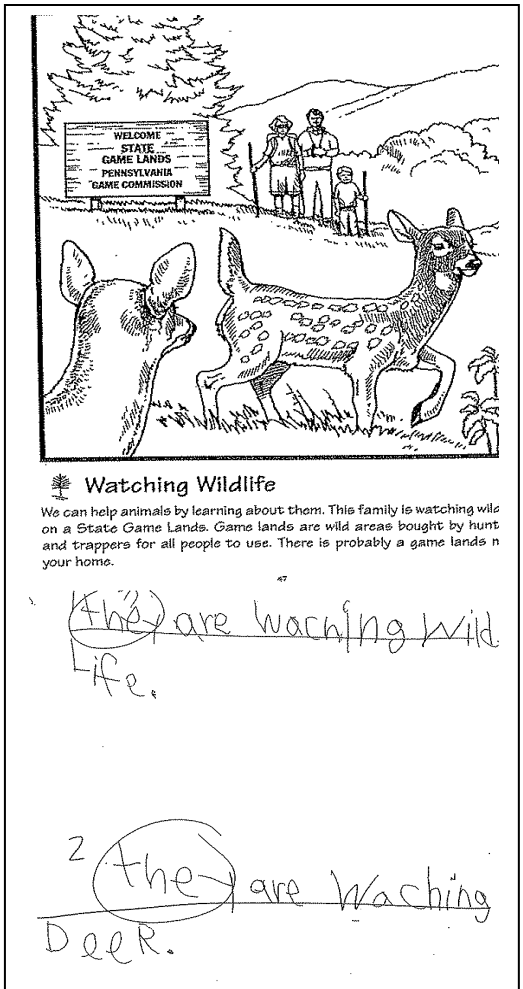


Figure 12. Karrie's lesson on wildlife.

Karrie's literacy artifacts were collected in order to demonstrate her acquisition of literacy skills from the lessons in the classroom. The next section describes the literacy events in the classroom and the artifacts collected.

Karrie's Literacy Events

During one observation, Kendra was with two students working on a lesson in wildlife (Figure 12). Karrie was sitting next to the teacher and appeared to be listening to Kendra while she showed the picture of a deer and a family. The teacher prompted both students to write sentences to describe what the family was doing in the picture. Karrie gave

the teacher a grin and the researcher was able to assess that Karrie had no idea what the teacher meant by a "description." She began to rock in her seat to occupy herself until her teacher assistant came over and prompted her to get back on task. The assistant touched her finger to the paper and said to Karrie, "Tell me what you see the family doing here," and Karrie picked up her pencil and began writing and singing. She looked up from her paper often and stared at a mark on the classroom wall, her eyes fluttering back and forth in self-stimulatory behavior. Karrie was easily distracted by her own need to stimulate herself. Her attention span was very short, and she focused longer on her behaviors than on her paper. The task took Karrie 50 minutes to complete the worksheet. Roughly 21 minutes was devoted to the actual task; the rest of the time she spent engaging in her self-stimulatory behaviors such as rocking, pulling her hair, and digging her nails into her arm. Kendra and the assistant in the classroom consistently prompted Karrie to attend to her task; however, Karrie fixated on the whiteboard. She had difficulty staying on task for longer than 4 minutes. Karrie was able to finish two sentences in relation to the picture of the deer and family. The sentences clearly depicted that Karrie understood what was happening in the picture. With consistent prompting, she was able to write nicely-crafted sentences.

The researcher experienced considerable difficulty obtaining complete writing samples and literacy experiences, because many children with ASD find tasks difficult to begin, attend to, and finish. Karrie had a limited vocabulary, but the researcher sensed that she had considerable information captive in her mind that had not been released. Karrie was lost in her own stimulations, and she found it difficult to get through a couple of minutes without engaging in a behavior that soothed her. Her constant rocking behavior made it very hard for her to sit at a table and work. Her teachers adapted to her needs and let her complete

her work at the whiteboard or stand up to reduce the rocking behavior. The teachers had not solved the puzzle presented by Karrie's behavior.

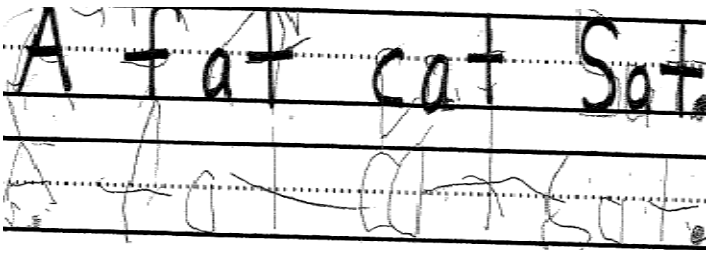


Figure 13. Karrie finished a sentence with

The researcher had the pleasure of watching Karrie while she was engaged in a writing activity. Karrie was finishing a sentence when the researcher first walked into the classroom. She appeared to be very focused on making every line match the sentence above on her sheet (Figure 13). The researcher observed her moving her eyes from the top line to the bottom line in order to check her work. Karrie was writing the sentence as a response to a rhyming lesson that her teacher had given the students moments before the researcher had walked into the classroom. Karrie held her pencil tightly and was intent on finishing the sentence. She seemed pleased by her work when she was finished, as she moved from her seat and brought it to the teacher with a smile on her face. She handed it to her teacher, and her teacher praised her quickly and then instructed her to go back to her seat and draw until her classmates completed their tasks. Karrie was happy to sit and draw while her classmates finished their work. She wrote symbols of what appeared to be a "p" or a "g" repetitively (Figure 14). While she was drawing and writing on her blank sheet of paper, she was reciting her alphabet in a muffled tone. She skipped letters in her alphabet rehearsal, putting "g" before "d," and she appeared happy while she

Figure 14. Karrie wrote "p" and "g" while waiting in response to alphabet.

was singing and writing. Karrie also practiced her spelling words while she waited and made a list to indicate the words that she knew (Figure 15). Karrie was rocking in her seat, and her teacher quickly tapped her shoulder to distract her from that behavior. Karrie would then begin writing again and continued to list her words. At one point during her writing, she stated that she was hungry and began a song about a frog being hungry and eating flies. Her speech was difficult to decipher; however key words were present enough for the researcher to identify. Usually when Karrie was drawing she was singing, and her school environment accommodated this practice. Karrie's long brown hair usually got in her eyes, and she had to push it forward to keep from writing on it. She was always groaning about her hair hurting, and she pressed hard on the top of her head. Karrie's teacher was not able to figure out if her behavior of pressing on her head was a sensory need or if she had a headache and couldn't communicate that. Often it was difficult to know what was going on with her, since she had a variety of medical issues in addition to being on the autism spectrum. Karrie often had symptoms of mild seizures which presented themselves in a way that made them very hard to detect. This may have also accounted for the irregularity in her work ability. Sometimes she mastered writing words, while at other times her work looked like scribbling. She often stared at something for a brief period of time, and many times it was not clear whether she was having a mild seizure or just staring. This type of seizure was hard to determine, and made it even harder to educate Karrie. It was possible that Karrie could be experiencing a mild seizure when Kendra thought that the child was not paying attention. On one particular visit, the researcher observed Karrie's classroom

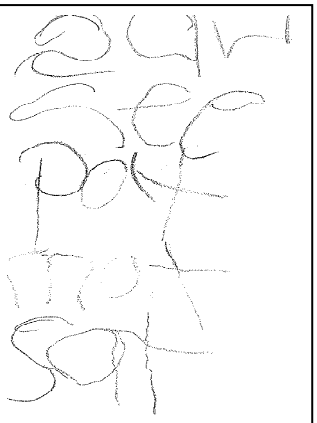


Figure 15. Spelling list.

and saw Karrie standing in the doorway rocking, holding onto the door frame, and repeating "hi." As the teacher unhooked her hands from the door frame and moved her to another place in the room, the researcher was able to enter the classroom to observe Karrie's math lesson. Karrie was led to her desk and sat easily in her chair; she complied with her teacher's request to wait patiently for her to gather the materials for the lesson. Shortly after the students began placing pennies into a cup and counting, Karrie began rocking. Several times throughout the lesson Karrie stared off into space, and the teacher assessed her for seizure activity by checking the dilation of her eyes. Kendra would then continue on with the lesson after a few minutes. Karrie was picking up the pennies with her right hand and using her middle finger and thumb to put them in the cup. Her teacher would hold up a picture of the number and verbally say the number, paying particular attention to the sound annunciation. In response, Karrie said, "One, two, three, four, five," and then there was silence. She stopped counting, began rocking, and pulled her hand away from her teacher. She was no longer going to engage in the lesson, and the teacher decided a quick break on the trampoline might re-energize her. Quickly the teacher moved her over to the trampoline and held her hands as Karrie jumped for ten minutes. Her face was smiling, and she was yelling with delight at every jump. The visual timer in the corner gave Karrie and the teacher an idea of when ten minutes were over, and when it indicated that she should stop, Karrie stopped. The teacher was elated that Karrie recognized the stop sign and praised her for her good work. Karrie's facial expression appeared blank; it was as if she didn't recognize that her teacher was talking. She and her teacher marched back over to her desk and began counting again with the pennies, and she made it all the way to 32 when she decided she had enough. Her

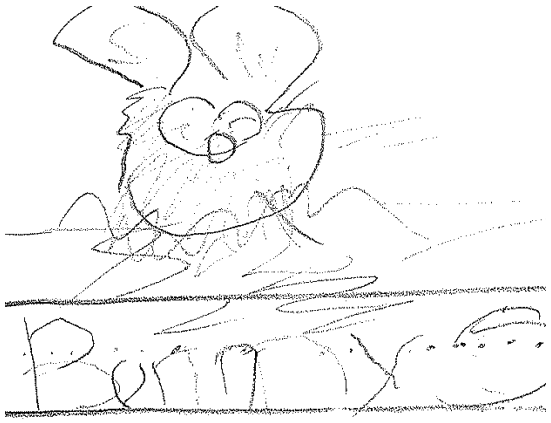


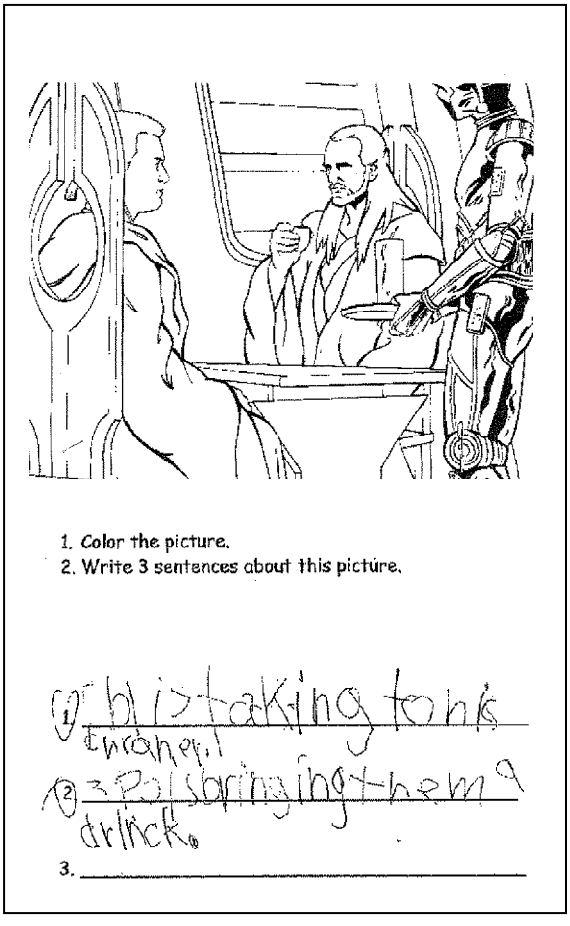
Figure 16. Karrie wrote "bunny" with a picture after a story in a book.

teacher praised her and allowed her another ten minute break. Karrie and her teacher began to thumb through *Richard Scarry's Watch Your Step Mr. Rabbit*.

The researcher observed Karrie watching and listening to the book as her teacher read through each page, and her facial expressions indicated that she appeared to understand and grasp the content of the book. Her teacher pointed to a picture of a rabbit and asked, "What is this?" Karrie replied, "A bunny." Her teacher then pointed to another object and waited for a response, and the questions continued throughout the entire book. On every page her teacher would ask her about something, and Karrie would answer. The researcher observed that Karrie has inter-verbal skills and was able to follow questions by looking at the illustrations in the book for cues. After the book, Kendra asked her to write two sentences about what the bunny was doing in the book and drew a picture (Figure 16). Karrie was smiling and gripping her pen but wouldn't independently put the pen to the paper. She was prompted two more times before she began writing. Karrie laughed as she was writing; it was a laugh that did not appear to be precipitated by anything in the environment. She started to sing a song while she was writing. Her song appeared to be the content that was on her paper. She sang, "My bunny is a nice bunny, my bunny is a nice bunny," over and over again until she finished her sentence. She had almost completed a sentence about the bunny when the fire alarm screamed throughout the school. Karrie immediately started to scream and hold her ears, rocking back and forth in her chair. The teacher and teacher

aide responded quickly by getting the students organized to the door to exit the classroom. Karrie was frozen with fear. She rocked and screamed continuously. The teacher eventually had to physically take Karrie under the arms, wrap her arms around Karrie's waist and walk her out of the door. The entire time Karrie was screaming and holding her ears. The researcher noticed that the other students in the classroom had similar reactions but were able to physically leave by themselves. Karrie was simply terrified and could not function enough to get herself out of the classroom. As Karrie and the teacher walked outside, the researcher stood close to observe her de-escalation, which was arduous for the teacher who was trying desperately to calm her and to get her to a place of comfort. Karrie slowly came around to a calmer disposition, but she isolated herself, shut down from everyone, and stared into space. The fire drill had ended, and the teacher again walked Karrie back into the building, put her in her desk chair and tried to get her back on task. The teacher's efforts were futile; Karrie was done for the day. She reverted back to a place where she felt secure and appeared to be looking out into space with little or no affect at all. Karrie never regained her desire to work or finish her bunny drawing. In fact, she didn't communicate with anyone for the rest of the afternoon. At one point, Karrie got up from her desk and walked to the window, plopped down on the floor, put her head against the wall and fell asleep. The researcher wondered whether the fire alarm sparked her to have a seizure. Sometimes children with seizure disorders become tired after they have experienced a seizure (Foldvary-Schaefer & Wyllie, 2007). Despite all of Karrie's limitations, she still had a strong willingness to learn. She knew many words and comprehended the meaning of them as well. She had to rely heavily on pictures in school, and sometimes when she was frustrated she used sign language to get her needs met. In rare instances, she acted out aggressively to get what she desired,

particularly when she was sick or there was a substitute in the classroom. Karrie and her father were Star Wars fans. The researcher was present on a day when the teacher was using a Star Wars lesson in order to inspire Karrie to write sentences. The teacher gave Karrie a picture of a black-and-white Star Wars worksheet and asked Karrie to follow the directions on the second page (Figure 17). Karrie studied the picture for a few minutes and pointed to the drink in the picture. The teacher responded by asking her to write about what she saw in the picture. Karrie began to write sentences in the required area. From the sentences shown in Figure 17, it appeared that Karrie had a comprehension of what was happening in the picture. Her sentences alluded to "talking" and to "bringing a drink," both of which are occurring in the picture above. Although Karrie had not finished the sentences and the coloring of the picture, she brought the work to her teacher, was praised by her teacher, and then asked if she could go to the bathroom by signing with her fist "potty." The teacher assistant took Karrie to the bathroom.



