COMPARATIVE EFFICACY OF READING INTERVENTIONS
FOR CHILDREN WITH
AUTISM SPECTRUM DISORDER

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Submitted to
Northern Michigan University
In partial fulfillment of the requirements
For the degree of
Master of Arts in Education

Graduate Studies Office

2012
Abstract

Teaching reading comprehension to children with Autism Spectrum Disorder (ASD) is a task with little definitive research behind it. Children on the spectrum display a wide variation in intelligence, social skills, and language skills, with each child manifesting autism in his or her own way. The purpose of this study was to find the most effective ways to help these children learn to read and connect to the larger world. The study examined historical and current educational, psychological, and medical literature with a primary focus on ASD and reading comprehension.

Most research in ASD interventions suffers from very small cohort groups, with few or no beginning baselines or instructional guidelines. Subjects usually were children with high-functioning autism or Asperger’s Syndrome, which provides little insight into working with children with little or no oral language and little or no desire to interact socially.

This study suggests that many strategies used with regular education students also work with ASD students with certain modifications: including one-on-one time with a teacher, individualization of instruction, and careful observation in the assessment process. The techniques of guided reading, phonemic awareness, anaphoric cueing, the use of colored overlays, and activating prior knowledge were found to be particularly effective. Current research is becoming more focused on reading comprehension rather than decoding, and on developing reliable methods that are evidence-based and practical in the public school classroom.
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Chapter 1: Introduction

Autism is a relatively new diagnosis. The term “autistic” was first introduced independently in the early 1900s by psychiatrist/psychologist Eugene Bleuler and Viennese psychiatrist Hans Asperger (Holaday, 2012). The first person diagnosed with autism Donald Gray Triplet, was born September 1933 and still lives in his hometown of Forest, Mississippi (Donvan & Zucker, 2010).

Leo Kanner is the first physician to be identified as a child psychiatrist (Autism-World, 2007). He studied 11 children with autistic behaviors and contended in his 1943 paper that autism is caused by a cold, unloving mother, which resulted in a great deal of grief and guilt for parents of autistic children. Bernard Rimland (1964), a physician and parent to a child with autism, refuted the claim of poor parenting. Parents of autistic children welcomed his research and they helped organize the Autism Society of America in 1965 to provide the most current information and counsel. Hans Asperger examined the same type of childhood disabilities in Vienna in the 1960s and 70s and proposed that autism had a genetic link and was not due to poor parenting. In fact, he saw supportive parents as instrumental to their children’s progress (Holaday, 2012).

Recognizing the Needs of the Students With ASD

In the mid-1960s, the estimated number of children with autism was 4.5 per 10,000 (Lotter, 1966). Comparative studies by Rutter in 1968 and 1971 supported these findings (Rutter, 1973) and, in 1980, autism was added to the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III). The manual provided specific parameters, definitions, and descriptions of behaviors, which standardized diagnosis of the disorder. In 1994, the DSM-IV was published, with autism presented as a spectrum
that included autism, Rett disorder, childhood disintegrative disorder, Asperger’s disorder, and pervasive developmental disorder—not otherwise specified. As of 2008, the most recent year for statistics from the Centers for Disease Control, Autism Spectrum Disorder (ASD) affected 1 in 88 children, and 4 to 5 times more boys than girls (Holaday, 2012).

Research Question

In light of the prevalence of ASD and the pressing need for qualified teachers to have the appropriate tools, methods, and information in their educational repertoire, this study explored strategies utilized to teach reading comprehension to children with ASD. The guiding research question for study is: What modalities of the reading comprehension instruction process have been found effective for students with Autism Spectrum Disorder?
Chapter 2: Literature Review

Mitchell (2004), and Kaderavek and Rabidoux (2004) stated that the effort that goes into teaching children with Autism Spectrum Disorder (ASD) to read is worth the effort and struggle because it can enable a child to acquire knowledge in a mode other than oral language, which is often a weak skill. According to Kaderavek and Rabidoux (2004), participating in the educational processes, engaging in social connections, findings one’s place in society, and being part of the fabric of culture and the human experience are all worthwhile pursuits, regardless of the reading ability finally achieve by the child.

