**A QUALITATIVE EXAMINATION OF THE READING
NEEDS OF HIGH FUNCTIONING CHILDREN
WITH AUTISM**

By

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Abstract

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A Qualitative Examination of the Reading Needs of High Functioning
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Autism is a developmental disorder that belongs to a family of developmental

disorders known as Pervasive Developmental Disorders. In the Today (2002) newsletter

the Council for Exceptional children suggests that autism is one of the fastest growing

disabilities categories. Children with autism have difficulties understanding and

classifying information from their environment. They often fail to interact effectively

with their environment because of the characteristics associated with the disorder. It has

also been suggested that children with autism may learn differently than the non-autistic

child.

Teaching children with autism requires that special attention be given to the needs

and characteristics of the disorder. The purpose of this paper is to conduct a qualitative

literature review of these needs and characteristics and make recommendations towards an appropriate reading ideology for high functioning grade school children with autism.

A teacher approaching reading instruction of an autistic child needs to be aware of unique characteristics and the complexity of special needs associated with the disorder. Autism is a developmental disorder that affects how a child looks at and interacts with the world around them. Children with autism often are found to become frustrated because they cannot make sense out of the world around them. Helping them make sense out of their environment requires specialized instructional methods that take the characteristics and learning styles associated with autism into account. The first section of this paper examines the literature concerning the characteristics, needs and learning styles of children with autism.

The paper continues by examining basic reading instruction. Teaching children with autism to read not only requires an understanding of autistic disorder, but it also requires an understanding of the methodologies involved with reading instruction. This section examines two of the popular reading methodologies, the bottom-up model and the top-down model, and the beliefs behind them.

The discussion concludes with a look at a reading methodology that best fits the needs of children with autism. There is no single methodology that is best, instead a combination of the styles of reading instruction appears to be the most effective way to teach children with autism to read. The eclectic model provides a structured, yet flexible reading methodology that appears to have the necessary components to effectively teach reading to high functioning grade school children with autism.

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Research Proposal

The study proposed is a qualitative examination of children with autistic disorder and their reading needs. It has been suggested that children with autism learn differently than children without autistic disorder. The examination will be an extended literature review coupled with recommendations of teaching strategies for reading.

Chapter I

Introduction

The purpose of this study is to examine the reading instruction needs of high functioning grade school children with autism who are entering the literacy process. Children with autism demonstrating an IQ above eighty-five are considered high functioning. The learning styles of children with autism appear to be different than those of the standard learner. "The children present a unique array of problems that are perplexing because they often seem inconsistent with what is understood about human learning and behavior" (Quill, 1995, p.1). According to Trevarthen, Aitken, Papoudi and Robarts (1996) children with autism will require special education because they do not fit in with normal classroom work and will not be able to keep pace with the class. If this is the case, and since reading instruction is becoming more and more standardized and routinized, then it would seem that teaching reading to children with autism would require methods that may not be in full alignment with traditional reading programs. Traditional reading programs seem to approach reading through a singular ideology, often phonics based, and are often programs that have been created for students functioning in the average reading ranges. The traditional reading program may not be effective for the learner with autism as a result of several factors including: learning style, behavior issues, interest factors, and environmental issues. All of these issues factor greatly in the learning and development of the child with autism.

Unfortunately, the majority of research and curriculum for children with autism has focused on developing structured behavior programs and teaching basic social skills to this group of children. There appears to be very little evidence of a comprehensive

reading program for students with autism. There is evidence of several reading aids, like the Lovaas program and the Hands on Reading program, that can be incorporated into the traditional reading programs, but do not provide the materials or methodologies to stand alone as a reading program. Children with autism who are learning to read are being incorporated into low level reading programs, even though many of them are not necessarily low level learners. These low level reading programs focus on teaching basic functional reading skills and often result in the child being completely separated from their peers. Therefore, educators need to be asking how children with autism are learning and why they are not becoming literate through the traditional reading process.

Christopher Kliewer (1998, p. 98), in a discussion in his book on educating children affected with Down's syndrome, said that the reason a student was labeled illiterate "stemmed from a lack of opportunity to engage in meaningful reading experiences within a framework of thoughtful expectations". Although Kliewer is discussing children with Down's syndrome, his statement can be generalized to include autism and many other groups of children with special needs. Children with autism are a unique group of learners who require their own set of expectations and may see experiences differently than does the non-autistic child. Therefore, using Kliewer's line of thinking the teacher who develops a reading program for learners with autism must be informed about the world observed through their students' eyes in order to effectively meet the needs of their learners.