On one occasion, Karrie offered the researcher a pencil and an eraser and pointed to the chalkboard. Since it was originally intended for the researcher to not participate in classroom activities, the researcher quickly glanced at the teacher for approval. Kendra nodded her head in approval, and the researcher took both items, walked to the chalkboard,

and asked, “Should I write on the chalkboard with this pencil?” Karrie burst into infectious laughter, evidently amused by the incongruity of writing on a chalkboard with the wrong tools. Her teacher said, “Now answer the question,” and Karrie replied with a “no” and further hilarity. After her attempts of joking with the researcher, Karrie decided she was ready to read *Hop on Pop* by Dr. Seuss with her paraprofessional after being prompted several times. She sat cross-legged on a mat waiting for the start of the book and let out a loud shriek that alerted everyone. As the entire room took notice, she smirked as if to say that she was satisfied by her ability to command everyone’s attention. The researcher watched as Karrie and the paraprofessional read through the book and found it interesting that Karrie put her finger on every word that was read out loud just as a beginning reader would do. Karrie’s understanding and comprehension of the written words seemed limited at this juncture, but resembled what a new reader might do as she or he is discovering what each word may mean or look like. This confused the researcher, as it was apparent from other visits that Karrie had a deeper understanding of words and was capable of extending her vocabulary. Today, her knowledge base seemed limited, and it struck the researcher that in a matter of weeks between visits, the learning process changed for her. When discussing this with the teacher, she explained that Karrie works in a vacuum sometimes. Certain things she remembers, and certain things she doesn’t—a strange and often frustrating pattern which makes it difficult to

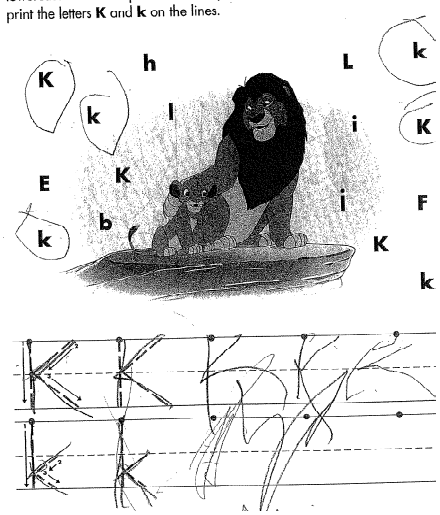


Figure 18. Karrie does writing after the story of the Lion King.

plan lessons for her and to evaluate her progress. On another occasion, Kendra was reading *The Lion King* to a few students in the corner of her classroom. Two students were sitting on a carpet and Karrie was sitting on the floor with a pillow. The three students seemed to be listening to the story, even though there were noises coming from each student. At some points in the story, Kendra's voice was thunderous in order to overpower some of the mumblings, reverberations and outcries of the students in Karrie's group. The story ended, and Kendra asked the students to go back to their seats. Each child proceeded back to his/her area, and Kendra handed out a *Lion King* worksheet (Figure 18). The worksheet asked each student to circle the capital "K" and the lower case "k" and then trace and write below the picture. Karrie was rocking in her chair aggressively on this day and needed further prompting by the teacher assistant. The teacher assistant helped Karrie focus on her paper by saying "write" consistently. Karrie would write or circle something and then go back to rocking. After countless episodes of prompting and then writing, Karrie finally scribbled on the paper and threw her pencil on the ground. She had enough of the worksheet and the teacher assistant. The teacher assistant held Karrie's hand, escorted her over to the pencil that she had thrown on the floor, leaned over with Karrie and, hand over hand, picked up the pencil and brought it back to the table. Karrie was forced to sit at the table and, after fifty seconds of sitting quietly, her teacher assistant excused her from the table and allowed her time to work independently in a learning center. Karrie opted to stand in front of the windows in the back of the room and rocked for ten minutes.

Karrie was having a particularly difficult day when the researcher showed up for the last observation. She appeared to be unsettled; she was twitching and jiggling around in her seat. She seemed very restless and noncompliant to Kendra's requests. At one point before the lesson, Karrie kicked her shoe off, and it flung so far that it hit the pencil sharpener on Kendra's desk. Kendra didn't appear to be amused by the incident. Kendra had invited the researcher to a party in the classroom that was celebrating the fall season. Before Kendra gave out the party goodies, the students were asked to do a worksheet to practice their "L" for the lovely leaves outside (Figure 19). Karrie was not interested in doing an activity, as she had earlier seen the snack and juice. It appeared she could think of nothing else. Kendra instructed the teacher assistant to work with Karrie on her worksheet. The teacher assistant and Karrie persisted to finish the worksheet, but the only success that Karrie experienced occurred when she was prompted hand over hand. Inevitably, Karrie began scribbling quickly in order to get the worksheet done and put her pencil down. Kendra looked over to Karrie's work and nodded to the assistant that the task was over. The students eventually enjoyed a treat and juice. The researcher said goodbye to Kendra, the staff, and the students and felt a bit saddened that the journey had come to an end.

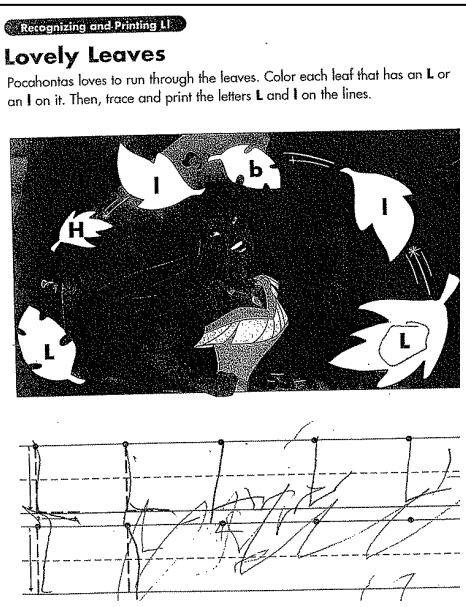


Figure 19. Karrie had a difficult day.

Chapter Summary

This chapter was a closer glimpse into the school and home environments of children with ASD in regards to literacy acquisition. The teachers, parents and students provided insight by allowing the researcher to delve into their intimate practices, beliefs and systems. Through a myriad of methods, the researcher was able to glean pertinent information from educators who work with students with ASD. Chapter Five will attempt to answer the research questions identified in Chapter One and assist the reader in understanding autism and literacy acquisition from the perspective of teachers, students and parents. Furthermore, Chapter Five will summarize this study and discuss its implications, as well as recommend future research in the education of children with ASD.

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

Broad Overview of Study

The goals for education of children with autism and related disorders are the same as the goals for all other children—to help develop their potential for personal self-sufficiency and independence (Volkmar & Weisner, 2009). For children with autism, there are additional challenges that include social and communication difficulties, behavioral and sensory issues, and problems with organization and transitions. Students with ASD process and respond to information in different ways, which makes educating this population—particularly in literacy—especially difficult.

A brief observation in a single setting cannot present a true picture of an individual's abilities and behaviors, and this is no less true for those diagnosed with ASD. This study used multiple data sources from families, teachers, and the children themselves to produce two case studies of young children with ASD as they attempted to master various emergent literacy skills. Emergent literacy skills are comprised of a set of foundational abilities that are considered to be developmental precursors to skilled and fluent reading (Whitehurst & Lonigan, 1998). These abilities are thought to develop in an interconnected fashion and include oral language, phonological awareness, print concepts, alphabet knowledge, and emergent writing (Cabell, Justice, Zucker & McGinty, 2009). Since literacy extends throughout the curriculum and supports learning in each of the subject areas, it is important to understand the underpinnings of educating students with ASD and the process by which their literacy skills develop and emerge. By studying the early learning skills of young children with autism, we come closer to understanding the type of support that is necessary to

enhance achievement in this population. The practices and pedagogical decisions made by the classroom teacher to facilitate literacy acquisition are of particular interest in order to advance student achievement across the curriculum. Additionally, as teachers make the adaptations necessary to support the young child with ASD's literacy learning, their experiences can be instructive for all teachers who educate this population.

This study was conducted through the use of observations of teacher practices within the natural classroom environment. It included interviews of teachers and parents, and analysis of literacy artifacts produced by children with ASD. The purposes of this qualitative case study were to: a) examine two kindergarten teachers' beliefs about literacy acquisition in young children with autism, b) identify pedagogical strategies that two kindergarten teachers used to foster literacy skills in children with autism and, c) analyze student work collected by kindergarten teachers that was designed to foster literacy growth. The goals of this study were to: 1) reveal some of the ways that kindergarten teachers support literacy growth of young children with autism, 2) discover appropriate and effective methods and adaptations so that other teachers may adopt these practices, and 3) present an argument for teacher self-efficacy as a key element in fostering the communication skills of students with autism. Consequently, this study posed the following questions to enhance the future instruction of children with autism:

1. What philosophical stances, pedagogical strategies, classroom procedures, and curriculum adaptations are used by school teachers to foster literacy growth in young children with autism?

2. What do teachers report as their teaching philosophy, and to what extent is that philosophy evident in their language interactions with young children with autism?
3. How do the students and teachers interact in the classroom during literacy lessons?
4. How is the classroom set up and organized as a literacy environment?
5. What curricular adaptations do teachers make in order to meet the individual needs of a child with autism, and how do they measure and modify these tools?
6. What types of literacy events occur in the classroom for children with autism?
7. What types of drawings or writings are produced by children with autism, and what qualities are most expressed in these artifacts that demonstrate literacy acquisition?

Teacher Beliefs

Teacher beliefs influence teaching practice and have an impact on students' educational experiences (Beach, 1994; Berry 2006). For most teachers, beliefs are formed early, remain highly durable, and acquire emotional dimensions (Pajares, 1992). In situations that are fraught with ambiguity, such as educating students with ASD, teachers draw on their beliefs to guide the multitude of on-the-spot decisions they make every day. This study sought to uncover the philosophical foundations and beliefs of each teacher in order to reveal optimal practices in educating students with ASD.

Summary of Interview: Beliefs of Teacher 1, Heather

There were distinct differences in the interview processes of both teachers. Heather was a young, energetic and novice teacher who vocalized excitement in her responses. She

demonstrated a clear desire to educate the students in her classroom, not only by her positive tone, but also through her knowledge of current practices. She defined literacy as pictures, words, drawings, pointing, utterances and actions. She relied on strategies such as: a) applied behavior management techniques, b) picture schedules, c) different instructional formats and d) enhanced engagement of the students. Although she felt confused by the lack of scientific information regarding teacher practices, her instructional repertoire was impressive. She expressed a distinct understanding of emergent literacy opportunities and the need to incorporate these throughout her classroom environment for her students. Heather believed strongly that parents and families should be a part of her classroom, and she discussed collaborating with them by using literacy events that encouraged parents to work with their child at home (i.e. the literacy bags referred to in Chapter Four). She revealed that her aspiration for her students was for them to successfully acknowledge the meaning and concepts of words and to also increase their ability to communicate effectively. She envisioned her students becoming productive citizens in society and expounded upon the idea that overcoming the challenges they face in the classroom would prepare them for a successful future.

Summary of Interview: Beliefs of Teacher 2, Kendra

Kendra was a tenured teacher with knowledge from many years as a public school educator. Kendra was factual in her responses and demonstrated a firm belief in the need for her students to follow the rules. She defined literacy as a reading event in her classroom which engaged students to discuss a book and write about the story in order to check for comprehension. She articulated that she fostered growth in her students by demanding high achievement of them and felt that her students would ultimately be able to meet the standard.

Kendra discussed her difficulties in teaching children with autism, as this was a group with which she had no previous experience. Kendra confided that she felt nervous and frustrated when she first began teaching children with ASDs and that she had trouble adapting her lessons to accommodate to their unique learning styles. Her self-reported instructional repertoire consisted of basal readers, story time and worksheets, individual instruction time and cooperative groups. Kendra's aspiration for her students with autism was to give them the foundational tools they needed to be successful during elementary grades. She articulated that she wanted her students to be able to communicate with those around them to get their basic needs met, and that was her primary goal for all of the students in her classroom.

Common Beliefs of Both Teachers

The foundations of both teachers in this study were rich with childhood memories of their own literacy events and specific recollections of people in their lives with whom they shared these moments. Each teacher had her unique story; however, both discussed similar critical incidents in their lives that forged their decision to become a teacher. Their desires to be educators were comparable in that they knew, early in life, that they aspired to guide and support the learning of others.

Both teachers believed that early literacy is important, especially for children with ASD. Each teacher drew on her own literacy events as a child and the influence of literacy in her life. The teachers in this study espoused supportive beliefs in the abilities of students with autism to acquire literacy skills. They were clear that children on the spectrum were deserving of the same opportunities as students who are developing in a more typical fashion. Heather's and Kendra's foundational philosophies were centered on the theory that each student is unique and merits the individual opportunity to achieve. Both teachers relayed

feelings of support for the practice of using a variety of materials to enhance the literacy acquisition of students with ASD. The teachers initially identified common strategies they used to enhance literacy in their students that included: a) individualized instruction, b) behavior management interventions, and c) reading books to students. From the onset of the study, both teachers indicated their passion for teaching and their commitment to the population of children on the autism spectrum. They indicated that they felt strongly about incorporating instructional practices into their classroom that were geared toward students with ASDs. The teachers articulated that they themselves had grown and learned through the process of teaching students with ASDs. However, each noted the struggles that they encountered during the course of their own learning and discussed the extra effort it took to overcome these difficulties to achieve understanding of and improve education for this population.

The teachers noted that finding beneficial and scientifically-proven methods to teach children with ASD was a challenge. Both teachers indicated that they felt less-than-confident in their ability to effectively teach students with ASDs. They believed that there was little room in the budget to afford further training and, therefore, the idea of additional training would not be supported by their administration. Neither of the teachers had approached their administration about their feelings of inadequacy and needing further training, and both acknowledged that their assumption might be incorrect. They expressed concern over the fact that their training was limited and that they used materials that "seemed" legitimate. These two kindergarten teachers questioned their own worth when it came to teaching students with autism. Although they were trying to do the right things for their students Tommy and Karrie, they remained skeptical about the overall effectiveness of their

instruction in literacy. They believed they were teaching appropriately and working as hard as they could, yet sometimes they weren't sure if they were meeting all of their students' needs.