Kaderavek and Radidoux’s 2004 study involved two children, one of whom had ASD. This child, Phillip, was six years old and had little oral language. He parroted phrases and used stock statements to mean a variety of things. For example, “It’s time for Tang” came to mean it was time for a change in activities. Phillip was fixated upon reading the phone book and displayed the correct mechanism of reading top to bottom and left to right. He was able to decode most names and locations, and learned sight words for his daily activities.

However, Phillip, like many children with ASD, had a difficult time transitioning from one activity to another and tolerating changes to his schedule. Reading comprehension was able to make this part of his life smoother when his mother began to list the day’s activities and Phillip was encouraged to cross off each activity as it was completed. Phillip’s anxiety lessened when his mother was able to communicate through the written list what his day would look like (Kaderavek & Rabidoux, 2004). The
findings in this admittedly small study show that even limited reading comprehension may improve the life of an individual with ASD (Kaderavek & Rabidoux, 2004). Several researchers have examined the mother’s role in a child’s acquisition of reading, including decoding, modeling, and especially motivation (Zieglar, 1999; Chandler-Olcott & Kluth, 2008). Successful parents, through education and natural abilities, treat their children with ASD with respect and as individuals, employ a variety of strategies, encourage each small step of progress, and feel themselves, along with their child, to be a part of a team to make the child’s life fuller and more rewarding (Zieglar, 1999; Chandler-Olcott & Kluth, 2008). The following researchers warn that not all strategies work for all children and great care must be taken to fit each strategy to the current needs and learning styles of the child: Reading, 2007; Autismsociety.org, 2007; Nation et al., 2006; Olley, 1999; Chavez-Brown et al., 2005; Simpson et al., 2004; Dockrell & Lindsay, 2001; Simpson, 2005; Hess, et al., 2008; Chandler-Olcott & Kluth, 2009; Bridges, et al., 2011; Crosland & Dunlap, 2012.

General education teachers often work with children on the autism spectrum without the benefit of appropriate preparation, training, and support (Dockrell & Lindsay, 2001; Hess, Morrier, Heflin & Ivey, 2008). Some researchers state that techniques and strategies used by general education teachers in the regular classroom can often be used with success with children with ASD, but modifications must be put into place (Kluth & Darmody-Latham, 2003; LaBarbera & Soto-Hinman, 2009; Reading, 2007).

Moreover, assessing reading comprehension is very difficult with non-verbal students or with students who have limited verbal skills. Many students with ASD cannot verbalize their thoughts. Written language can allow some ASD children to finally
communicate with the world around them much like using American Sign Language or Picture Exchange Communication System (PECS) (Cihak, 2006; Bondy & Frost, nd). However, a dearth of self-knowledge, social knowledge, and Theory of Mind severely limit the child’s experiences, background knowledge, and motivation to come out of his comfort zone and put forth the effort to learn to read (Randi, Newman, & Grigorenko, 2010; Mitchell and O’Keefe, 2008; Lanter and Watson, 2008; Carnahan, Williamson & Christman, 2011).

**Theory of Mind**

Theory of Mind (ToM) is the ability of an individual to be aware of one’s own thought processes and to understand that other people have different perspectives, emotions, reactions, and thoughts that one’s own. People with ASD lack ToM, and this impacts reading comprehension in several ways; students cannot:

- Identify or empathize with another’s experience, emotions, reactions, or perspectives;
- See cause-and-effect;
- Reflect upon one’s own thoughts;
- Infer the thoughts of another;
- Infer intentions;
- Understand how one’s own behavior can effect another person;
- Predict behavior or reactions;
- Recognize false beliefs;
- Understand trickery (such as that used in fairy tales);
- Understand figurative language or metaphors;
Understand a character’s motivation;

Apply social conventions;

Differentiate fact from fiction;

Create a narrative since the ability to see cause-and-effect and motivations of others is missing.