The act of teaching reading to any child requires the teacher to develop an understanding of what reading is. This study will attempt to answer the following questions: First, what are the needs and characteristics of children with autism? Second,

what is reading and what is its purpose? What are the processes that children go through to become print literate? Last, because of the special needs of children with autism, how must their literacy process be modified or augmented? These questions must be answered before a teacher can begin to give direction to a program for teaching children with autism to read. Due to the nature of autism, it is also important that the child with autism answer similar questions, enabling the child to begin to develop a schema that will allow them to put a purpose to the process.

The first step, in answering the above questions above and applying the answers, is to develop a definition of what autism is.   Autism is a disorder which encompasses many behavioral and learning concerns. These behavioral and learning traits give children with autism a unique perspective on the workings of the world. The exploration of autism reveals the many openings onto which reading may enter and become a part of the child's world. Mira Rothenberg illustrates this point in her description of a young boy with whom she worked; "His understanding of communication and human meaning are all based on fantasy, but once provided with the proper template he begins to create a foundation to build upon" (1977, p. 16).

This examination of children with autism and reading ideologies will begin in chapter two with a review of the literature about the specific characteristics and behaviors exhibited by children with autism. The literature review in chapter two will also examine two of the popular reading theories currently under heavy debate. The purpose of chapter three is to suggest an appropriate style of reading instruction specifically inclined towards high functioning grade school children with autism. The final chapter will be used to draw conclusions from the readings and research.

Chapter II

The purpose of chapter two is to conduct a literature review of two important

factors. The first factor concerns the spectrum disorder that is autism. The first section

will be an introduction to the characteristics, assessment, and unique needs of children

with autistic disorder. The second section will be a review of the current forms of reading

instruction being used for children with developmental disabilities.

An exploration of autism

Autism is a disorder that affects the way an individual sees the world. Children

with autism are often described as almost alien in nature because of their seeming

disinterest in the social realm in which they find themselves. Temple Grandin is a high

functioning autistic woman who has been highly successful in both the engineering world

and in the world of autism research Grandin (1995). She describes herself in the

following manner in reference to the world around her: "I was like a visitor from another

planet who has to learn the strange ways of the aliens" (Quill, 1995, p. 43). As a

disorder, autism is extremely difficult to define and to diagnose since the spectrum of

behaviors and characteristics associated with the disorder is so broad and diverse. The

disorder shares characteristics and behaviors with a family of other disorders known as

Pervasive Development Disorders (Siegel, 1996). The disorder is one that is present at

birth, but Trevarthen et al. (1996) points out that the symptoms are often not noticeable

until one or two years of age, when the child begins to become aware of its surroundings.

The Pervasive Development Disorder umbrella includes: Autistic Disorder,

Asberger's Disorder, Rett's Disorder, Fragile X Syndrome, Childhood Disintegrative

Disorder and Pervasive Development Disorder: Not Otherwise Specified. Each of these disorders falls under the category of a spectrum disorder, meaning that symptoms and severity may be different from child to child. "These disorders share varying degrees of impairment in social functioning, communication and behavioral variability" (Assessment and Treatment of Children with Autism in the Schools, 1999).   Autistic Disorder and Pervasive Development Disorder: Not Otherwise Specified (PDD, NOS) are viewed as the more related disorders in the group. The given difference between the two is merely a quantitative measure of symptoms that are present. For the purposes of this study, children diagnosed with autistic disorder will be the focus of the research.

Autistic disorder is diagnosed on the basis of criteria presented in the DSM IV. The DSM-IV uses twelve different diagnostic criteria for defining autistic disorder. The criteria are presented in three distinguishable groups: social development, communication, and activities and interests. Each criterion is then broken down into four sub criteria. Receiving a diagnosis of autistic disorder requires that the individual have positive identification of six out of the twelve sub criteria, with at least two of the criteria being met in each of the three main categories.