Parent Beliefs

Parental involvement, which encompasses the patterns and nature of parent-professional interaction, has been identified as a key to building strong and effective educational experiences for children with disabilities (Stoner et. al, 2005). Effective communication among the IEP team members is essential in providing best possible programs for students receiving special education services (Lytle & Bordin, 2001). Collaboration with families is particularly important for individuals with autism spectrum disorders who often have difficulty with change and may respond to different expectations, environmental cues, and behavioral consequences by exhibiting challenging behavior (Scheuermann & Webber, 2002). Consistency across settings can act as a prevention of such problems (Hall, 2009).

Summary of Parent Interviews

The parents in this study who were interviewed had strong beliefs in their children achieving, particularly in literacy acquisition. There were no real differences in their belief systems to necessitate an individual summary section for each set of parents. Likewise, their interviews broadcast several similar topics in relation to their children and their belief system. Both sets of parents detailed their painful discovery that their child had ASD and the emotional toll associated with it. Parents in this study appeared forlorn over their experiences and what the future entails for their children.

The two sets of parents had an intense and passionate belief system that their children can and will learn. They frequently mentioned the laborious effort it took to educate and raise a child with ASD. Additionally, they discussed their relationships with their child's teachers as being positive and collaborative overall. One set of parents commended their child's teacher with giving them many tools to adopt in the home. The parents in this study believed that working with their child's teacher was essential in maximizing learning. Each set of parents incorporated practices from the school environment and at home felt that this collaboration was significant in the life of their child.

Both sets of parents expressed their beliefs that their children had the ability to use literacy concepts and acquire new ones as they were taught. The parents acknowledged the difficulty of teaching their children, but firmly believed that they had the capacity to gain knowledge and ultimately acquire further skills. Both sets of parents believed in reading events and stressed their persistence in motivating their children to learn to communicate by using pictures and words. Engaging in shared book reading and discussing the importance of continuing this practice through the lifespan were important activities to the parents in this study. The teachers and parents in this study were supportive of the belief that students with ASD have the capacity to acquire literacy skills.

Evaluation of Classroom Environment

Through observations and the rating scale *ECERS-R*, which evaluates the classroom environment, results of this study indicated that teachers who provided a structured and organized classroom environment had greater success in keeping their students on task with less behavioral outbursts. Often, students with ASD have difficulty with transitioning from one activity to another; therefore, a strong routine paired with a visual schedule of the day's

events helps the student to learn to meet expectations. Additionally, classroom environment outcomes from this study supported the notion that when teachers structure an environment that facilitates specialized curricula, active child engagement, and a strong behavioral management program this offers the best chance for students with ASD to achieve academically.

Classrooms that were well organized to allow students to explore without overwhelming distractions scored higher on the *ECERS-R*. Furthermore, classrooms that used teacher-supported learning centers coupled with teacher encouragement were ranked higher on *ECERS-R*. These findings further support Harris', Handleman's and Jennett's (2005) work that concluded that the classroom environment for the child with ASD should enhance and not distract engagement and attention. Likewise, the teachers in this study were cognizant of the need to reduce distractions and produce an environment that was organized to minimize disruption in the students' learning. Additionally, in this study, the scores from the *ECERS-R* indicated that a classroom that encourages staff and parental involvement created a learning environment that offered more opportunities for the student with ASD to achieve. Teacher scores on the *ECERS-R* also indicated that collaboration of all meaningful people in a student's life appeared to be a critical piece that enhanced a students' programming.

Individuals with ASD often require developmental assistance in using a multitude of methods to enhance learning. Intervention strategies should be carefully planned to fit each child's current needs and abilities and are more successful when they are consistent with a long-term plan or goal for the student. Areas of intervention typically address the core diagnostic features of autism deficits with social interaction and communication but also

include other issues such as learning. The report from the National Research Council on Educating Children with Autism underscores several of the important priorities for intervention. They include: a) development of functional, spontaneous communication, b) social instruction in various settings, c) enhancing play skills and peer play abilities, d) enhanced academic and cognitive growth including a range of abilities and problem solving skills, e) positive behavioral interventions for problem behaviors, and f) functional academic skills and integration in mainstream setting as appropriate (Volkmar & Wiesner, 2009). The areas identified by the National Research Council are beneficial to refer to when evaluating classroom and student programming for children with ASD. Due to the difficulties with obtaining permission, few previous studies of young children with ASDs have included in-class observations. This study did incorporate in-class observations of students with ASD engaged in literacy lessons with their teachers. The next section describes the summary of teacher observations and the approaches that they used effectively with their students with ASD.

Summary of Teacher Observations and Approaches

According to *Educating Children with Autism*, there are areas of agreement regarding literacy development across the ten comprehensive programs it surveyed (Volkmar & Weisner, 2009). There was consensus from all of the programs that early intervention can make a major difference for many children on the spectrum. There was also agreement on the importance of several components of intervention programs:

- Intervention needs to be planned and intensive.
- Specific curricula should be used.
- Intervention programs must be interdisciplinary with good integration of services.

- Teachers and other service providers need experience, training and on-going support.
- Family involvement is critical to help the child generalize skills.
- Child engagement is essential; the child has to be actively involved.
- Functional behavior management procedures should be used to foster behaviors that facilitate learning.
- Attention must be paid to transition planning (Volkmar & Weisner, 2009).

Many of the above priorities were integrated and recognized in the classrooms that were observed in this study. The following paragraphs serve as the conclusions drawn in regards to the key strategies that these teachers use in their daily practices.

Teacher 1: Heather

Heather believed and practiced the concept of providing individual instruction to students with ASD in order to promote their unique learning style. Presenting materials to a student in a multitude of ways capitalized on the strengths of each unique student. There was an integration of literacy awareness throughout the classroom, and the students were encouraged and guided to partake in the activities. Students who struggled to recognize words in her classroom had pictures around the environment that served as a stimulus to the student's memory of the word. Furthermore, an important element for this teacher was to pair a word to a picture and then help the student with the auditory and phonetic attributes. This practice helped the student connect the meaning, sound and visual with a particular word, ultimately elevating the understanding for the student.

An individualized approach to each student in Heather's classroom was evident through lesson planning, visual scheduling, prompting, reinforcement and learning goals. Some students learned with visual prompting, some learned with writing repetition; whatever

they needed to understand is what Heather provided. The difference between each student's learning abilities was staggering, yet Heather was able to continually adapt.

Heather found activities and lessons that were of interest to the students and promoted learning focusing on comprehension. She reinforced students by giving them rewards for staying on task, finishing a piece of work, or successfully verbalizing a word or item. For students who had enhanced abilities, the use of thought-provoking questions and further discussion promoted a deeper understanding. Encouraging and guiding students with ASD to use learning centers was a primary responsibility of the staff in her classroom; otherwise, the student may not have gleaned the concepts for broader understanding and may not have even participated. Heather had clear goals for achieving learning, and literacy was finely woven into all aspects of the curriculum. Learning centers included literacy lessons using storytelling, word identification games, association questions, picture books and picture displays. Following Vygotsky's (1987) theories, she incorporated kinesthetic and auditory dimensions into her lessons and centers that respected students' various intelligences. She used literacy in her classroom and had opportunities available to the students throughout the day. Her own identified interest and beliefs in literacy acquisition for these students was evident throughout the classroom, and the students enjoyed many opportunities for advanced learning.

Observations of the first classroom produced an assortment of successful strategies that were used daily in order to enhance the literacy acquisition of students with ASD. There was an emphasis on using a variety of methods, theories and approaches such as variations of applied behavior analysis, story time, direct instruction techniques, picture exchange systems, sign language, reading curricula, picture books, sensory techniques, gross

motor events and parental involvement, all in order to achieve higher understanding and learning in her students. The classroom was set up for success by using learning centers, a relaxation station, picture schedules and an organization of student furniture that minimized distractions. It was obvious that Heather had high regard for the literacy acquisition of students with ASD and practiced this belief in the arrangement and day-to-day activities of her classroom.

Teacher 2: Kendra

Kendra did not incorporate much newly-designed material for her students with ASD; rather, she used her knowledge from her previous years of teaching and designed her classroom accordingly. Her classroom design was supportive of a student with autism and very well-organized in terms of a daily schedule. The most positive part of her classroom was that her schedule was consistent and this minimized the off task behaviors of her students during transition periods. There was some display of individualized instruction for the students; however, the teacher failed to further their learning by asking questions, clarifying answers or acknowledging a student's behavior during the instruction. Kendra was a good teacher by most standards. In fact, in most other regular classroom environment she probably would perform very well. In a classroom with children with ASD, she failed to adapt her lessons to accommodate each student and missed the mark on enhancing achievement. The behaviors of her students made it difficult for her to see their potential. She often misinterpreted the key characteristics of a student with ASD as bad behavior rather than a functional need of the student. There was a lack of understanding for the difference between a student manipulating and a student engaging in a behavior as a function of trying

to get his/her needs met. Additionally, Kendra often perceived a vocal outburst as defiance to the classroom rules instead of interpreting what the student was trying to communicate.

Kendra read to the students in group and individual formats, yet the follow through of questioning was not observed. She did not encourage her students to use learning resources in her room when she was not engaged in direct instruction. It appeared that as long as students weren't behaving "badly" Kendra was content with them learning the minimal amount.

Literacy events did not promote understanding for the student in this classroom because she rarely encouraged in-depth discussion with her students. At times, her high-functioning students asked her unique questions, but she tended to disregard such questions rather than use them to promote deeper understandings. For Kendra, questions that were unexpected and not readily answerable were not welcomed. Teacher attitude toward the staff in the classroom was directive in nature, sometimes collaborative, but rarely did the classroom operate as a team. Goals were not outlined for student achievement, and lessons were often prepared late or with little consideration for the individual needs of the student. In addition, there was little communication between the parents of the students and the staff of the classroom. Often the staff and teachers would discuss who got "stuck" with the responsibility for writing a note to a parent. Parents did not know of this behavior, and from the outside it appeared that everything was going well in the classroom.

This study indicated a number of strategies and approaches that were useful in literacy acquisition for students with ASDs. An examination of student artifacts was also useful in determining the students' understanding of the literacy lesson or activity. The next section will discuss the information gleaned from the students' artifacts.

Student Artifacts in Relation to Literacy Acquisition

Through the artifact collection in this study, each student illustrated his/her learning in the work that he/she produced. Students with ASD are diverse learners, and their symbolic representations, such as drawing and emergent writing, were particularly important to evaluate their literacy development in this study. Since many students with ASD cannot communicate effectively, their knowledge and thought processes often are demonstrated in the work that they create through other languages of learning. This is reminiscent of the Reggio Emilia approach to education that is committed to the creation of conditions for learning that will enhance and facilitate children's construction of his or her own powers of thinking through the synthesis of all the expressive, communicative and cognitive languages (Edwards and Forman, 1993). As children proceed in an investigation, generating and testing their hypotheses, they are encouraged to depict their understanding through one of many symbolic languages, including drawing, sculpture, dramatic play, and writing. They work together toward the resolution of problems that arise. Teachers facilitate and then observe debates regarding the extent to which a child's drawing or other form of representation lives up to the expressed intent. Revision of drawings (and ideas) is encouraged, and teachers allow children to repeat activities and modify each other's work in the collective aim of better understanding the topic. Teachers foster children's involvement in the processes of exploration and evaluation, acknowledging the importance of their evolving products as vehicles for exchange (Topal, 2008).

According to Clay (1998), one way children express their ideas and thoughts is through a piece of art or a craft (i.e. a construction, model, mural, drama, music, poem or book). As a result, children’s drawings are closely linked to thinking, talking, reading and

writing. Children can express and interpret meaning in mark-making and drawing as well as in speaking and writing (Clay, 1998; Holdaway, 1979). In 1947, Victor Lowenfeld published the book *Creative and Mental Growth* in which he connected intellectual growth, psychosocial stages of development, and six stages of development in children's drawings. Cross-sectional studies by Kellogg (1970) also support the conclusion that children progress in drawing through different stages that fall into predictable age groups: a) the scribble stage, b) the pre-schematic stage, c) the schematic stage, and d) the dawning realism stage. The students in this study were clearly demonstrating literacy acquisition by the work that they had produced. Sulzby et al. (1988) developed 12 categories of "Forms of Writing" based on a longitudinal study of kindergarten children's writing and rereading of their writing. In their study, children's writing samples were collected in group and individual writing sessions through kindergarten and first grade. Extensive results from Sulzby's study revealed that scribbling was used as a form of writing for an enduring period of time and invented spelling often followed.

If we maintain support for Sulzby's 12 categories and Kellogg's developmental stages of drawing, the students in this study displayed a variety of work that demonstrated literacy acquisition. Their work was demonstrated through wavy scribbles, letter-like units, random letters, repeated patterns of letters, copying, invented spellings, and letter-name elements. Their work was indicative of their developmental maturity, rather than chronological age. Most of their work was comparable to that of a typically developing toddler or preschooler rather than that of a school-aged student, and resembled the "scribble stage" that Kellogg discussed. Scribbling is often referred to as the precursor to the reading

and writing process and often set the stage for further development in literacy (Kellogg, 1970).

Stanley and Pershin (1978) have shown that preschool name-writing abilities correspond to children's developmental maturity. Both of the students in this study were observed writing names frequently in their work. Name writing has been used as an indicator of literacy progress (Haney, 2002). Parents and teachers can benefit by gaining insight into what a student is drawing or writing. Adults should embrace children's free exploration of all types of scribbles and placement patterns (Yang & Noel, 2009). Children's development of functional literacy can be facilitated by encouraging them to use drawing as the starting point for name writing and letter reproduction.

Another interesting phenomenon observed in both the students' work and behavior was the concept of self-guiding speech. While students were engrossed in an independent activity, they often had periods of unique storytelling, singing, and conversations with themselves. Jameson (1968) claims that a child talks to himself in pictures by weaving stories around the marks being made, each scribble having a particular meaning dictating the story's direction so that the whole turns into a fantastical journey, a parallel for active fantasy play. Adults typically do not pay attention to the content of this talk, and much of the literature written about education and the drawings of young children focuses far more on the developmental aspects than on the meaning behind the talk (Coates, 2002). According to Kress (1997), it seems as though it is only the drawing that is being interpreted while utterances which could aid understanding are ignored. Student self-talk was evident throughout the observations in this study and gave credence to further exploration into the meaning behind the various utterances exhibited by these students. The researcher often

gleaned meaning from the students' self-talk and, on some occasions, this self-guiding speech was a means of deciphering between lessons and the body of work produced by the students.

Summary of Best Practices

There were a variety of best practices for children with ASD gleaned from this study. They are summarized in Table 8. Teachers who utilize small group instruction with story time themes offered a literacy event for their students that they were able to understand. This process enhanced both the student's literacy acquisition and the communication with peers and adults. Picture books were equally important to this population, and teachers who incorporate individual time to work with students on pictures and words are giving students with ASD an opportunity to comprehend through sight and sound. Repeating these practices was significant in this study as it offered multiple chances for the student to grasp the information in different contexts. There was an emphasis on auditory and phonetic understanding in the classrooms observed and an appearance that the students had the ability and understanding to verbalize after sounds were given as a prompt.