(Reading, 2007; Randi et al., 2012; Gately, 2008; Lanter and Watson, 2008; Carnahan et al., 2011.)

**Teaching Techniques**

Research regarding the education of children on the autism spectrum from 1950 to 1985 focused on social adjustment. For these studies, children with ASD were included in a mix of children with Down Syndrome and brain injury. The literature is mostly silent from 1950 to 1980 regarding reading comprehension education for children with only autism. During this time, Heckleman (1969) suggested using “neurological impress” for teaching reading to children with autism. This entailed sitting beside the student and reading together, tracking the words; no comprehension skills were taught or assessed.

Reading research was again spotlighted beginning in the mid-2000s. Nation, Clarke, Wright, and Williams (2006) demonstrated no recognizable pattern or relationship in decoding or comprehension skills in 41 six to fifteen-year-old students with Autism Spectrum Disorder. Nation et al. (2006) chose children who had adequate language skills to be able to verbally respond in a non-word decoding exercise, answering questions after reading passages, a test or oral language skills involving single words both spoken to the child and elicited from the child. Chiang and Lin (2007) reviewed 754 cases regarding students with milder forms of ASD and found wide variation in abilities
with no corresponding relationship between intelligence, decoding ability, and reading comprehension. They determined that the condition of hyperlexia – the ability to decode and read fluently without comprehension – confuses the issues of decoding and comprehension assessment since hyperlexia is almost a savant-type ability. Nation et al., (2006); Reading, (2007); Lanter and Watson, (2008); and Randi et al., (2010) also found this to be true.

Nation, et al., (2006) concluded that reading and comprehension progress in children with ASD follows no predictable patterns. Reading components develop out of step with each other and often not within the same timetable as regular education students. This discontinuity either extends from or contributes to the ASD child’s language development (Nation, et al., 2006; Autismsociety.org, 2007). Many other researchers have concluded that strategies and interventions that work with one child may not work for another (Chandler-Olcott & Kluth, 2009; Bridges, Cain, Hogan & Justice, 2011; Crosland & Dunlap, 2012).

Speech-Language Pathologists were shouldering most of the responsibility for ASD students in the first decade of the 21st century (Lance, Beverly, Evans, & McCullough, 2003). With the signing of The No Child Left Behind Act of 2001, a systematic process called Evidence-Based Practices (EBP) was begun to compile a toolbox of strategies and modalities that would be effective for all students anywhere on the autism spectrum. Many articles and websites use the terms “evidence-based” and “research-based” without the underlying scientific support these terms call for, however (Simpson, 2005). Therefore, judging the efficacy of different methods and strategies is difficult when there is no clear-cut definition of terms or standards of research and the

In their review of services and strategies used with ASD students in the Georgia school system, Hess et al., (2008) found that less than 10% of the interventions and strategies reported being used by the 185 teachers polled were evidence based. Teachers used what they could find or come up with to educate the children with ASD and there appeared to be no “best practice” guidelines in place (Filliter, 2012).

Components of Reading Instruction

Whether to teach reading as a whole-word approach or as a function of phonics is an issue in the regular education classroom as well as the special education one. Lance et al. (2003) recognized the complexity of teaching reading to children, especially those with any sort of language deficits. Their research shows that letter-sound decoding is an essential skill, but they make no mention of whole word recognition. Pikulski and Chard (2005) found that phonics must be put aside at times, especially to teach high frequency non-standard words such as the, was, and have. Lanter and Watson (2008) lament the lack of evidence-based practices in this area but still promote phonetic awareness because this strategy targets obvious deficits in students’ literacy skills.

Phonemic awareness and phonics. According to Crosland and Dunlap (2012), phonics and phonemic awareness are the most basic foundation for reading instruction and eventual comprehension. Phonemic awareness deals with the connection between letters and sounds. It is often the beginning step toward learning to read. Phonemic Awareness and phonics are as important for students with ASD as for those without (Lanter & Watson, 2008). Phonics and word study may empower students to become
more flexible at decoding unknown words. However, advanced word study is appropriate for only a small percentage of students with ASD, will show little immediate improvement in reading comprehensions, and must be part of a larger more complex effort to teach comprehension (Roberts, Torgesen, Boardman, & Scammacca, 2008).