It is important to separate the symptoms associated with autistic disorder and those that may be the result of a developmental delay. According to Siegel (1996, p. 11) about 80% of children with autism also have some degree of mental retardation. She discusses the idea that the distinction has traditionally been made by IQ testing or tests of adaptive behaviors, however, nonverbal intelligence tests are becoming more popular because of the conflict of the social abilities on traditional IQ tests and the social skills difficulties associated with autistic disorder. Siegel (1996) goes on to say that the use of

non-verbal intelligence tests reduces the chances that symptoms of autism will be confused or be regarded as the result of mental retardation, although it is not a perfect indicator of a child's mental development. "Unlike children with autism, children with mental retardation typically show impairments in social interaction, communication and behavior that are consistent with their developmental level and do not show the atypical functioning that children with autism show" (Assessment and Treatment of Children with Autism in the Schools, 1999, p. 4).

Students with autism do show a high prevalence of mental retardation, but the spectrum also includes "students who have average or above average IQ or high functioning autism". (Today, 2002, p. 5) Average intelligence is considered to be an IQ score of eighty-five or above. These students will often function in the classroom similar to students with learning disabilities. However, teaching these students often requires a different approach due to the unique symptoms and learning styles of autistic disorder. These unique symptoms and characteristics are the challenges that need to be explored because they are also factors that inhibit the autistic child's reading experience.

Michael Powers (2000) suggests that the most noticeable symptom of autistic children is their inability to develop normal social skills. Children with autism often seem to be uninterested in the people in their environment. Powers goes so far as to suggest that these children seem to "look through people". Temple Grandin (1995, p. 36) makes a similar association when she describes an incident that happened to her one day while she was washing windows:

I was trapped between the windows, it was impossible to communicate through the glass. Being autistic is like being trapped like this. The windows symbolized my feelings of disconnection from other people …..

The failure of many children with autism to connect to those that are around them makes it difficult to develop relationships. This seeming disconnection with their social environment is usually the biggest clue that a child may be suffering from autism. Teaching a child with autism requires the teacher to somehow breach this isolation. It makes sense to suggest that a child needs to be part of and show interest in the environment around them before they can begin to learn from that environment.

The difficulties that autistic individuals have interacting with their social environment may also be responsible for what Edelson (2002) calls "theory of mind". Theory of mind refers to an individual's ability to recognize that other individuals view the world differently and have a separate thought process. Siegel (1996) suggests, along with others (Edelson, 2002), that individuals with autism lack a theory of mind, and that this is responsible for their "unawareness" of the feelings and intentions of others around them. A lack of theory of mind creates difficulties in the ability of the child with autism to understand what appropriate communication is, as they have no basic understanding to the purpose of communication, besides conveying their own will. A lack of theory of mind may also be responsible for the inability of a child with autism to express their thoughts and emotions to others. Although it is a difficult door to open, both low and high functioning children with autism can be taught to communicate.

High functioning children with autism are usually better able to develop a connection with others around them, than are lower functioning children with autism. The social functioning of children regarded as high functioning is often regarded as "active-but-odd". (Powers, 2000) These children often do not seem to pick up on traditional social conventions. They will often fail to recognize personal space in conversations and

at times demonstrate strange self-stimulating behaviors, like pacing or flapping their hands, while in the middle of a conversation. Powers (2000) suggests that, for children with autism, a conversation partner is more of a receiver than an active participant in conversation. The children often do not understand that their behaviors might be awkward or uncomfortable to others.

Routine and predictability are another need for all levels of children with autism. Richman (2001) states that children with autism will often demonstrate a focused routine of behavior, and will show a need for sameness. These children will often require that objects be placed in a certain spot or that processes, such as eating dinner, be carried out in a very ordered routine. There are two things that seem to separate this need for routine from other disorders. Siegel (1996) states the first as being "the preferred routines are characteristically ones with little or no functional value". Powers (2000) states the second as being that children with autism "become extremely distressed when it is changed and cannot adapt to a different way of organizing themselves readily". This demand for sameness differs greatly in intensity from child to child. Recognizing these patterns in a classroom may offer a great deal of insight into how the child might be better incorporated into the educational environment.

Sensory sensitivities are a major factor that may become an issue in any environment a child may find themselves. Many children are hypo or hyper to touch, sound, and even vision. Temple Grandin (1995) described her roommate's hair dryer as sounding like a jet engine. "Approximately 50% of autistic children express discomfort when exposed to certain sounds or frequencies" (Edelson, 2002, p. 3). Grandin goes on to suggest that the reasons an individual with autism might not meet another persons eyes

is because, visually, they cannot tolerate the movement of the eyes. Although some sensory experience might be unbearable or amplified for the child with autism, other sensory experiences might be overly attractive. For example, a child with autism may become fixated by the feel of a smooth object, or he may become visually fixated by a certain object or pattern. The environment a child with autism needs to be placed in is greatly dependent on the sensory stimulation in which they can function comfortably. Many children, on all levels of the spectrum, have difficulties dealing with the barrage of their senses in a typical classroom environment.