There was an undeniable difference in the comprehensiveness of a student's program when the teacher had a strong relationship with other professionals and the parents of the student. This research study indicated that parent-teacher relationships are an integral part of the development of a complete program for a student with ASD. When the teacher facilitates a relationship with the parent, the parent is more likely to adopt and practice similar methods in the home which helps to further support the classroom program. Furthermore, it is important that the teacher and staff are supportive of one another and work in tandem on a

student's learning program. The harmony between professionals and parents is a critical piece of the learning process for the student with ASD.

There are key characteristics of teachers that enhanced the learning of a student with ASD that were observed in this study. Teachers that have an understanding and a resiliency regarding behaviors of a student with ASD made successful accommodations to the student's learning program. There were many times during a day that lessons were waylaid, activities were put on hold, and work was not completed due to the complexity of the behaviors that students with ASD displayed. Teachers with an understanding of this difficult barrier had more success in de-escalating a student, prompting students, and working through the behaviors, which ultimately created a better learning environment. Furthermore, it was more likely that a student who had become upset was able to recover and integrate back into the learning environment when the teacher exhibited an understanding of the student and assumed a supportive role. Additionally,

Table 8. Summary of Best Practices

- Individualized instruction is important.
- Pairing word, picture and sound encourages understanding.
- Learning centers encourage student understanding of literacy concepts.
- Visual learning is a key strategy for ASD learners.
- Classroom environment must be organized and free of distractions.
- Structured programming is important.
- Literacy events for children with ASD are necessary.
- Repetition of concepts is often helpful to students with ASD.
- Encourage communication between peers.
- Picture books are important for visual learning.
- Small group book discussions and lessons are effective.
- After reading a book, a visual lesson should follow (i.e. worksheet, game, picture discussion).
- Student work can give teachers verification of literacy acquisition.
- Students who are non-verbal demonstrate literacy through their scribbles, drawings, etc.
- For children with ASD, literacy is not just reading and writing.

teachers who exhibited the characteristic of patience had less difficulty working individually with a student and were often more successful in helping a student overcome a stressful event.

Of particular interest, teachers who demonstrated that they had an understanding that communication was a paramount deficit in most students with ASD were able to use literacy as a means to address this weakness. Recognizing that communication and literacy can be similar concepts may allow a teacher to use literacy materials more effectively to help a student get his/her point across. For example, a student who needs to go to the restroom and cannot communicate that to the teacher may increase his/her inappropriate behaviors to get his/her needs met. A possible response by the teacher to help this student can be to use words and picture cards to identify the student's needs. In this context, the literacy material of words and pictures can facilitate communication while decreasing the inappropriate behavioral reaction.

Recommendations

This study identified a number of potential areas for future research. To further the field of classroom environment importance, more studies should be done to evaluate effective classrooms for the student with ASD. These additional studies would contribute to creating a best practices guide to optimal classroom environment for students with ASD. Future research of students with ASD who practice self-talk while engaged in a writing activity could provide insight into their developmental stages of literacy acquisition.

Additionally, further studies on the symbolic representations that students with autism create while writing could give vital information on their thought processes and understanding of literacy concepts. This type of study may allow for a chronological chart of

literacy steps in children with autism much like the one that Kellogg (1970) devised for developmental drawings or that Sulzby (1988) devised for the scribbling of typically-developing children. Furthermore, a cross-case analysis of high functioning and low functioning children with ASDs as they learn to communicate would be beneficial in developing increased communication strategies and identifying patterns of communication. Focus group research with parents of children with ASDs would enhance the research in parent involvement. Examining specialized schools for children with ASDs and their contributions to this population is also an area for future research. A further recommendation for future research is a longitudinal study of training programs for teachers of children with ASDs and the professional development of those educators.

Conclusions

This study sought answers to several questions regarding the acquisition of literacy skills in students with ASD. The broad perspectives gleaned from this study include: a) teachers' and parents' beliefs are significant when it comes to children with ASD and literacy acquisition, b) there are a number of pedagogical strategies that can help to promote literacy acquisition in the student with ASD, c) classroom procedures and environmental setup are noteworthy in offering a successful learning atmosphere, and d) drawings and student work can be utilized to verify the literacy acquisition of students with ASD. This study was done in a specialized school for children with autism; there are many additional challenges to educating students with ASD when they are in "regular" classrooms with their "typical" peers. Teachers must adapt their practices to the appropriate environment for students with ASD.

This qualitative case study was undertaken to more fully understand the literacy growth of young children with ASD. Its major contribution to the field is that it described the experiences of three primary stakeholders in the process; namely, the child with ASD, the child's teacher, and the parents.

REFERENCES

Able-Boone, H., Goodwin, L. D., Sandall, S. R., Gordon, N., & Martin, D. (1992). Consumer based early intervention services. *Journal of Early Intervention, 16*(3), 201-209.

Adshoomoff, N., Pierce, K., & Courchesne, E. (2002). The neurological basis of autism from a developmental perspective. *Development and Psychopathology, 14*, 613-634.

Albright, M., Delecki, K., & Hinkle, S. (2009). The evolution of early literacy. *Children and Libraries, 7*(1), 13-18.

Alberto, P.A., Fredrick, L., Hughes, M., McIntosh, L., & Cihak, D. (2007). Components of visual literacy: Teaching logos. *Focus on Autism and Other Developmental Disabilities, 22,* 234-243.

Alvidrez, J., & Weinstein, R. S. (1999). Early teacher perceptions and later student academic achievement. *Journal of Educational Psychology, 91*(4), 731-746.

American Academy of Pediatrics (2006). Identifying infants and young children with developmental disorders in the medical home: An algorithm for developmental surveillance and screening. *Pediatrics*, *118*(1), 405-456.

American Psychiatric Association (APA). (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: American Psychiatric Association.

Anderson, S. R., Avery, D. L., DiPietro, E. K., Edwards, G. L., & Christian, W. P. (1987). Intensive home-based early intervention with autistic children. *Education and Treatment of Children, 10,* 352-366.

Au, K. H., Carroll, J. H., & Scheu, J. A. (2001). *Balanced literacy instruction.*

Norwood, MA: Christopher-Gordon Publishers.

Autism Society of America (1992). *ASA testifies on autism epidemic: Hearing declares autism national health emergency.* Available on-line at http://www.autism-society.org/news/epidemic_hearing2.html. Retrieved 9/1/09.

Autism Society of America (2006). What are autism spectrum disorders? Available on-line at http://autismsociety.org/site/pageServer?pagename

Ayers, T. (1972). *Sensory integration and the child*. Los Angeles, CA: Western Psychological Services.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(3), 191-215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147.

Baranek, G. T. (2002). Efficacy of sensory and motor interventions in children with autism. *Journal of Autism and Developmental Disorders, 32*(5), 397-422.

Baron-Cohen, S. (1992). Can autism be detected at 18 months? The needle, the haystack, and the CHAT. *British Journal of Psychiatry, 41*(3), 235-237.

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind?" *Cognition, 21*(2), 37-47.

Barnett, A., Henderson, S.E., 1992. Some observations on the figure drawings of children. *British Journal of Educational Psychology, 62*, 341-355.

Barrett, M. D. & Light, P. H. (1976). Symbolism and intellectual realism in children's drawings. *British Journal of Educational Psychology, 46*, 198-202.

Barry, T. D., Klinger, L.G., Lee, J. M., Palardy, N., Gilmore, T., & Bodin, S. D. (2003). Examining the effectiveness of an outpatient clinic-based social skills group for high functioning children with autism. *Journal of Autism and Other Developmental Disorders, 33*, 685-702.

Basil, C., & Reyes, S. (2003). Acquisition of literacy skills by children with severe disability. *Child Language Teaching & Therapy, 19*(1), 22-29.

Bauman, M. L., & Kemper, T. L. (1994). Neuro-anatomic observations of the brain in autism. In M. Bauman,T. Kemper (Eds.) *The neurobiology of autism*. Baltimore: Johns Hopkins University Press.

Bazil, C. W. (2004). *Living well with epilepsy and other seizure disorders: An expert explains what you really need to know.* New York: Collins Living.

Beals, D. E., & Snow, C. E. (1994). Thunder is when the angels are upstairs bowling: Narratives and explanations at the dinner table. *Journal of Narrative and Life History, 4*(4) 331-352.

Bertrand, J., Mars, A., Boyle, C., Bove, F., Yeargin-Allsopp, M., & Decoufle, P. (2001). Prevalence of autism in a United States population: The brick township New Jersey, investigation. *Pediatrics, 108*(5), 1155-1161.

Bloodgood, J. W. (1999). What's in a name? Children's name writing and literacy acquisition. *Reading Research Quarterly, 34*(3), 342-367.

Biklen, D., & Kliewer, C. (2006). Constructing competence: autism, voice and the disordered body. *International Journal of Inclusive Education, 10*(2-3), 169-188.

Bondy, A. S., & Frost, L. A. (2002). *A picture's worth: PECS and other visual communication strategies in autism.* Bethesda, MD: Woodbine House.

Boucher, J., & Lewis, V. (1992). Unfamiliar face recognition in relatively able autistic children. *Journal of Child Psychology and Psychiatry,33*, 843– 859.

Boudreau, D. M., & Hedberg, N. L. (1999). A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *American Journal of Speech-Language Pathology*, *8*, 249-260.

Bong, M., & Skaalvik, E.M. (2003). Academic self-concept and self-efficacy: How different are they really? *Educational Psychology Review*, *15*(1), 1-40.

Branson, D., Vigil, D., & Bingham, A. (2008). Community childcare providers' role in the early detection of autism spectrum disorders. *Early Childhood Education Journal*, *35*(6), 523-530.

Broun, L. T. (2004). Teaching students with autistic spectrum disorders to read. *Council for Exceptional Children*, *36*(4), 36-40.

Browder, D. (2001). *Curriculum and assessment for students with moderate and severe Disabilities*. New York: Guilford Press.

Browder, D., Wakeman, S., Spooner, F., Ahlgrim-Delzell, L., & Algozzine, B. (2006). Research on reading instruction for individuals with significant cognitive disabilities. *Exceptional Children*, *72*(4), 392-408.

Catts, H. W., Aldolf, S. M., & Ellis-Weismer, S. (2006). Language deficits in poor comprehenders: A case for the simple view of reading. *Journal of Speech Language and Hearing*, *49*(2), 278-293.

CDC. (2009). CDC releases new data on autism spectrum disorders (ASD's) from multiple communities in the United States. Retrieved August 31, from http://www.cdc.gov/od/oc/media/pressrel/2007/r070208.htm

Chandler-Olcott, K., & Kluth, P. (2009). Why everyone benefits from including students with autism in literacy classrooms. *The Reading Teacher*, *62*(7), 548-557.

Charlop-Christy, M., Carpenter, M., Le, L., LeBlanc, L., & Kellet, K. (2002). Using the picture exchange communication system (PECS) with children with autism: assessment of PECS acquisition, speech, social-communicative behavior, and problem behavior. *Journal of Applied Behavioral Analysis*, *35*(3), 213-231.

Church, C., Alisanski, S., & Amanullah, S. (2000). The social, behavioral, and academic experiences of children with asperger syndrome. *Focus on Autism and Other Developmental Disabilities*, *15*(10), 12-20.

Clay, M. M. (2002). *An observation survey of early literacy achievement (2nd ed.).* Portsmouth, NH: Heinemann.

Clay, M. M. (1998). *By different paths to common outcomes*. Portland, ME: Stenhouse Publishers.

Coates, E. (1993). The language of appreciation through talking and making. *Educational Review*, *45*(3), 251–262.

Coleman, M. (2005). *The neurology of autism*. New York: Oxford University Press.

Cubell, J., Justice, L. M., Zucker, G., & McGinty, R. (2007). Emergent name writing abilities of preschool aged children with language impairments. *Language, Speech and Hearing in Schools*, *40*, 53-66.

Dahle, K. B. (2003). Services to include young children with autism in the general classroom. *Early Childhood Education Journal*, *31*(1), 65-69.

Decker, S. N., & Vanderberg, S. G. (1985). Colorado twin study of reading disability. In D. B. Gray & J. F. Kavanaugh (Eds.), *Biobehavioral measures of dyslexia*. Parkton, MD: York Press.

Denzin, N. K., & Lincoln, Y. S. (2005). The discipline and practice of qualitative research. In N. K. Denzin and Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.) (pp. 1-28). Thousand Oaks, CA: Sage.

Dettmer, S., Simpson, R., Myles, B., & Gantz, J. (2000). The use of visual supports to facilitate transition of students with autism. *Focus on Autism and Other Developmental Disabilities*, *15*(3), 163-169.

Devers, K. J., & Frankle, R. M. (2000). Study design in qualitative research, 2: Sampling and data collection strategies. *Education for Health: Change in Learning & Practice, 13,* 263-272.

Dewey, J. (1926 [1916]). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan. For an electronic version, see http://manybooks.net/authors/deweyjoh.html

Dweck, C.S. (2000). *Self-Theories: Their role in motivation, personality, and development.* Philadelphia, PA: Taylor and Francis.

Cox, M.V., Eames, K., & Cooke, G. (1994) The teaching of drawing in the infants school; an evaluation of the 'negotiated drawing' approach. *International Journal of Early Years Education*, *2*(3), 61-83.

Eaves, L. C., & Ho, H. H. (2004). The very early identification of autism: Outcome to age 41/2–5. *Journal of Autism and Other Developmental Disorders, 34*(4), 367–378.

Erickson, K., & Hatton, D. (2007). Expanding understanding of emergent literacy: Empirical support for a new framework. *Journal of Visual Impairment and Blindness, 101*(5), 261-277.

Erickson, K., & Koppenhaver, D. (1995). Developing a literacy program for children with severe disabilities. *The Reading Teacher, 48*, 676-684.

Evans. K., & Dubowski. J. K. (2001). *Art therapy with children on the autistic spectrum: Beyond words*. Philadelphia: Jessica Kingsley Publishers.

Feinberg, E., & Vacca, J. (2000). The drama and trauma of creating policies on autism: Critical issues to consider in the new millennium. *Focus on Autism and Other Developmental Disabilities, 15*, 130-138.

Filipek, P.A., et al. (1999). The screening and diagnosis of autism spectrum disorders. *Journal of Autism and Other Developmental Disorders, 29*(2), 439-79.

Filipek, P., Accardo, P., Ashwal, S., Baranek, G., Cook, E., & Dawson, G. (2000). Practice parameter: Screening and diagnosis of autism. *Neurology, 55*, 468-479.

Fombonne, E. (2003). Epidemiological surveys of autism and other pervasive developmental disorders: An update. *Journal of Autism & Other Developmental Disorders, 33*, 365–382.