**Non-word decoding.** Decoding nonsense words takes advantage of the ASD student’s ability to decode even without comprehending. Nation et al. (2006) found no explanation for why some ASD students could decode both actual and nonsense words equally well and other ASD students had immense trouble with nonsense word decoding, despite the great variety of student IQs and reading comprehension abilities. Decoding nonsense words did not appear to affect a student’s ability to read or comprehend. While this is a valuable activity when teaching phonics, decoding nonsense words is a poor use of time when it comes to teaching reading comprehension. Again, hyperlexia can give the illusion of fluency when no comprehension is present (Gately, 2008).

In assessing decoding skills of early readers, Nation et al. (2006) found that 64% of the 32 children with ASD they studied had considerably more trouble decoding nonsense words than actual words. For example, words such as “bun” and “sit” are more easily decoded than “fud” and “rin.”

**Word recognition.** Knowing a word on sight, and not having to take the time to decode it, takes advantage of the visual spatial skills of some students with ASD (Mitchell, 2004). O’Connor and Klein (2004) observed that the ability to read and comprehend single words was obtainable for many children with ASD, as long as the words were concrete nouns. Recognition of key foundational words and frequently used words will allow the ASD student to feel achievement and confidence, and improve
reading fluency, which can precede comprehension (Roberts, et al., 2008; Spector, 2011). Knowledge of sight words enables readers to have access to practical words such as those on signs, labels, and instructions. This approach must be balanced with knowledge of phonics and how to decode unfamiliar words (Spector, 2011).

These strategies go along with teaching students to read nonstandard high frequency words. Even though the students do much better with concrete nouns when it comes to whole word recognition, the skill can also at times be transferred to use words like the, was, and have.

**Colored film overlays.** The technique of using colored film or overlays on a written page of text can make the words easier to read for about 50% of typical children in mainstream schools. Children with ASD benefit even more according to research by Church, 1995; Wilkins, Lewis, Smith, Rowland, and Tweedie, 2001; and Glosser, 1991. Children most helped by the colored overlay method are those children who are relatively poor readers regardless of the disability. Colored overlays seem to make a big difference after the first ten minutes of continuous reading when the visual fatigue sets in (Church, 1995; Wilkins et al., 2001; Glosser, 1991).

No specific color of overlay works for each child. Researchers were careful to take into consideration the fact that the children may give certain answers just to please the researchers so the research was set up using several colors of overlay as well as grays and clear. Some overlays were stamped with words such as “test” and the children were told that no one had ever used these overlays before (Church, 1995; Wilkins et al., 2001; and Glosser, 1991).
Children repeatedly chose specific colors that enabled them to be able to read more fluently. When children were given random colored overlays, the performance stayed constant only with the color the child chose. This color choice had nothing to do with a child’s preferred color but instead with the child’s ability to read fluently for a longer period.

Nearly half (47%) of the children tested two months after continued to perform better with the overlays than without the overlays. Repeated studies using various colored overlays found different children preferred different colors and no “best” color existed for a specific type of disability or to correct a specific problem area (Church, 1995, Wilkins et al., 2001, Glosser, 1991).

**Cloze.** Cloze activities are those that require a child to fill in the blanks of a paragraph after reading a selection. The child may be given a word list from which to choose. While performing cloze tasks, the student chooses an appropriate word to complete a sentence. This concrete activity allows the student to refer back to the text for information and should demonstrate comprehension of the text. However, cloze activities made little difference to comprehension, according to O’Connor et al., (2004). Completing cloze statements requires a clear understanding of the passage. Students with ASD do not often monitor for their own understanding, and therefore frequently fill in cloze statements incorrectly.