Some children with autism crave pressure on their bodies, and they will often become quite calm when the pressure is applied (Grandin, 1995). Temple Grandin was one of those that craved pressure. She ended up developing a crude squeeze machine that she could lie in. For Temple Grandin (1995), and many other children with autism, the feeling of pressure can be extremely therapeutic. However, many times sensory stimulation can cause the child's sensory processing system to overload. When the system overloads the child is no longer able to take in new information, and the child will close themselves off from the world. This may be the reason why children get set in routines and patterns, as a way to avoid uncomfortable stimuli. Sensory processing becomes a major factor when discussing learning styles in children with autism.

Quill (1995) suggested that children with autism often demonstrate relative strengths in concrete thinking, rote memory, and understanding of visuospatial relationships. However, children with autism have difficulties in comprehending abstract thoughts and ideas. There is not a great deal of literature on the subject of cognition in

children with autism. Research touches on how children with autism think with a very light hand. Perhaps this is because there is very little yet understood about the etiology of the disorder (Richman, 2001). Therefore, the understanding of the cognition of children with autism is highly debated. As mentioned earlier, the focus of studies around the world of autism have been towards behavior management and social skills training. Many of those that have addressed the subject are individuals affected by autistic disorder; perhaps the loudest voice in this area is that of Temple Grandin. Grandin's writings are cited in several books when the subject of cognition and learning arises.

Grandin's work (1995, 2002) has brought the ideas of visual thinking to the forefront of understanding how children with autism think about the world. Grandin (1995) proposes that children with autism think about the world through a stream of visual images. The first sentence in her book is "I think in pictures" (Grandin, 1995, p. 19). She often refers to those who are not autistic as being "language based thinkers". Non-autistic thinkers live in a realm of words. Each word has a definition. The definition of each object is how the world is classified and described. The difference between visual and language based thinking is so foreign that for someone that does not think visually it is difficult to grasp.

Grandin (1995, p. 25) quotes Charles Hart, the father of a child with autism, in which he says "Ted's thought processes aren't logical, they're associational". Ted's thoughts were built through concrete associations to real life objects and events. Hart's statement can be applied not just to the idea of visual thinking but to communication as well. In the mind of the autistic child words are linked to a mental image or memory. A cousin of this writer has been diagnosed with autistic disorder. The mother of this young

girl with autism described an incident that recently occurred. Her daughter, age ten, was sitting at the dinner table and said the words "bon appetite". The girl has no understanding of the meaning of this phrase, but had associated sitting at the dinner table with an episode of the cartoon, "The Rug Rats", when one of the infants on the show sat at the table to eat and said "bon appetite". This is a great example of how a child with autism associates a word with a visual image and then applies it.

The processing of the rest of the world works in a very similar manner for children with autism. Temple Grandin (1995) provides many other examples to clarify this style of thinking. She discusses one child who developed the understanding that the word dog means to go outside, because she had associated the word with seeing the dog go outside all of the time.   Grandin describes herself as seeing the word jump and she visualizes an individual jumping hurdles. This style of thinking does have genuine and valuable advantages for high functioning individuals with autism. Some individuals are often able to direct their fixations and thinking styles towards successful careers. Temple Grandin for instance, used her interest in cattle chutes and her ability to think visually to become a very successful cattle plant designer. However, the problem is discovering how best to educate and understand these high functioning children with autism.

A great deal of the curriculum for children with autism is focused towards behavior change and management. This is likely due to the focus the children's impairment in social functioning (Quill, 1995). It may at times seem like the purpose of education is to create functional citizens, but sometimes it is important to meet the child in his/her own world in order to provide purpose and understanding. Training a child may make them perform, but does it make their cognitive understanding of what is going

on any better? Building a template for understanding actions and events, although difficult, would provide a much stronger basis for development over time. Learning to read is method for building one such template. What better way to build a bridge between worlds than through the stories of human beings. However, the teacher must first examine what they consider to be reading, and then the teacher must also ask how does one teach the world of language to one who lives in the world of images.