Fombonne, E. (1996). Is the prevalence of autism increasing? *Journal of Autism and Other Developmental Disorders, 26*(6), 673-676.

Gardner, H. (1973*). Frames of mind*. New York: Basic Books.

Gardner, H. (1988). Foreword. In L. K. Obler & D. Fein (Eds.), *The exceptional brain: Neuropsychology of talent and special abilities.* New York: Guilford.

Gardner, H. (1994). *Creating minds.* New York: Basic Books.

Genisio, M, & Drecktrah, M. (1999). Emergent literacy in an early childhood classroom: Center learning to support the child with special needs. *Early Childhood Education Journal, 26,* 225-231.

Glesne, C. and Peshkin, A. (1992). *Becoming qualitative researchers: An introduction.* White Plains, NY: Longman.

Glesne, C. (1999). Becoming Qualitative Researchers. New York: Longman.

Giangreco, M. F., Edelman, S. W., & Broer, S. M. (2003). Schoolwide planning to improve paraeducator supports. *Exceptional Children, 70*(1), 63-79.

Goin-Kochel, R. P., Mackintosh, V. H., & Myers, B. J. (2009). Parental reports on the efficacy of treatments and therapies for their children with autism spectrum disorders. *Research in Autism Spectrum Disorders, 3,* 528-537.

Goin-Kochel, R. P., Macintosh, V. H., & Myers, B. J. (2007). Parental reports on the use of treatments and therapies for children with autism spectrum disorders. *Research in Autism Spectrum Disorders, 1,* 195-209.

Gray, C. A. (1994). *Comic strip conversations*. Arlington, TX: Future Horizons.

Gray, C. A. (1995). Teaching children with autism to read social situations. In K. A. Quill (Ed.), *Teaching children with autism* (pp. 219-241). Albany, NY: Delmar.

Grandin, T., & Barron, S. (2006). *The unwritten rules of social relationships: Decoding social mysteries through the unique perspectives of autism*. Arlington, TX: Future Horizons.

Grandin, T. (1991). Overcoming autism: A first person account. *Harvard Mental Health Letter, 7*, 4-7.

Grandin, T. (1995). *Thinking in pictures and other reports from my life with autism*. New York: Doubleday.

Grandin, T. (2002). Myself. *Time*, *159*(18), 56. http://search.ebscohost.com

Greenspan, S. I., & Weider, S. (1998). *The child with special needs*. Reading, MA: Addison-Wesley.

Greenspan, S. I., & Wieder, S. (2009). *Engaging autism: Using the floortime approach to help children relate, communicate, and think*. Cambridge, MA: Da Capo Lifelong Books.

Goldstein, H., Kaczmarek, L., Pennington, R., & Shafer, K. (1992). Peer-mediated intervention: Attending to, commenting on, and acknowledging the behavior of preschoolers with autism. *Journal of Applied Behavior Analysis, 25,* 289-305.

Goldstein, S., & Turnbull, A. (1982). Strategies to increase parent participation in IEP conferences. *Exceptional Children, 48* (4), 360-361.

Golomb, C. (2004). The child's creation of a pictorial world. Mahwah, NJ: Lawrence Erlbaum Associates.

Goodenough, F. (1926). *Measurement of intelligence by drawings*. New York: World Book Company.

Guralnick, M. J. (2004). Family investments in response to the developmental challenges of young children with disabilities. In A. Kalil and T. Deleire (Eds.), *Family investments*

in children's potential: Resources and parenting behaviors that promote success (pp. 119–137). Mahwah, NJ: Lawrence Erlbaum.

Hagerman, R. J., Rivera, S. M, & Hagerman, P. J. (2008). The fragile X family of disorders: A model for Autism and targeted treatments. *National Clinical Practices Neurology*, *4*, 40-52.

Hall, L., (2009). *Autism spectrum disorders. From theory to practice*. Upper Saddle River, NJ: Pearson Education.

Haney, M. R. (2002). Name writing: A window into the emergent literacy skills of young Children. *Early Childhood Education Journal*, *30*(2), 101-105.

Hardman, M. L., Drew, C. J., Egan, M. W., & Wolf, B. (2005). *Human exceptionalities: Society, school, and family* (8th ed.). Needham Heights, MA: Allyn & Bacon.

Hardre, P. L., Davis, K. A., Sullivan, D. W. (2008). Measuring teacher perceptions of the "how" and "why" of student motivation. *Educational Research and Evaluation, 14*(2), 155-179.

Harding, S. (2009). Successful inclusion models for students with disabilities require strong site leadership: Autism and behavioral disorders create many challenges for the learning environment. *The International Journal of Learning*, *16*(4), 90-104.

Harms, T., Clifford, R. M., & Cryer, D. (1998). *Early childhood environmental rating scale, revised edition*. New York: Teachers College Press.

Hatton, D. D., Wheeler, A. C., Skinner, M. L., Bailey, D. B., Sullivan, K. M., Roberts, J. E., Mirrett, P., & Clark, R.D. (2003). Adaptive behavior in children with fragile X syndrome. *American Journal on Mental Retardation*, *108*(6), 373-390.

Hay, I. (2007). Language delays, reading delays, and learning difficulties: Interactive elements requiring multidimensional programming. *Journal of Learning Disabilities, 40*(5), 400-409.

Hermelin, B., & O'Conner, N. (1990) Art and accuracy: the drawing ability of idiot-savants. *Journal of Child Psychology and Psychiatry*, *31*, 217–28.

Hess, L. (2006). I would like to play but I don't know how: A case study of pretend play in autism. *Child Language Teaching and Therapy*, *22*(1), 97-116.

Hess, K. L., Morrier, M.J., Heflin, L.J., & Ivey, M.L. (2008). Autism treatment survey: Services received by children with autism spectrum disorders in public school classrooms. *Journal of Autism and Other Developmental Disorders, 38*(5), 961-971.

Highnam, C., Raschke, D., & Kohler, F. (2008). Mental engagement of young children during story time: The effect of detachable images. Retrieved September 4, 2009 from http://www.speechpathology.com.

Holdaway, D. (1979). *The foundations of literacy*. Sydney: Ashton Scholastic.

Hood, M., Conlon, E., & Andrews, G. (2008). Preschool home literacy practices and children's literacy development: A longitudinal analysis. *Journal of Educational Psychology*, *100*, 252-271.

Howlin, P., & Asgharian, A. (1999). The diagnosis of autism and Asperger syndrome: Findings from a survey of 770 families. *Developmental Medicine and Child Neurology*, *41*(1), 834-839.

Hoyson, M., Jamieson, B., & Strain, P. S. (1984). Individualized group instruction of normally developing and autistic- like children: The LEAP curriculum model. *Journal of the Division for Early Childhood, 8*, 157-172.

Hundert, T., & van Delft, M. (2009). Teaching children with Autism spectrum disorders to answer inferential "why" questions. *Jounral of Autism Other Developmental Disabilities, 24*, 67-76.

Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. § 1400 et seq. (2004).

Ingersoll, C., & Dvortcsak, A. (2006). Including parent training in the early childhood special education curriculum for children with autism spectrum disorders. *Journal of Positive Behavior Interventions*, *8*(2), 79-87.

Jalongo, M. R., Dragich, D., Conrad, N. K., Zhang, A. (2002). Using wordless picture books to support emergent literacy. *Early Childhood Education Journal, 29*(3), 167-177.

Janzen, J. E. (1996). *Understanding the nature of autism: a practical guide.* San Antonio, TX: Therapy Skill Builders.

Justice, L. M., Skibbe, L., Canning, A., & Lankford, C. (2005). Preschoolers, print, and storybooks: An observational study using eye-gaze analysis. *Journal of Research in Reading*, *28*, 229-243.

Kaderavek, J. N., & Justice, L. M. (2002). Using shared storybook reading to promote emergent literacy. *Teaching Exceptional Children, 34*(4), 8-13.

Kaderavek, J. N., & Justice, L. M. (2004). Embedded-explicit emergent literacy intervention II: Goal selection and implementation in the early childhood classroom. *Language, Speech, and Hearing Services in Schools*, *35*(3), 212-228.

Kaderavak, J. N., Justice, L. M., Fan, X., Sofka, A. & Hunt, A. (2009). Accelerating preschoolers' early literacy development through classroom based teacher child

storybook reading and explicit print referencing. *Language, Speech, and Hearing Services in Schools*, *40*(1), 67-85.

Kamps, D. M. (2002). Peer training to facilitate social interaction for elementary students with autism & their peers. *Early Childhood Education Journal, 68*(2), 173-187.

Kanner, L. (1943). Autistic disturbance of affective contact. *Nervous Child*, *2*, 217-250.

Katims, D., Zapata, J., and Yin, Z. (1996). Risk factors for substance abuse by Mexican American youth with and without learning disabilities. *Journal of Learning Disabilities*, *29*, 213-219.

Kellogg, R. (1955). *What children scribble and why.* Palo Alto, CA: Mayfield Publications.

Kellogg, R. (1970). *Analyzing children's art.* Palo Alto, CA: Mayfield Publications.

Kenny, W. R. & Grotelueschen, A. D. (1980). Making a case for case study. Occasional paper, Office for the Study of Continuing Professional Education. Urbana-Campaign. College of Education, University of Illinois.

Kern, J. K., Van Miller, S, Evans, P. A., & Trivedi, M.H (2002). Efficacy of porcine secretin in children with autism and pervasive developmental disorder. *Journal of Autism and Other Developmental Disorders*, *32*, 153-160.

Kliewer, C., & Biklen, D. (2007). Enacting literacy: Local understanding, significant disability, and a new frame for educational opportunity. *Teachers College Record*, *109*(12), 2579-2600.

Kliewer, C., & Biklen, D. (2001). "School's not really a place for reading": A research synthesis of the literate lives of students with severe disabilities. *The Journal of the Association for Persons with Severe Handicaps*, *26*(1), 1-12.

Kluth, P., & Chandler-Olcott, K. (2008). *A land we can share: Teaching literacy to students with Autism.* Baltimore: Brookes.

Koegel, R. L., & Koegel, L. K. (1995). *Strategies for initiating positive interactions and improving learning opportunities*. Baltimore, MD: Brookes.

Koegel, R. L., Werner, G. A., Vismara, L. A., & Koegel, L. K. (2005). The effectiveness of contextually supported play date interactions between children with autism and typically developing peers. *Research and Practice for Persons with Severe Disabilities*, *30*(2), 93-102.

Kohler, F. (1999). Examining the services received by young children with autism and their families: A survey of parent responses. *Focus on Autism and Other Developmental Disabilities*, *14*, 150-158.

Koppenhaver, D. A., & Erickson, K. A. (2003). Natural emergent literacy supports for preschoolers with autism and severe communication impairments. *Topics in Language Disorders*, *23*(4), 283-292.

Lankshear, C., & Knobel, M. (2006). *New literacies* (2nd ed.). Maidenhead, UK: Open University Press.

Lanter, E., & Watson, L. R. (2008). Promoting literacy in students with ASD: The basics for the SLP. *Language, Speech and Hearing Services in Schools*, *39*(1), 33-43.

Laushey, K. M., & Heflin, L. J. (2000). Enhancing social skills of kindergarten children with autism through the training of multiple peers as tutors. *Journal of Autism and Other Developmental Disorders*, *30,* 183-193.

Leaf, R., & McEachin, J. (1999). *A work in progress*. New York: DRL Books, L.L.C.

Light, J. C., & Kent-Walsh, J. (2003). Fostering emergent literacy for children who require AAC. *The ASHA Leader, 8*(10), 28-29.

Lord, C., Shulman, C., & DiLavore, P. (2004). Regression and word loss in autistic spectrum disorders. *Association for Child Psychology and Psychiatry, 45*(5), 936-955.

Lord, C., & Rutter, M. (1994). Autism and pervasive developmental disorders. In M. Rutter, L. Hersov, & E. Taylor (Eds.), *Child and adolescent psychiatry: Modern approaches* (vol.3, pp. 569-593). Oxford, UK: Blackwell.

Lord, C., Rutter, M., Goode, S., Heemsbergen, J., Jordan, H., Mawhood, L., & Schopler, E. (1989). Autism diagnostic observation schedule: A standardized observation of communicative and social behavior. *Journal of Autism and Other Developmental Disorders, 19*, 185–212.

Lovaas, O. I. (1981). *Teaching developmentally disabled children: The me book.* Austin, TX: Pro-Ed.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology, 55*, 3-9.

Lovaas O.I., & Smith, T. (1989) A comprehensive behavioral theory of autistic children *Journal of Behavioral Therapy and Experimental Psychiatry, 20*, 17-29.

Luze, G.L., Linebarger, D. L., Greenwood, C. R., Carta, J. J., & Walker, D.(2001). Toward a technology for assessing communication expression. *School Psychology Review, 30*, 393-416.

Lynch, E., & Stein, R. (1982). Perspectives on parent participation in special education. *Exceptional Education Quarterly, 3*(2), 56-63.

Lysaker, J. T. (2006). Young children's readings of wordless picture books: What's 'self' got to do with it? *Journal of Early Childhood Literacy, 6*, 33-55.

Maione, L., & Mirenda, P. (2006). Effects of video modeling and video feedback on peer directed social language skills of a child with autism. *Journal of Positive Behavioral Interventions, 8*(2), 106-118.

Marvin, C. & Mirenda, P. (1993). Home literacy experiences of preschoolers enrolled in Head Start and special education programs. *Journal of Early Intervention, 17*, 351-367.

Maurice, C. (1998). *Behavioral intervention for young children with autism*. Austin, TX: Pro-Ed.

McConachie, H., & Diggle, T. (2007). Parent implemented early intervention for young children with autism spectrum disorder: A systematic review. *Journal of Evaluation Clinical Practices, 13*(1), 120-129.

McEachin, J. J., Smith, T., & Lovaas, O. I. (1993). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation,97*, 359–372.

McGovern, C. W., & Sigman, M. (2005). Continuity and change from early childhood to adolescence in autism. *Journal of Child Psychology and Psychiatry, 46*(4), 401-408.

Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Merriam, S. B. (2003). *Qualitative research in practice: Examples for discussion and analysis.* San Francisco, CA: Jossey-Bass.

Miles, B. (2006). Literacy for persons who are deaf-blind. *Language, Speech and Hearing Services in Schools, 39*(2), 15-19.

Mirenda, P. (2003). He's not really a reader…: Perspectives on supporting literacy development in individuals with autism. *Topics in Language Disorders, 23*(4), 271-282.

Morrison, A. P., Bentall, R. P., & French, P. (2002). A randomized controlled trial of early detection and cognitive therapy for preventing transitions to psychosis in high risk individuals: study design and interim analysis of transition rate and psychological risk factors. *British Journal of Psychiatry, 181*(43),78-84.

Mulick, J. A., & Butter, E. M. (2005). Positive behavior support: A paternalistic utopian delusion. In J. Jacobson, R.M. Foxx & J. Mulick (Eds.), *Controversial therapies for developmental disabilities: Fads, fashion and science in professional practice* (pp. 385-404). Mahwah, NJ: Lawrence Erlbaum Associates.