**Activating prior knowledge.** Being able to activate prior knowledge is a skill lacking in many children with ASD (O’Connor et al., 2004). In these cases, the general education knowledge is there, but the child has a difficult time accessing it for reading comprehension purposes. Generating and answering questions is one tool educators use
to activate prior knowledge (Gately, 2008). Roberts, et al. (2008) suggest spending five minutes before reading in previewing the text, headlines, charts and organizers, and photos, and revisiting these landmarks post-reading. Lanter and Watson (2008) suggest correcting and building upon background knowledge as a pre-reading strategy to increase comprehension.

According to the O’Connor (2004) study, pre-reading questions aided those students who had more comprehension ability to begin with. However, pre-reading questions can activate prior knowledge that is faulty. This makes comprehension more difficult when one cannot choose between prior faulty knowledge and new correct knowledge. Faulty prior knowledge also seems to be much stronger than new correct knowledge learned during the reading act (Gately, 2008; Chiang & Lin, 2007).

Fluency. Pikulski and Chard (2005) focused on fluency as the bridge between learning to decode words and having reading comprehension. Ten years prior, Pinell, Pikulski, Wixson, Campbell, Gough, and Beatty (1995) concluded from their study (using a non-disclosed representative sample of 1,136 fourth-grade regular education students) that there is a definite relationship between reading fluency and reading comprehension. This finding is supported by a meta-analysis by the National Assessment of Educational Progress in Reading panel (Pikulski and Chard, 2005). While reading comprehension and the relationship between fluency and comprehension are very complex, fluency is a skill to be cultivated for its contributions to comprehension (Pikulski & Chard, 2005).

Fluency is often a hallmark of a “good” reader and many assume that comprehension naturally follows fluency. In the case of children with ASD, however,
there may be no connection between fluent reading aloud and reading comprehension (Nation et al., 2006; Reading, 2007; Lanter & Watson, 2008; Randi et al., 2010). Again, hyperlexia can give the illusion of reading comprehension fluency when no comprehension is present (Gately, 2008).

**Assessing comprehension.** Assessing reading comprehension is as difficult a task as teaching reading comprehension (Roberts et al., 2008), and assessments for students with ASD must be highly individualized to be of value. Simpson, Spencer, Button, and Rendon (2007) had a teacher in a small class (N = 11) conduct individualized student assessments for one school year and documented increases in reading comprehension between 6 and 24 months; the teacher in this study had the assistance of three paraprofessionals. Spector (2011) voices concerns about the validity of running true baselines on students with ASD since their abilities cover such an extreme range. There must be a consistent set of guidelines to recording improvement and reporting results in order to add to the store of evidence-based practices.

**Anaphoric cuing.** Anaphoric cueing is the act of referring back to an earlier part of the text to understand the current part or the pronoun being used. Students with ASD often lack the knowledge to recall the referred to information (O’Connor & Klein, 2004; Chavez-Brown et al., 2005; Chiang & Lin, 2007; and Randi et al., 2010). In the O’Connor 2004 study, anaphoric cuing significantly increased reading comprehension as measured by correct pronoun identification and retell (2004). Chavez-Brown et al., (2005) worked with four preschool children with autism in their study of the whether using simplified verbal statements or typical verbal statements aided the children in identifying antecedents correctly; they found no differences. Chiang and Lin, 2007, and
Randi et al., 2010 found that anaphoric and referent cueing could facilitate text comprehension.

**Guided reading focused on a shared story.** Being able to maintain a joint focus around a shared storybook is key to building a child’s understanding of narrative structure and to learning skills such as making inferences, according to Bridges et al., (2011). The authors also found that children preschool through third grade were able to make inferences when they experienced a storybook together and were able to be a part of the discussion of the story. Answering the teacher’s questions aided the children to infer emotions and motivations (Bridges, et al., 2011).

In Simpson, et al., (2007), a year-long experience using guided reading was examined with a class of 11 children of average intelligence on the Autism Spectrum. These students were taught in small groups by a staff of four, and showed marked improvement in reading skills and comprehension. This nearly ideal situation would be hard to duplicate in a regular public school setting, but the progress was encouraging.