An Exploration of Reading

The issue of teaching literacy has been debated for centuries. Debate not only follows how reading should be taught, but it also has asked why reading should be taught. The debate seems to lose its luster when the factor of children with developmental disabilities is included in the mix Christopher Kliewer (1998) points out why he believes this occurs. Kliewer is addressing individuals with Down Syndrome, but the principles of his point are applicable to the spectrum of developmental disabilities, including autism. His point is that the only way an individual is considered part of the literate community is if the student can perform at an "age-normed pace of what is assumed to be a cognitively based conformity to the reading sub-skills." Those children that cannot perform are placed outside of the print literate community and therefore lose the experience of reading as form of communication and connection.

Reading is more than learning to pronounce words on a page. As a matter of fact many high functioning children learn to pronounce words without ever receiving any kind of instruction. Powers (2000) discusses several stories from parents describing their young children with autism as being able to read street signs or restaurant menus.

However, reading is more than just recognizing words or letters. Reading, "in a very fundamental way involves constructing meaning from words" (Templeton, 1995, p. 5). That is the very basis of reading, to convey information from an author to a reader. The question that everyone seems to be trying to answer is how. How do children begin to construct meaning form words? There has been ongoing debate trying to answer this question for quite some time.

"How one teaches reading is shaped in no small way by how one defines reading" (Hall, Ribovich, Ramig, 1979, p. 5). The teacher is the person who will be responsible for guiding the student through the reading process. The ideology that the teacher takes towards reading will affect the instruction, the assessment, and the texts of the student in the classroom environment. All of the ideologies seem to agree on three things affecting reading instruction: "the text being read, the reader, and the context for reading" (Klein, Peterson, Simington, 1991, p. 9). However, the debate over the role of each of these factors has not been resolved.

According to Templeton (1995) there are three major sides of the debate. Those who support the bottom-up learning process are suggesting that children begin the reading process by identifying letters. The child will then begin to build from letters to words to sentences, and so on, until the child is able to grasp meaning from the text. This process of learning to read is associated with the popular phonics programs and basal reading programs. Teachers who follow this ideology are known to follow basal readers and group children into hierarchical reading groups according to their skill levels.

Researchers (Moats, 1999) from the bottom-up reading camps suggest that children who cannot decode the words on a page will struggle to gain meaning from the text. Providing complete instruction in the phonics arena also provides the reader with a schema for classifying words and letters. Researchers from the National Institute of Health (2000) agree when they state that the effective teaching of reading includes teaching phonemic awareness and phonics. Once the child is able to develop a classification system for syntax and phonology then they may be able to develop what is called automaticity, "that is words are recognized rapidly, accurately, and with minimal attentional resources" (Resnick & Weaver, 1979).

Those who support reading as a top down process are suggesting that reading is basically processing the meaning of words and sentences before they process the actual makeup of the words themselves. Individuals (Klien, Peterson, Simington, 1991) supporting this approach have suggested that word-identification is not necessarily that important.

This ideology is often associated with the whole-language approach to reading. Teachers following this line of thinking are often associated with avoiding specific skills instructions, and students are encouraged to read for their own reasons and agendas. David Katims (2000) suggests that this is the line of thinking that has begun to dominate regular education classrooms, but has not yet infiltrated the special education classroom where functional reading still dominates.

Children can become immersed in real texts and become part of their social environment using the top-down methodologies. Students get the opportunity to participate in groups that are based on their interests and not built around reading levels.

This, as Christopher Kliewer (1998) describes, allows the child to be connected to the literate community. It not only allows the child to be connected to the literate community, but through the use of real texts, allows the child to begin to have interactions with a theory of mind.

Klein, Perterson, and Simington (1991) discuss a third ideology known as the eclectic models of reading. He suggests that this model is a competent mix of both the top-down and the bottom-up modes of thinking. This view recognizes that it is important to learn about the characteristics construction of text, but also recognizes the importance of the reader's background knowledge in determining meaning (Templeton 1995). Children following the eclectic approach are guided through text in both direct and indirect instruction.

Chapter III

The purpose of this chapter is to describe a reading ideology that is appropriate for the needs of high functioning children with autism, based on the review of the literature. This chapter will focus on incorporating the current theories discussed in the review of the literature to the special needs and characteristics of the autistic learner.