Myles, B. S., Trautman, M. L., & Schelvan, R. L. (2004). *The hidden curriculum: Practical solutions for understanding unstated rules in social situations*. Shawnee Mission, KS: Autism/Asperger Publishers.

National Reading Panel. (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, DC: National Institute of Child Health and Human Development, National Institutes of Health.

National Early Literacy Panel. (2004, November). *The National Early Literacy Panel: A research synthesis on early literacy development*. Paper presented at the National Association of Early Childhood Specialists, Anaheim, CA.

National Institute of Child Health and Human Development. (2000). Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Retrieved October 2, 2006, from http://www.nichd.nih.gov/publications/nrp/smallbook.htm.

National Research Council. (2001). *Educating children with autism*. Washington, DC: National Academies Press.

National Institute of Child Health and Human Development, Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development*, *69*(4), 1145-1170.

National Institute of Child Health and Human Development, Early Child Care Research Network. (2000). The relation of child care to cognitive and language development. *Child Development*, *71*(4), 960-980.

National Institute of Child Health and Human Development, Early Child Care Research Network. (2002). Early child care and children's development prior to school entry: Results from the NICHD study of early child care. *American Educational Research Journal*, *39*, 133-164.

National Institute of Child Health and Human Development (NICHD)

Early Child Care Research Network. (2005). Pathways to reading: The role of oral language in transition to reading. *Developmental Psychology, 41*(2), 428-442.

Neuman, S. B. (1996). Children engaging in storybook reading: The influence of access to print resources, opportunity, and parental interaction. *Early Childhood Research Quarterly, 11*(1), 495-513.

Neuman, S. B., & Roskos, K. A. (1993*). Language and literacy learning in the early years: An integrated approach*. Orlanda, FL: Harcourt Brace Jovanovich.

No Child Left Behind Act of 2001, Pub.L.No. 107-110, 115 Stat. *1425* (2002).

Nikopoulos, C. K., & Keenan, M. (2003). Promoting social initiation in children with autism using video modeling. *Behavioral interventions, 18*, 87-109.

Nutbrown, C. (1999). *Threads of thinking: Young children learning and the role of early education* (2nd ed.), London, UK: Paul Chapman Publishing.

Odom. S. L., Brown, W. H., Frey, T., Karasu, N., Smith–Cantor, L. L., & Strain, P. S. (2003). Evidence-based practices for young children with autism: Contributions for single-subject design research. *Focus on Autism and Other Developmental Disorders*, *18*, 166–175.

Oelwein, P. (1995). *Teaching reading to children with Down's syndrome: A guide for parents and teachers*. Bethesda, MD: Woodbine House.

Olley, J. G. (1999). Curriculum for students with autism. *School Psychology Review, 28,* 595–607.

Osborn, A. (2005). *Public school teacher attrition and organizational health: A comparative study*. Doctoral dissertation, The University of Texas, Austin.

Osborne, J. (2003). Art and the child with Autism: Therapy or education? *Early Development and Care, 173*(4), 411-423.

Osborne, J. & Lehr, F. (1998). *Literacy for all: Issues in teaching and learning*. New York: The Guilford Press.

Overby, M., Carrell, T., & Bernthal, J. (2007). Teachers perceptions of students with speech sound disorders: A quantitative and qualitative analysis. *Language, Speech, Hearing Services in School, 38*, 327-341.

Pahl, K. (1999) *Transformations: Children's Meaning Making in a Nursery*. New York: Trentham Books Ltd.

Pajares, M. F. (1997). Current directions in self-efficacy research. In M. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement*. London, UK: JAI Press.

Parasuraman, R., & Miller, C. (2006). Delegation interfaces for human supervision of multiple unmanned vehicles: Theory, experiments, and practical applications. In N. Cooke, H. L. Pringle, H. K. Pedersen, & O. Connor (Eds). *Human Factors of Remotely Operated Vehicles. Advances in Human Performance and Cognitive Engineering*. (pp. 251-266). Oxford, UK: Elsevier.

Parsons, S., & Mitchell, P. (2002). The potential of virtual reality in social skills training for people with autistic spectrum disorders. *Journal of Intellectual Disability Research, 46*, 430–443.

Partington, J. W., & Sundberg, M. L. (1998). *The assessment of basic language and learning skills.* Pleasant Hill, CA: Behavior Analysts, Inc.

Perry, J. D., Guidubaldi, J., & Kehle, T. J. (1979). Kindergarten competencies as predictors of third-grade classroom behavior and achievement. *Journal of Educational Psychology, 71*(4), 443-450.

Petrill, S. A., Deater-Deckard, K., Schatschneider, C., & Davis, C. (2005). Measured environmental influences on early reading: Evidence from an adoption study. *Scientific Studies of Reading, 9*, 237-259.

Piaget, J.P. (1962). *Play, dreams, and imitation in childhood.* New York: Norton.

Piro, J. M. (2002). The picture of reading: Deriving meaning in literacy through image. *The Reading Teacher*, *56*(2), 126-134.

Plomin, R. & Dale, P. (2000) "Genetics and early language development: A UK study of twins". In D. Bishop & L. Leonard (Eds.) *Speech and language impairments in children: Causes, characteristics, intervention and outcome*. Philadelphia, PA: Psychology Press.

Pollo, T. C., Treiman, R., & Kessler, B. (2008). Preschoolers use partial letter names to select spellings: Evidence from Portuguese. *Applied Psycholinguistics, 29*, 1-18.

Pressley, M., Allington, R., Wharton-Mcdonald, R., Block, C. C., & Morrow, L. M. (2001). *Learning to read: Lessons from exemplary first grades.* New York: Guilford.

Rasinski, T, V., Padak, N. D., & Church, B.W. (2000). Teaching word recognition, spelling, and vocabulary. *Strategies from The Reading Teacher*. Newark, DE: International Reading Association.

Rao, S. M., & Gagie, B. (2001). Learning through seeing and doing: Visual supports for children with autism. *Teaching Exceptional Children*, *38*(6), 26-33.

Rimland, B., & Edelson, S. (1995). Brief report: A pilot study of auditory integration

training in autism and developmental disabilities. *Journal of Autism and Other Developmental Disorders, 25*, 61-70.

Roberts, D. F., Foehr, U.G., & Rideout, T. (2005). *Generation M: Media in the lives of 8-18 year olds.* Menlo Park, CA: Kaiser Family Foundation.

Roberts, J., Martin, G. E., Moskowitz, L., Harris, A. A., Foreman, J., & Nelson, L. (2007). Discourse skills of boys with fragile X syndrome in comparison to boys with Down syndrome. *Journal of Speech Language and Hearing Research, 50*(2), 475-492.

Roberts, J., Jurgens, J., & Burchinal, M. (2005). The role of home literacy practices in preschool children's language and emergent literacy skills. *Journal of Speech, Language, and Hearing Research, 48*(2), 345-359.

Robertson, K., Chamberlain, B., & Kasari, C. (2003). General education teachers' relationships with included students with autism. *Journal of Autism and Other Developmental Disorders, 33*(2), 123-129.

Rosenberg, N., & Schwartz, I. S. (2003). Autism spectrum disorders: A primer for early childhood educators. *Children and Families, 17*(4), 21-26.

Roskos, K., Christie, J., & Richgels, D. (2003). The essentials of early literacy instruction. Retrieved September 9, 2009, from the National Association for the Education of Young Children http://www.journal.naeyc.org/btj/200303/Essentials.pdf.

Ruble, L. A., & Dalrymple, N. J. (2002). Compass: A parent-teacher collaborative model for students with autism. *Focus on Autism and other Developmental Disabilities, 17*(2), 73-76.

Rutter, M., Bailey, A., & Lord, C. (2003). *Social Communication Questionnaire (SCQ).* Los Angeles: Western Psychological Services.

Samms-Vaughan, M. (2004). *The Jamaica pre-school child: The status of early childhood development in Jamaica.* Kingston, Jamaica: The Planning Institute of Jamaica.

Samms-Vaughan, M., & Franklyn-Banton, L. (2008). The role of early childhood professionals in the early identification of autistic disorder. *International Journal of Early Years Education, 16*(1), 75-84.

Sansoti, F. J., Powell-Smith, K. A. & Kincaid, D. (2004). A research synthesis of social story interventions for children with autism spectrum disorders. *Focus on Autism & Other Developmental Disabilities, 19*, 194-205.

Saracho, O., & Spodek, B. (2006). Young children's literacy related play. *Early Childhood Development and Care, 176*(7), 707-721.

Schappe, J. F. (2005). Early childhood assessment: A correlational study of the relationships among student performance, student feelings and teacher perceptions. *Early Childhood Education Journal, 33*(3), 187-193.

Scheuermann, B., Webber, J., Boutot, E. A., & Goodwin, M. (2003). Problems with personnel preparation in autism spectrum disorders. *Focus on Autism and Other Developmental Disorders, 18, 197–*206.

Schopler, E., Reichler, R. J. & Renner, B. R. (1986). *The Childhood Autism Rating Scale (CARS) for diagnostic screening and classification of autism*. Irvington, NY: Irvington.

Schopler, E., & Mesibov, G. (1983). *Autism in adolescents and adults*. New York: Plenum Press.

Selfe, L. (1977). *Nadia: A case of extraordinary drawing ability in an autistic child*. London: Academic Press.

Seidman, I. (1998). *Interviewing as qualitative research.* New York: Teachers College Press.

Shaw, P., Lerch, J., Greenstein, D., Sharp, W., Clasen, L., Evans, A., Giedd, J., Castellanos, F.X., & Rapoport, J. (2008). Longitudinal mapping of cortical thickness and clinical outcome in children and adolescents with attention-deficit/hyperactivity disorder. *Archives General Psychiatry, 63*(5), 540-549.

Shea, B., & Mesibov, G. (2009). Age –related issues in the assessment of autism spectrum disorders. In S. Goldstein, J. A. Naglieri, & S. Ozonoff (Eds.), *Assessment of autism spectrum disorder* (pp. 117-137). New York: Guilford Press.

Simpson, R. L., De Boer-Ott, S. R. & Smith-Myles, B. (2003). Inclusion of learners with autism spectrum disorders in general education settings. *Topics in Language Disorders, 23*(2), 116-134.

Skibbe, L. E., Justice, L. M., Zucker, T.A., & McGinty, A. (2008). Relations among maternal literacy beliefs, home literacy practices, and the emergent literacy skills of preschoolers with specific language impairment. *Early Education and Development, 19*(1), 68-88.

Smith, C. B. (1989). Emergent literacy: An environmental concept. *Reading Teacher 42*, 528.

Smutny, J. (2003). Differentiated instruction. *Phi Delta Kappa, 506*(7), 47-54.

Snow, C. E. (1983). Literacy on language: Relationships during preschool years. *Harvard Education Review, 53*(2) 165-189.

Snowling, M., & Stackhouse, J. (1996). Epilogue: Current themes and future directions. In M. Snowling & J. Stackhouse (Eds.), *Dyslexia, speech and language: A practioner's guide,* (pp.224-242). London: Whurr.

Stacey, P.(2003). Floor Time. *Atlantic Monthly*, *291*(1), 127-134.

Stagnitti, K., Raison, P., & Ryan, P. (1999). Sensory defensiveness syndrome: A pediatric perspective and case study. *Australian Occupational Therapy Journal, 46,* 175-187.

Strain, P. S., & Cordisco, L. (1994). LEAP preschool. In J. S. Handleman and S. L. Harris (Eds.), Preschool *education programs for children with autism* (2nd ed., pp 225-244.) Austin, TX: Pro-Ed.

Strain, P. S., Kohler, F. W., & Goldstein, H. (1996). Learning experiences An alternative program: Peer mediated interventions for young children with autism. In E. Hibbs & P. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically based strategies for clinical practice* (pp. 573-586). Washington, DC: American Psychiatric Association.

Strain, P. S., Shores, R. E., & Timm, M. A. (1977). Effects of peer initiations on the social behavior of withdrawn preschoolers. *Journal of Applied Behavioral Analysis*, *10*, 289-298.

Stahmer, A. C., Leslie, L. K., Hurlburt, M., Barth, R. P., Webb, M. B., & Landsverk, J. (2005). Developmental and behavioral needs and service use for young children in child welfare. *Pediatrics, 116,* 891–900.

Stanley, G., & Pershin, P. (1978). Rating preschool development of name writing and draw-a-person. *Perceptual and Motor Skills*, *47*, 187-190.

Stipek, D., Feiler, R., Daniels, D., & Milburn, S. (1995). Effects of different instructional

approaches on young children's achievement and motivation. *Child Development, 58,* 1079-1093.

Stoner, J. B., Jones-Bock, S., Tompson, J. R., Angell, M. E., Heyl, B. S., & Crowley, E. P. (2005). Welcome to our world: Parent perceptions of interactions between parents of young children with ASD and education professionals. *Focus on Autism and Other Developmental Disabilities*, *20*(1), 39-51.

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, *38*(6), 934–947.

Sulzby, E., Barnhart, J., & Hieshima, J. A. (1988). *Forms of writing and rereading from writing: A preliminary report*. Washington, DC: Office of Educational Research And Improvement.

Swann, J. (2009). *Doing gender against the odds: a sociolinguistic analysis of educational discourse.* Washington, DC: Palgrave Macmillam

Swann, J. (2009). *Stories in performance*. Washington, DC: Palgrave Macmillan.

Tait, K. & Purdie, N. (2000). Attitudes toward disability: Teacher education for inclusive environments. *International Journal of Disability, Development and Education*, *47*(1), 25-38.

Teale, W. H., & Sulzby, E. (1986). Emergent literacy as a perspective for examining how young children become writers and readers. In W. H. Teale & E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp.vii-xxv). Norwood, NJ: Ablex.

Thiemann, K. S., & Goldstein, H. (2004). Effects of peer training and written text cueing on social communication of school-age children with pervasive

developmental disorder. *Journal School Leadership, 47,* 126-144.

Topal, C. (2008). *Explorations in art, kindergarten program.* Worcester, MA: Davis Publications.

Trelease, J. (1982). *The read-aloud handbook.* New York: Penguin.

Uffen, E. (2001). Temple Grandin shares her personal insights on autism. *ASHA Leader, 6*(10), 1-2.

Vacca, J. J. (2007). Incorporating interests and structure to improve participation of a child with autism in a standardized assessment: A case study analysis. *Focus on Autism and Other Developmental Disabilities, 22*(1), 51-59.

Vaughn, S. & Fuchs, L. S. (2003). Redefining learning disabilities as inadequate response to instruction: The promise and potential problems. *Learning Disabilities Policy and Practice, 18*(3), 137-147.

Volkmar, F. R., & Wiesner, L. A. (2009). *A practical guide to Autism: What every parent, family member, and teacher needs to know*. Hoboken, NJ: John Wiley & Sons.

Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wade, S. E. (2000*). Inclusive education: A casebook and readings for prospective and practicing teachers*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ward, J., Center, Y. & Bochner, S. (1994). A question of attitudes: Integrating children with disabilities into regular classrooms? *British Journal of Special Education, 21*, 34-39.

Watson, A. R. (2001). Literacy and oral language: Implications for literacy acquisition. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of Early Literacy Research,* (pp. 43-53). New York: Guilford.

Weber, J. D. (2000). *Children with fragile X syndrome: A parents' guide*. Bethesda, MD: Woodbine House.

Whelan, D. L. (2009). The equal opportunity disorder. *School Library Journal, 15*(8), 30-34.

Whitehouse, A. J., Mayberry, M. T., & Durkin, K. (2006). Inner speech impairments in autism. *Journal of Child Psychology and Psychiatry*, *47*(8), 857-865.

Whitehurst, G. J. (1994). A picture book reading intervention in daycare and home for children from low income families. *Developmental Psychology, 30*(5), 679-689.

Whitehurst, G. J., Lonigan, C. (1998). Child development and emergent literacy. *Child Development, 68*, 848-872.

Wiederhold, C. & Kagan, S. (1992). Cooperative Questioning and Critical Thinking. In Davidson, N. & Worsham, T. (Eds.) *Enhancing thinking through cooperative learning.* New York: Teachers College Press.

Wing, L. (1996). Autism Spectrum Disorders. *British Medical Journal, 312*, 327-328.

Wing, L. (1997). Syndromes of Autism and atypical development. In F. Volkmar (Ed.) *Handbook of Autism and pervasive developmental disorders*,(2nd ed.), Hoboken, NJ: John Wiley and Sons.

Wing, L., & Potter, D. (2002). The epidemiology of autistic spectrum disorders: Is the prevalence rising? *Mental Retardation and Development Disabilities Research Review 8*(3), 151-61.

Wisenman, N. D. (2006). *Could it be autism? A parent's guide to the first signs and next steps.* New York: Broadway Books.

World Health Organization. (1992). *ICD-10 Classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines*. Geneva, World Health Organization.

World Health Organization (2006). Pervasive developmental disorders. *International Statistical Classification of Diseases and Related Health Problems (10th ed.; ICD 10).* Retrieved September 1, 2009 from http://www.who.int/classifications/apps/icd/icd10online/?gf80.htm+f840

Yang, H. C., & Noel, A. M. (2009). The developmental characteristics of four and five year old preschoolers' drawing. An analysis of scribbles, placement patterns, emergent writing, and name writing in archived spontaneous drawing samples. *Journal of Early Childhood Literacy, 6*(2), 145-622.

Ysseldyke, J. E., Thurlow, M. L., Langenfeld, K., Nelson, J. R., Teelucksingh, E., & Seyfarth, A. (1998). Educational results for students with disabilities: What does the data tell us? (Technical Report 23). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes

Young, J. (2009). Enhancing emergent literacy potential for young children. *Australian Journal of Language and Literacy, 32*(2), 163-180.

Zane, T., Davis, C., & Rosswurm, M. (2009). Behavioral Interventions. *Journal of Early and Intensive Behavior Intervention*, *5*(2), 44-56.

Zascavage, V. T., & Keefe, C. H. (2004). Students with severe speech and physical Impairments: Opportunity barriers to literacy. *Focus on Autism and Other Developmental Disabilities*, *19*(4), 223-234.

Zimmerman, B., & Cleary, T. (2006). Adolescents' development of personal agency: The role of self-efficacy beliefs and self-regulatory skill. In F. Pajares & T. Urdan (Eds.). *Self-efficacy beliefs of adolescents* (pp. 45-69). Greenwich, CT: Information Age Publishing.

APPENDICES

APPENDIX A
In-Depth Interview Questions for Teachers

General Teaching Background

a) What are your childhood memories of learning to read?
b) What events in your life inspired you to be an educator?
c) At what age did you make the decision to be an educator?
d) How have you changed since your first year of teaching?
e) What do you feel are the two most important characteristics of a good teacher?
f) What does it mean to you to be a teacher of young children?
g) What age group did you initially intend on teaching, what age group do you teach now?

Beliefs about Literacy and Autism

a) How do you define early literacy?
b) What types of activities do you provide to foster growth in your students?
c) What adaptations do you make when teaching a child who has limited verbal abilities, is severely disruptive and has attention difficulties?
d) What characteristics have you observed in children with autism?
e) If you had had to pick a word that describes autism, what would it be? Why?
f) What feelings did you have when you first found out that a child with autism would be assigned to your class?
g) How did you prepare to teach a child with autism, how long was the preparation?
h) What professional development training have you taken regarding autism?
i) What literacy skills do you believe a child with autism can acquire?
j) Can you describe a situation where you felt you were successful in teaching a child with autism a literacy skill? Can you describe a situation where you were unsuccessful?
k) What changes in your teaching have you made to accommodate your students with autism?
l) What have you learned from children with autism?

Expectations, Aspirations and Professional Interactions

a) In general, what aspirations do you have for your students with autism?
b) What recommendations do you have for novice teachers who are initially being exposed to children with autism?
c) What teaching strategies have been most successful for children with autism in your classroom?
d) What information do you provide to the next teacher who will work with a child with autism from your class?
e) At the end of the academic year, what literacy skills do you expect and hope most of your students with autism have acquired?
f) If you think to the future, what do you envision your students with autism doing when they are twenty-five?

APPENDIX B

School District Director Request for Consent

Dear Director:

Early reading skills provide the basis of academic success across the curriculum; every subject area depends on reading to some extent. Children with autism generally tend to struggle with acquiring literacy due to their limited communication skills. Therefore, I am interested in investigating kindergarten teachers who have found success in teaching children with autism literacy skills. Please accept this letter as my written request for your permission to involve teachers from your district in data collection for my dissertation research. The purpose of this qualitative study is to examine kindergarten teachers' beliefs about literacy acquisition in young children with autism, identify pedagogical strategies that kindergarten teachers utilize to foster literacy skills in children with autism and, examine documentation of student work by kindergarten teachers that fosters literacy growth in children with autism. A one-page overview of the study is enclosed.

Initial in-depth interviews will be conducted with teachers who are interacting with children with autism in some capacity. The interviews will assess the efficacy of the teacher in relation to their beliefs about children with autism. Once the in-depth interview has been completed, observations will take place to watch the interactions of both teacher and student in the classroom. Observations are being done to track adaptations for the children, pedagogical strategies, and teacher/student relations. In addition to observations, it is hoped that artifacts can be collected that demonstrate literacy acquisition or a relationship to literacy instruction.

If granted permission, I will need a letter authorizing me to conduct research with teachers from your school. Teachers will be made aware that participation in this study is strictly voluntary and that participation or non-participation will not affect their relationship with the investigator at IUP or their employer. They will also be informed that findings will be reported as aggregate data and confidentiality will be maintained. A copy of the letter of consent for cooperating teachers is attached for your review.

If you have any questions or require additional information, please feel free to contact me at my home (814)952-1369 or at the office (724)463-5390 or via email at dmonroe@salisb.com. Your time and cooperation are highly valuable and deeply appreciated.

Sincerely,

Dana M. Monroe

Principal Investigator

Department of Professional Studies
Indiana University of Pennsylvania
9 N 7th Street suite 202
Indiana, PA 15767
(724) 463-5390

Dr. Mary Renck Jalongo

Faculty Sponsor

Department of Professional Studies
Indiana University of Pennsylvania
122 Davis Hall
Indiana, PA 15705
(724) 357-2400/2417

APPENDIX C

Teacher Informed Consent Form

Dear Elementary Educator:

You are invited to participate in a research study that examines teachers' beliefs and practices regarding the acquisition of literacy of children with autism. The purpose of this study is to describe the beliefs and practices of teachers regarding literacy acquisition of children with autism. It is hoped that this study will describe the philosophical stance, pedagogical strategies and documentation of student work that is used by public school teachers to foster literacy growth in children with autism.

The following information is provided in order to help you make an informed decision whether or not to participate. If you have questions, please do not hesitate to ask. You are eligible to participate because you are an elementary education teacher interacting with children with autism in some capacity. The Indiana University of Pennsylvania supports the practice of protection for human subjects participating in research. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (724-357-2223). There are no known risks or discomforts associated with this research. Your participation in this study is strictly voluntary. You are free to withdraw at any time by contacting me at (814) 952-1369 or via email dmonroe@salisb.com. Your decision will not result in loss of benefits to which you are otherwise entitled. Participation or non-participation in this study will not affect you relationship with the investigator at IUP or your employer.

Participation in this study will require approximately a one-hour interview and then several follow-up observations of your interactions with the children in your classroom or any IEP meetings that you are involved in for a period of three months. In addition, the study does require collection of artifacts produced by children with autism, for example, any work in a portfolio, drawings or writings. The observations will be set up at your convenience and according to a schedule that you feel comfortable with. The researcher will not be actively participating in any observations or meetings in order to not add distraction to your environments. Your name will never be divulged nor associated with findings in any way. All information obtained will be kept confidential and pseudonyms will be used for all participants. The information obtained in this study may be published in academic journals or presented at conferences, but your identity will be kept strictly confidential.

If you are willing to participate, please sign the attached consent form. If you have chosen to participate in this study you will receive a phone call in order to begin setting up the observations, please include all contact information on your consent form.

A summary of the findings from this study will be made available to you upon request. If you have any questions or require additional information, please feel free to contact me at my home (814) 952-1369 or at the office (724) 463-5390 or via email at dmonroe@salisb.com. Your time and cooperation are highly valuable and deeply appreciated. Thank you for making this commitment.

Sincerely,

Dana M. Monroe

Principal Investigator

Department of Professional Studies
Indiana University of Pennsylvania
9 N 7th Street, suite 202
Indiana, PA 15767
(724) 463-5390

Dr. Mary Renck Jalongo

Faculty Sponsor

Department of Professional Studies
Indiana University of Pennsylvania
122 Davis Hall
Indiana, PA 15705
(724) 357-2400/2417

Consent Form

Teacher

By signing this consent form, I agree to participate in the study titled "Literacy and Autism: Case Studies of Two Kindergarten Children, Their Teachers and Their Parents". I acknowledge that I have been fully informed of the study and the expectations involved. All aspects of this study have been explained to me including the confidentiality of my participation and my ability to withdraw from the study at any time. I have read the protocol and understand it. My signature also indicates that I will participate in the implementation of this study through three methods of data collection: in-depth interview which will include audio taping, observations and collection of artifacts. I am aware that if I have further questions I can contact the principal investigator as well as the faculty sponsor and I received all contact information in order to do so. I understand that there are no known risks to my participation in this study. I am participating in this study voluntarily and understand my rights.

_____ _____

Signature Date

Contact Information

Name:_____

Address:_____

City/State/Zip:_____

Phone Number Work:_____
Home:_____
Other:_____

Fax:_____

School District:_____

Title/Grades Teach:____ _____

APPENDIX D

Parent Consent Form

Dear Parent,

Early reading skills provide the basis of academic success across the curriculum; every subject area depends on reading to some extent. Children with autism generally tend to struggle with acquiring literacy due to their difficulty with communication and language skills. Therefore, I am interested in investigating kindergarten teachers who have found success in teaching children with autism literacy skills. The purpose of this study is to examine kindergarten teachers' beliefs about literacy acquisition in young children with autism, identify teaching strategies that kindergarten teachers utilize to increase literacy skills in children with autism and, examine student work by kindergarten children that helps to advance literacy growth in children with autism. A one-page overview of the study is enclosed.

I am a doctoral student at Indiana University seeking to utilize your child's work in my dissertation. The purpose of this study is to describe the beliefs and practices of teachers regarding literacy acquisition of children with autism. This study seeks to determine if teachers' feelings regarding children with autism influence how they acquire and demonstrate literacy. It is hoped that this study will describe the philosophical stance, pedagogical strategies and documentation of student work that is used by public school teachers to foster literacy growth in children with autism. I wish to include some of your child's drawings and writings in my study that are completed during routine classroom activities.

The following information is provided in order to help you make an informed decision whether or not to participate. If you have questions, please do not hesitate to contact me at (814) 952-1369 or (724) 463-5390. The Indiana University of Pennsylvania supports the practice of protection for human subjects participating in research. This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (724-357-2223). There are no known risks associated with this research. Your participation in this study is strictly voluntary. You are free to withdraw your child at any time by contacting me. Your decision will not result in loss of benefits to which you are otherwise entitled. Participation or non-participation in this study will not affect you relationship with the investigator at IUP or the school in which your child attends. Participation in this study will include only the use of your child's' drawings and writings in relation to literacy. Your child's name will never be divulged nor associated with findings in any way. All information obtained will be kept confidential and given pseudonyms. The information obtained in this study may be published in academic journals or presented at conferences, but your child's identity will be kept strictly confidential.

Please sign the attached consent form and return indicating that you are willing to allow your child's work to be included in this study. Please complete and return in the enclosed stamped envelope provided by November, 12, 2005

A summary of the findings from this study will be made available to you upon request. If you have any questions or require additional information, please feel free to contact me at my home (814) 952-1369 or at the office (724) 463-5390 or via email at dmonroe@salisb.com. Your time and cooperation are highly valuable and deeply appreciated.

Sincerely,

Dana M. Monroe

Principal Investigator

Department of Professional Studies
Indiana University of Pennsylvania
9 N 7th Street, suite 202
Indiana, PA 15701
(724) 463-5390

Dr. Mary Renck Jalongo

Faculty Sponsor

Department of Professional Studies
Indiana University of Pennsylvania
122 Davis Hall
Indiana, PA 15705
(724) 357-2400/2417

Consent Form

Parent or Guardian

By signing this consent form, I agree to allow my child to participate in the study titled, "Literacy and Autism: Case Studies of Two Kindergarten Children, Their Teachers and Their Parents." I acknowledge that I have been fully informed of the study and the expectations involved. All aspects of this study have been explained to me including the confidentiality of my participation and my ability to withdraw from the study at any time. I have read the protocol and understand it. My signature also indicates that my child will participate in the implementation of this study through two methods of data collection: observations and collection of artifacts. I am aware that if I have further questions I can contact the principal investigator as well as the faculty sponsor and I received all contact information in order to do so. I understand that there are no known risks to my child's participation in this study. My child is participating in this study voluntarily and I understand my rights.

_____ _____

Signature Date

Contact Information

Name:_____

Address:_____

City/State/Zip:_____

Phone Number Work:_____
Home:_____
Other:_____

Fax:_____

School District:_____

Title/Grades Teach: _____

APPENDIX E

Interview Questions for Parents

General Background

a) What are your childhood memories of learning to read?
b) What memories do you have of your child learning to read?
c) At what age did your child first respond to a book or acknowledge a book?
d) How has your child shown you that they enjoy books?
e) What type of activities did your child first participate in that indicated they were reading?