**Limiting Study to ASD Children**

O’Connor and Klein’s (2004) study appears to be the first study regarding the effectiveness of strategies on the reading comprehension skills of students with ASD. Up until this study, research included children with Down Syndrome, brain injury, and mental retardation in addition to children with ASD. Chiang and Lin (2007) found that much of the research conducted regarding children with reading comprehension difficulties did not even include children on the autism spectrum, and those that did included children with Asperger’s or with high-functioning children with ASD. Therefore, these results are not generalizable to all children on the spectrum.
Chapter 3: Results

General education teachers are challenged daily with educating children who are on the autism spectrum. While federal programs like No Child Left Behind would like to see evidence-based practices used in the classrooms, studies I have examined have been unable to demonstrate predictable patterns in reading comprehension acquisition. Many studies suffer from small student numbers and are, consequently, not easily generalized to a larger population. In addition, because of the highly variable nature of the disorder, instruction must be individualized for each child.

There appears to be no demonstrable relationship between a child’s intelligence and his or her ability to decode words, or to comprehend the words. Positive reinforcement is difficult to provide because the things that interest many normal children hold either no interest or are a discomfort for children with autism.

Table 1 itemizes the various reading interventions by level of effectiveness as identified by study results. The most promising environment in which to teach reading to children with ASD appears to utilize one-to-one direct instruction accompanied by practice. Additionally, placement in a small classroom setting for an opportunity, regardless of language abilities, to partake in a discussion regarding a story or a portion of text is beneficial. The literature suggests that participating in class discussions, regardless of oral language abilities, increases comprehension of students with ASD.

Many researchers declared that phonemic awareness and phonics are essential for acquiring decoding skills. Decoding leads to reading which leads to fluency and hopefully comprehension. However, there is no predictable pattern with ASD children and fluency is often paired with complete in comprehension of the text. Decoding non-
words is an exercise in phonics but is a poor use of time with ASD children, since comprehension involves decoding and understanding actual words. If the student can decode words, then word study such as exchanging onset and rimes to make new words may be helpful. However, only a small percentage of ASD children benefit from any advanced word study.

**Table 1**

ASD reading strategies in order of effectiveness.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Authors</th>
<th>Positive Outcomes</th>
<th>Study Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most effective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guided Reading</td>
<td>Bridges, et al., 2011, Simpson, et al., 2004</td>
<td>Children receive individual attention, direct instruction in inferring and anaphoric cuing, were involved in group discussions regardless of oral abilities</td>
<td>Class of 11 children with 1 teacher and 3 paraprofessionals, would not be able to replicate this situation in a public school</td>
</tr>
<tr>
<td>Phonics and phonemic awareness</td>
<td>Lance, et al., 2003</td>
<td>Essential reading skill</td>
<td>No comprehension taught or assessed.</td>
</tr>
<tr>
<td>Sight words/whole words</td>
<td>Pikulski &amp; Chard, 2005</td>
<td>Takes advantage of child's visual skills, children could use the words in a practical way (labels, signs), child didn't have to use time to decode a nonstandard word, skill obtainable for many ASD children</td>
<td>Doesn't teach decoding skills, works best with concrete nouns or frequently used words (stop).</td>
</tr>
<tr>
<td>Colored overlays</td>
<td>Church, 1995, Wilkins, et al., 2001, Glosser 1991</td>
<td>Improves tracking and reading by 50%, eases visual fatigue that plagues poor readers</td>
<td></td>
</tr>
</tbody>
</table>