There is not any one reading ideology that fits the needs of children with autism perfectly, nor has any one reading ideology been found to be fit any group of children perfectly. Most of the reading ideologies are geared toward standard readers and do not take into account the specific instructional needs of children with autism. A reading program needs to be very flexible to bend to the needs of the large spectrum of learners with autism. Richman (2001) points out that no two autistic children are alike, and that these children often exhibit very different needs and behaviors. Neither a strictly top-down approach nor a strictly bottom-up approach will provide for every learner with autism. Grandin (1996) suggests that some children with autism learn more readily using a phonics approach, and others will benefit more from a whole word approach. Of the three learning ideologies the eclectic ideology seems to provide the most flexible methodologies for teaching reading instruction

The eclectic model provides opportunity for the reader to participate in activities from both the top-down and the bottom-up ideologies. The child with autism who is beginning to read needs the structure and phonics skills of the bottom up approach. However the student also needs the opportunity to develop the schema for classifying and constructing meaning from passages of real text, which is used in the top-down style. The

use of real text allows the reader to be exposed to real world communication and gives the child the opportunity to follow their own interests.

Children with autism seem to function well when given a systematic set of guidelines to apply. Applied behavior analysis has been successfully employed to help children with autism improve social skills and behaviors (Assessment and Treatment of Children with Autism, 1999). According to Richman (2001) several studies have revealed that structured repetition and practice have helped improve both behaviors and cognitive functioning. Trevarthen et al. (1996) have also documented studies suggesting that behavior modification approaches have been used successfully to teach language skills. Using a structured approach to teach the basics of reading might also have success. A structured phonics approach provides the student with autism a chance to develop a template or schema with which to examine written text. The whole word theorist might disagree; however, the child with autism does not function well without a structured and predictable environment.

Richman (2001) stresses that structure is very important in working with children with autism. A phonics program provides structure for the reading process. . Grandin (Quill, 1995) suggested that she would never have learned to read if it had not been for phonics. She had difficulties remembering all of the words, but was able to construct words by learning to associate letters with sound. Dalrymple and Porco (1989) suggest that the teacher should try and teach specific skills of reading, which may allow the child with autism to be better able to progress through the reading process.

It is also important to remember that children with autism are visual learners. Grandin (1995) described her memory as a filmstrip. She made visual photographs to

make associations between words and their meaning. However, Grandin points out that she has a great deal of difficulty learning words that do not have a concrete meaning or association. Most readers identify words based on definition or context. A reader with autism, according to Grandin's description, simply looks at a mental list of words and concrete associations to get understanding. If this is correct then words that are not able to be committed to memory will be much harder to recognize. A phonics background could provide the child with autism a template to decode words that are not readily accessible through associations with concrete images.

A method of teaching phonics that would be great for children with autism is described by Moats (1999). Moats suggest a moving away "from a sound-symbol connection and toward a rote visual cue orientation" (1999, p. 45). She describes this visual cue orientation as teaching a sound and then linking that sound with a symbol or group of symbols. The sound and symbols can then be linked to a "keyword mnemonic" (Moats, 1999, p. 45). So if a teacher were introducing the sound of /s/, it would be anchored to the letter /s/, and then to a word like sand. A teacher could go even farther by using a multi-sensory approach and introduce sandpaper to strengthen the association. This is method that would provide both visual and tactile support to the concept of /s/. There are many approaches to phonics and this is only one, but it is important to give the child a concrete concept to build on. .

Providing a structured and systematic program is also necessary for one particular trait of autism. Students with autism like to have routine and predictability in and new situations will often cause them a great deal of anxiety (Today, 2002). Therefore, providing a framework for reading that can be slowly built upon and can maintain some

predictability may decrease the chances of anxiety or frustration levels. Moats (1999) points out that phonics should be taught in a logical order moving from simple to complex. This would agree with the successful methods that are used in building frameworks for social skills and behavior management in children with autism.

Although the systematic approach of the bottom-up methodologies appears to be necessary for a child with autism, the reading experience should not stop there. The top-down methodologies provide very useful experiences the reader with autism might very well benefit from. The literature review revealed that children with autism have difficulty with communication, theory of mind, and often lack the opportunity to participate in what Kliewer (1998) describes as the literate community. The top-down methodologies provide these factors. Katims (2000) argues that many of the special education classrooms today provide only functional reading abilities. Training children with autism to read as a purpose for functioning leaves out several purposes for reading. It forgets that reading is also for enjoyment and communication between individuals. Leaving the child with autism with the simple ability to decode text also leaves them locked into their world. The purpose of teaching children with autism to read should include the hope of creating a bridge between their world and the realties of the outside world.