Beliefs about Literacy and Autism

a) How do you define literacy?
b) What types of activities do you and your family does to enhance literacy skills in your children?
c) What adaptations do you make when reading with your child? What best suits his/her needs?
d) If you had to pick a single word or phrase that describes autism, what would it be and why?
e) What techniques have you used to work with your child on their homework?
f) By what means did you discover these techniques? Books, child, teacher?
g) Have you had any advanced training for working with children like yours? If so, what were they?
h) What literacy skills do you believe your child has?
i) Can you describe a situation where you felt you were successful in reaching your child with a book or a magazine? Can you describe a situation where you were unsuccessful?
j) What changes have you made in your lifestyle to help your child learn?
k) What have you learned from your child and their disability?
l) What accommodations would you suggest your child's teacher could try in the classroom?
m) What resources would you recommend that are pertinent to your child?

Expectations, Aspirations, and Interactions

a) In general, what aspirations do you have for your child?
b) What recommendations do you have for a novice teacher who is initially being exposed to children with autism?
c) What information do you provide to the new classroom teacher when your child changes grades?
d) If you think to the future, what do you envision your child doing when they are twenty-five?
e) What are your proudest memories/experiences of your child?

SCORE SHEET
Early Childhood Environment Rating Scale–Revised

Thelma Harms, Richard M. Clifford, and Debby Cryer

Observer: _____ Observer Code: __ __ __
Center/School: _____ Center Code: __ __ __
Room: _____ Room Code: __ __
Teacher(s) _____ Teacher Code: __ __
Number of staff present: __ __
Number of children enrolled in class: __ __
Number of children present: __ __

Date of observation: __ __ / __ __ / __ __ (m m d d y y)
Number of children with identified disabilities: __ __
Check type(s) of disability: ☐ physical/sensory ☐ cognitive/language ☐ social/emotional ☐ other: _____
Birthdates of children enrolled: youngest __ __ / __ __ / __ __ oldest __ __ / __ __ / __ __ (m m d d y y)
Time observation began: __ __ : __ __ ☐AM ☐ PM
Time observation ended: __ __ : __ __ ☐AM ☐ PM

SPACE AND FURNISHINGS

1. Indoor space — 1 2 3 4 5 6 7 — Notes

Y	N		Y	N	NA	Y	N		Y	N	
1.1 ☐	☐		3.1 ☐	☐	☐	5.1 ☐	☐		7.1 ☐	☐	
1.2 ☐	☐		3.2 ☐	☐	☐	5.2 ☐	☐		7.2 ☐	☐	
1.3 ☐	☐		3.3 ☐	☐	☐	5.3 ☐	☐				
1.4 ☐	☐		3.4 ☐	☐	☐						
			3.5 ☐	☐	☐						

2. Furniture for care, play, & learning — 1 2 3 4 5 6 7

Y	N		Y	N	NA	Y	N	NA	Y	N	
1.1 ☐	☐		3.1 ☐	☐	☐	5.1 ☐	☐	☐	7.1 ☐	☐	
1.2 ☐	☐		3.2 ☐	☐	☐	5.2 ☐	☐	☐	7.2 ☐	☐	
			3.3 ☐	☐	☐	5.3 ☐	☐	☐			

3. Furnishings for relaxation — 1 2 3 4 5 6 7

Y	N		Y	N		Y	N		Y	N	
1.1 ☐	☐		3.1 ☐	☐		5.1 ☐	☐		7.1 ☐	☐	
1.2 ☐	☐		3.2 ☐	☐		5.2 ☐	☐		7.2 ☐	☐	
						5.3 ☐	☐				

4. Room arrangement — 1 2 3 4 5 6 7 — Notes

Y	N		Y	N	NA	Y	N		Y	N	
1.1 ☐	☐		3.1 ☐	☐	☐	5.1 ☐	☐		7.1 ☐	☐	
1.2 ☐	☐		3.2 ☐	☐	☐	5.2 ☐	☐		7.2 ☐	☐	
			3.3 ☐	☐	☐	5.3 ☐	☐		7.3 ☐	☐	
			3.4 ☐	☐	☐						

5. Space for privacy — 1 2 3 4 5 6 7

Y	N		Y	N		Y	N		Y	N	
1.1 ☐	☐		3.1 ☐	☐		5.1 ☐	☐		7.1 ☐	☐	
			3.2 ☐	☐		5.2 ☐	☐		7.2 ☐	☐	

6. Child-related display — 1 2 3 4 5 6 7

Y	N		Y	N		Y	N		Y	N	
1.1 ☐	☐		3.1 ☐	☐		5.1 ☐	☐		7.1 ☐	☐	
1.2 ☐	☐		3.2 ☐	☐		5.2 ☐	☐		7.2 ☐	☐	
						5.3 ☐	☐				

7. Space for gross motor 1 2 3 4 5 6 7 Notes

1.1 Y N	3.1 Y N	5.1 Y N	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
		5.3 Y N	7.3 Y N

8. Gross motor equipment 1 2 3 4 5 6 7

1.1 Y N	3.1 Y N	5.1 Y N NA	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N	5.3 Y N	

A. Subscale (Items 1–8) Score ___

B. Number of items scored: ___

SPACE & FURNISHINGS Average Score (A ÷ B) ___.___

PERSONAL CARE ROUTINES

9. Greeting/departing 1 2 3 4 5 6 7 Notes

1.1 Y N	3.1 Y N	5.1 Y N NA	7.1 Y N NA
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N	5.3 Y N	7.3 Y N

10. Meals/snacks 1 2 3 4 5 6 7

1.1 Y N NA	3.1 Y N NA	5.1 Y N NA	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N	5.3 Y N	7.3 Y N
1.4 Y N	3.4 Y N	5.4 Y N	
1.5 Y N	3.5 Y N		
	3.6 Y N		

11. Nap/rest 1 2 3 4 5 6 7 NA Notes

1.1 Y N	3.1 Y N	5.1 Y N	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N	5.3 Y N	
	3.4 Y N		

12. Toileting/diapering 1 2 3 4 5 6 7

1.1 Y N	3.1 Y N	5.1 Y N	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N	5.3 Y N	
1.4 Y N	3.4 Y N		
	3.5 Y N		

13. Health practices 1 2 3 4 5 6 7

1.1 Y N	3.1 Y N	5.1 Y N	7.1 Y N NA
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N NA
	3.3 Y N	5.3 Y N	
	3.4 Y N		

14. Safety practices 1 2 3 4 5 6 7

1.1 Y N	3.1 Y N	5.1 Y N	7.1 Y N
1.2 Y N	3.2 Y N	5.2 Y N	7.2 Y N
1.3 Y N	3.3 Y N		

A. Subscale (Items 9–14) Score ___

B. Number of items scored: ___

PERSONAL CARE ROUTINES Average Score (A ÷ B) ___.___

LANGUAGE-REASONING

Books & pictures

1 2 3 4 5 6 7

Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	
		5.4 ☐ ☐	
		5.5 ☐ ☐	

Encouraging children to communicate

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐		

Using language to develop reasoning skills

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐

Informal use of language

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐		5.3 ☐ ☐	
		5.4 ☐ ☐	

Subscale (Items 15–18) Score ___ ___

Number of items scored: ___ ___

LANGUAGE-REASONING Average Score (A ÷ B) ___.___ ___

ACTIVITIES

19. Fine motor

1 2 3 4 5 6 7

Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	

20. Art

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N NA
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
			7.3 ☐ ☐ ☐

21. Music/movement

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐		7.3 ☐ ☐

22. Blocks

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐
		5.4 ☐ ☐	

23. Sand/water

1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	

24. Dramatic play 1 2 3 4 5 6 7 Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐
		5.4 ☐ ☐	7.4 ☐ ☐

25. Nature/science 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	
		5.4 ☐ ☐	

26. Math/number 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	
		5.4 ☐ ☐	

27. Use of TV, video, and/or computers 1 2 3 4 5 6 7 NA

Y N	Y N	Y N NA	Y N NA
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	
		5.4 ☐ ☐	

28. Promoting acceptance of diversity 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐		

A. Subscale (Items 19–28) Score ___ ___

B. Number of items scored: ___ ___

ACTIVITIES Average Score (A ÷ B) ___.___ ___

INTERACTION

29. Supervision of gross motor activities 1 2 3 4 5 6 7 Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	7.3 ☐ ☐

30. General supervision of children 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	
		5.4 ☐ ☐	

31. Discipline 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐

32. Staff-child interactions 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐		5.3 ☐ ☐	

33. Interactions among children 1 2 3 4 5 6 7 — Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐		

A. Subscale (Items 29–33) Score ___ ___

B. Number of items scored: ___ ___

INTERACTION Average Score (A ÷ B) ___.___ ___

37. Provisions for children with disabilities 1 2 3 4 5 6 7 NA — Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐
1.4 ☐ ☐	3.4 ☐ ☐		

A. Subscale (Items 34–37) Score ___ ___

B. Number of items scored: ___ ___

PROGRAM STRUCTURE Average Score (A ÷ B) ___.___ ___

PROGRAM STRUCTURE

34. Schedule 1 2 3 4 5 6 7 — Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	
	3.4 ☐ ☐	5.4 ☐ ☐	

35. Free play 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	

36. Group time 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	7.3 ☐ ☐

PARENTS AND STAFF

38. Provisions for parents 1 2 3 4 5 6 7 — Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐
	3.4 ☐ ☐	5.4 ☐ ☐	

39. Provisions for personal needs of staff 1 2 3 4 5 6 7

Y N	Y N NA	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐
	3.4 ☐ ☐	5.4 ☐ ☐	
	3.5 ☐ ☐ ☐		

40. Provisions for professional needs of staff 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐	5.3 ☐ ☐	

41. Staff interaction and cooperation 1 2 3 4 5 6 7 NA | Notes

Y N	Y N	Y N	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
1.3 ☐ ☐	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐

42. Supervision and evaluation of staff 1 2 3 4 5 6 7 NA

Y N	Y N	Y N NA	Y N
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
		5.3 ☐ ☐	7.3 ☐ ☐
		5.4 ☐ ☐ ☐	

43. Opportunities for professional growth 1 2 3 4 5 6 7

Y N	Y N	Y N	Y N NA
1.1 ☐ ☐	3.1 ☐ ☐	5.1 ☐ ☐	7.1 ☐ ☐
1.2 ☐ ☐	3.2 ☐ ☐	5.2 ☐ ☐	7.2 ☐ ☐
	3.3 ☐ ☐	5.3 ☐ ☐	7.3 ☐ ☐ ☐
		5.4 ☐ ☐	

A. Subscale (Items 38–43) Score ___ ___

B. Number of items scored: ___ ___

PARENTS & STAFF Average Score (A ÷ B) ___.___ ___

Total and Average Scores

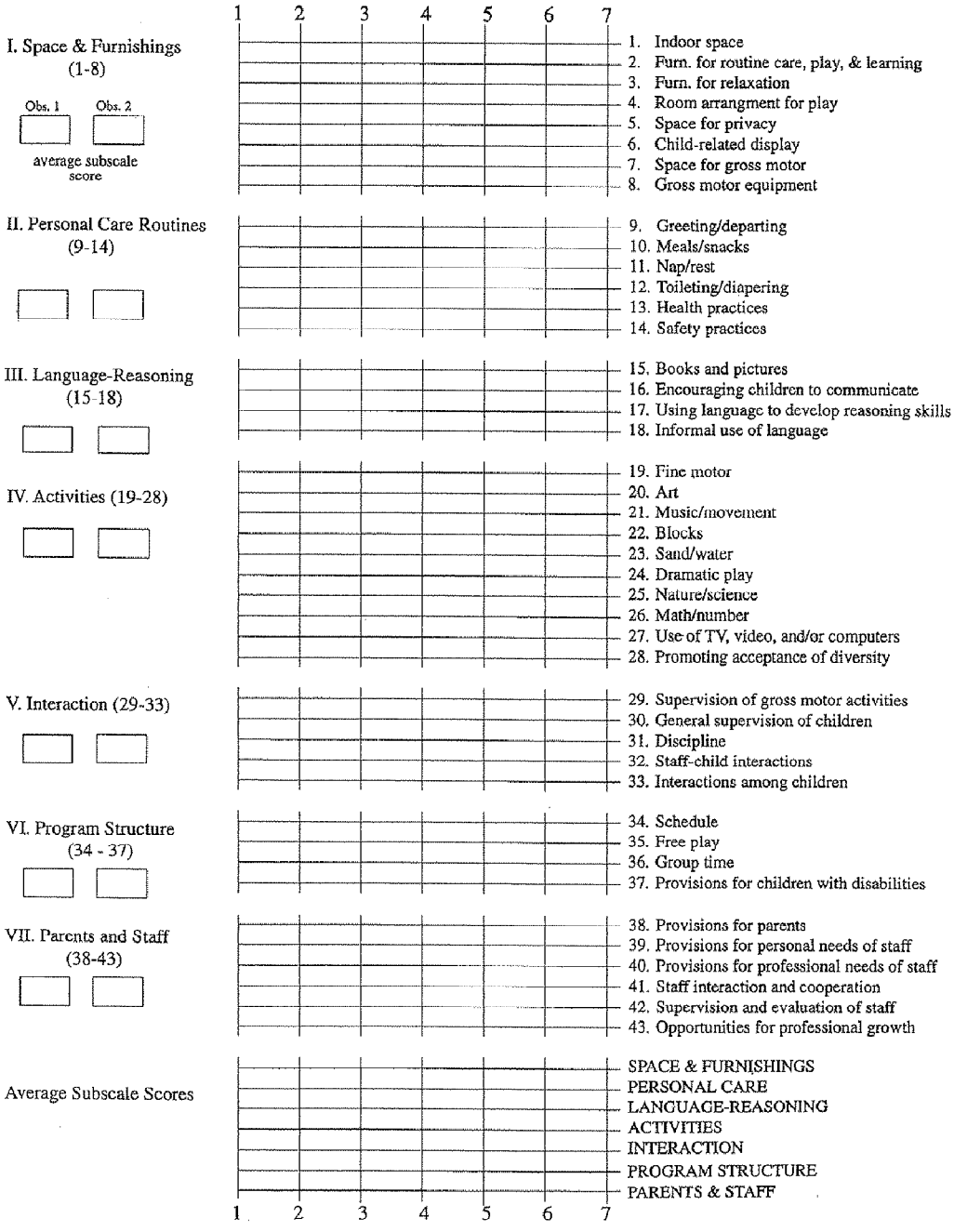
	Total Score	# of Items Scored	Average Score
Space & Furnishings			
Personal Care			
Language-Reasoning			
Activities			
Interaction			
Program Structure			
Parents & Staff			
TOTAL			

Comments and Plans:

ECERS–R Profile

Center/School: _____ Observation 1: __ __ / __ __ / __ __ Observer: _____

Teacher(s)/Classroom _____ Observation 2: __ __ / __ __ / __ __ Observer: _____



59