A common method for teaching children with autism to read whole words and strings of words is to pair them with visual images. Fad and Moulton (1999, p. 15) states that when working with children with autism "using a clear concrete visual system of communication helps minimize misunderstandings and frustrations". Many teachers will begin by presenting a simple phrase or sentence with the object word of the sentence either being completely replaced by a visual object or pairing the object word with its

corresponding visual image. A sentence like, I see my mittens, may be paired with a picture of mittens or the word mittens might be completely replaced with the visual image of mittens. This method strengthens comprehension of strings of words and vocabulary words by providing a mental image to reference. Kelly and Friend (1993) released a popular reading tool for children autism called "Hands on Reading" that uses word symbol pairing in the instruction of reading.

Part of the understanding of the top-down approach is that language is interactive. This line of thinking is key in working with children with autism. If children with autism do in fact lack of a theory of mind, then what better way to introduce it to them than through reading. The process of constructing meaning from someone else's words might very well begin to open the pathway to developing an interactive role in the communication process.

The oral tradition involved in the top-down methodologies is a significant tool to teach reading to children with autism. Hearing text being read may improve vocabulary and will allow the student to experience how others are viewing the text (Weaver, 1998). Hearing words may also strengthen some of the relationships that children with autism make between text and its meaning. Edelson (2002) does suggest that some children with autism are auditory learners. Reading and being read to could also develop the child's understanding that reading is a communication process that involves the thoughts and will of someone other than themselves. Watching someone read is just like providing modeling for the student to follow. Fad and Moulton (1999) provided that modeling is a very effective and almost necessary task for teaching skills to children with autism. Katims (2000, p. 8) also offers that "observations of people engaged in literacy" and

"collaboration with others in performing literate acts" are both aspects of developing reading ability.

Perhaps the most beneficial offering from the top-down methodologies, for high functioning children with autism, is the idea of student centered reading. This style of reading allows the student to read in areas of interest from real text (Templeton, 1995). This has two advantages for the autistic child.

First the use of real text helps generate an understanding of the purpose for reading (Weaver, 1998). This is especially important for children with autism because any link to regular activities could be rewarding in the development of their social world. According to Kelly and Friend (1993, p. 6) "reading unaltered text provides a more natural model of language, allowing them to listen to language that expands their experience of the world".

The second is the use of student interests in choosing reading materials. Siegel (1996) points out that children with autism demonstrate a much higher motivation if the child is interested in the subject. She goes on to suggest that children with autism will rarely read stories with elaborate plots and characters, but instead gain enjoyment from reading fact filled materials. Kliewer (1998) also describes a similar experience. He describes a class of children with autism showing drastic improvement in reading levels only after books of interest had been incorporated into the classroom. These are clearly positive benefits that can be incorporated form the top-down methodologies to teach reading.

Learning to read is not just dependent on reading instruction methodologies. It is also dependent upon the context in which the instruction takes place. Children with

autism are very sensitive to the environments around them. In choosing an environment for learners with autism it is important to take into account the sensory factors associated with the disorder (Structured Teaching, n.d.). Students with autism can suffer from over stimulation of any one of their senses, depending on the child (Quill, 1995). It is important to examine factors that may affect the child's visual, auditory, and tactile senses (Educating the Student with Autism, n.d.). Keep in mind that children with autism are often extremely sensitive concerning some of their senses. Grandin (1996) describes children with autism who cannot bear the sound of the PA system and others who can see the flickering of the electric cycle in fluorescent bulbs. The effective teaching and learning of reading is greatly dependent on the child's ability to have a comfortable and safe environment so that the child can concentrate on and enjoy the process of learning to read.

An important part of context is the materials being used to teach develop the abilities of the child with autism. Dalrymple and Porco (1989, p. 15) recommend five important factors to consider when choosing materials for reading instruction. They list them as:

1. Provide for success- Material begins at a level with in the student's capabilities
2. Consider interests of learner- Use materials that cater to student's interests age level and peer interests
3. Create maintain and further the student's interest by providing a variety of materials
4. Match level of material to the student
5. Meet predetermined goals and objectives

Following these guidelines may help the teacher to maintain a structured reading environment while providing diversity in reading instruction. The materials that are

chosen should be able to be presented in a variety of forms and should definitely be

something that relates to the experiences of the child with autism.

Chapter IV

Conclusions

The purpose of this chapter is to summarize the concerns in teaching reading to high functioning grade school children with autism. This chapter will also include recommendations towards an appropriate reading ideology for the needs of children with autism.

The disorder of autism is becoming more abundant as time progresses. Powers (2000) suggest that the prevalence of autism may be twice what was originally thought. Developing methods to help these children to be able to look at the world with understanding and have the world look at them with understanding is essential. Not only do children with autism deserve to be understood by the world; they also deserve to be able to interact as normal citizens of our environment. It is the role of the teacher to try to provide the opportunities for high functioning children with autism to develop a citizenship with their social environment, this includes an education.

One thing that this examination clearly demonstrates is that, while children with autism do have special needs that have to be attended to, they benefit from a reading experience similar to the one non-autistic children do. They require interaction with their peers in order to discuss and understand the meaning of text. Children with autism also, like other children, seem to respond very well to text that appeals to their particular interests. There is a need to master the basic decoding and comprehension skills that most kids in gradeshool are developing. Though children with autism will benefit from

modified instruction geared towards specific needs, they will also benefit a great deal

from having reading instruction with other children in the regular classroom setting.

Children with autism demonstrate several characteristics which makes learning an

often difficult process. Someone hoping to educate the child with autism has one

important task: teaching children with autism requires that attention be paid to the unique

social and cognitive functioning of the child. Like Grandin (1995) said, being a child

with autism is like seeing the world through the eyes of aliens. Educators need to seek a

way to access the world of these children, and bring, to the child, the ability to

comprehend the world around them. The ability to read is one such way.

Reading can provide a number of educational opportunities for a high functioning

child with autism. Reading could be instrumental in the development of a theory of mind

and in the strengthening and understanding of social and environmental interactions in

the life of the child with autism. Reading could provide the opportunity for the child to

become not only a literary citizen, but a social citizen as well. However, teaching

children with autism to read is not necessarily so clear cut.

Children with autism require reading instruction that is able to address the child's

way of thinking. This requires the reading teacher to use methodologies from several

different camps of literary thinking. The child with autism may benefit from parts of

each methodology, but the teacher may find that if they stick to one methodology they

will be unsuccessful in providing the child with the ability to perform in all aspects of the

reading process. The goal is to give the child the ability to read and construct meaning from written text. Teaching the child to solely pronounce words on a page leaves out the whole interactional dynamic of reading. Children with autism have difficulties understanding that communication is an interactive process with the environment. Having them participate and interact with others reading and with the text itself may help instill the understanding that reading is an exchange of ideas. On the other hand, presenting a child with full text and strings of text, without the ability to classify words, will simply lead to frustration and confusion. Children with autism appear to function best when they have structured guidelines to classify their environment. They will often become frustrated with abstract ideas that have no concrete meaning.

Reviewing the literature reveals that children with autism require a reading program that is structured, but flexible. Children with autism have difficulty in developing appropriate schema for classifying their environment; therefore providing them with appropriate structure will help them to begin to develop a framework for classifying the world around them. Flexibility is necessary because of the very basic fact that all children with autism seem to express different needs and learning styles. The teacher needs to be able to modify instruction to meet the diverse needs among the spectrum of students with autism. As far as a reading ideology is concerned, an eclectic view seems to reveal the greatest potential for high functioning gradeshool children with autism. The eclectic model allows for the incorporation and structure of the bottom-up styles of teaching, while still allowing room for the exploration of literature and student interests. Using methodologies from more than one of the reading camps provides the teacher with several avenues to approach the child with autism in an instructional

environment. It not only provides the teacher with tools, it also provides the student with autism more avenues on which to approach the construction of meaning from text.

The teacher needs to take into account the special needs that a child with autism will involve. A reading methodology is only one of the tools the teacher will need. The teacher needs to consider the individual needs of the student and then decide on the appropriate environment for the child. The child with autism may not be able to function comfortably in some environments due to sensory sensitivities. Providing a comfortable environment is essential in avoiding frustration and increasing concentration in the child.

Materials also need to be considered. Appropriate materials need to be incorporated into the child's learning experience, preferably materials that will cater to the child's learning style. Students may show greater involvement if they are allowed to use materials that are of interest to them. Providing for the strengths and interests of the child with autism may help their reading experience to be more enjoyable and more productive.

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