*Table 1 continues*
### Table 1 continued

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td><strong>Most effective</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activate prior knowledge</td>
<td>O'Connor, et al., 2004, Gately, 2008, Roberts, et al., 2008, Lanter &amp; Watson, 2005, Chiang &amp; Lin, 2007</td>
<td>Has been shown to increase reading comprehension,</td>
<td>Difficult to correct faulty prior knowledge</td>
</tr>
<tr>
<td><strong>Moderately effective</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generating and answering questions</td>
<td>Gately, 2008</td>
<td>Generalized improvement in comprehension</td>
<td>No quantifiable data from study.</td>
</tr>
<tr>
<td>Neurological impress</td>
<td>Heckleman, 1969</td>
<td>An early attempt at teaching reading</td>
<td>No baseline, no comprehension or decoding skills taught</td>
</tr>
<tr>
<td>Word study</td>
<td>Roberts, et al., 2008</td>
<td>Students can generalize phonics rules from one set of words to another</td>
<td>Has no effect on reading comprehension</td>
</tr>
<tr>
<td><strong>Least effective</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-word decoding</td>
<td>Nation, et al., 2006</td>
<td>Student can use phonics skills</td>
<td>Has no effect on reading comprehension</td>
</tr>
<tr>
<td>Cloze activities</td>
<td>O'Connor, et al., 2004</td>
<td></td>
<td>Requires a clear understanding of the text, makes no appreciable difference in comprehension</td>
</tr>
</tbody>
</table>

Whole words or sight words take advantage of some ASD children’s visual learning abilities. Concrete nouns like “milk” and “sleep” or frequently encountered words like “stop” and “restroom” have a real place in a child’s life and may be retained and comprehended. If the child is able to read using phonics to decode, then teaching sight words such as “have” and “was” will help the child in the area of fluency, which may lead to comprehension.
Anaphoric cuing is a skill that has proved significantly helpful to children who can read and comprehend but lose track of information in the text. Anaphoric cuing helps the child to find to what words the pronouns are referring, such as “he,” “she” and “it.” Anaphoric cuing will also remind the student of what has gone on earlier in the story or text so new information can be related to prior information.

Colored overlays are a technical aid that has also shown to improve comprehension significantly. This entails using a strip of colored plastic over the line of text. This both works as a place-keeper and as a way to battle visual fatigue that plagues many students with reading difficulties, both ASD and otherwise.

Prior knowledge in general in another area that will assist the student with ASD if he or she is able to activate it and the information is correct to begin with. Children with ASD are especially reluctant to give up faulty knowledge in exchange for current correct knowledge.

Cloze activities which involve reading a passage and then filling in the blanks with the appropriate word have not been found to improve reading comprehension. Although fluency has been found to improve comprehension in regular education children, it does not have the same effect on children with ASD. Children with ASD can be quite fluent with no corresponding comprehension. This is referred to as hyperlexia.
Chapter 4: Discussion and Summary

I began this paper hoping to find effective practices and interventions that would enable me to help teach reading and comprehension to children with Autism Spectrum Disorder. This stems from a professional need, but also from the fact that I have a 20-year-old nephew who has very little oral language and little social skill, yet he can read aloud fluently and understand some of what he reads.

Through my research, I found many articles involving ASD and implications for reading, decoding, and comprehension. A common theme throughout the studies was that instruction must be individualized and no single method will work for every child. Most research has focused on children on the high end of the spectrum: those who have decent oral language skills and sufficient social skills to interact with teachers and classmates. Additionally, much of the published research has utilized very small numbers, on some cases only one or a few children. Other studies included children with ASD as well as other conditions such as brain injuries, Down Syndrome, or learning disorders. These individuals cannot be uniformly grouped with children with ASD and need specific studies that pertain to their unique issues of communication problems, language deficits, and social and interpersonal unease. With the autism spectrum being so broad and each child manifesting the disorder differently, it is not yet possible to identify instructional methods to measure ability and progress, and establish consistent baselines and guidelines that work broadly across the spectrum.

I have come away from my study with the conclusion that each child with ASD must be assessed carefully. Time must be taken to patiently try different methods and
strategies, and to find what motivates the child, whether it is a special interest or a reward.

The best environment for development seems to be individual instruction or very small groups for direct instruction. Social interaction in the form of sharing information and discussing must be modeled and encouraged, even for those children without oral language. Personal observation and supporting studies have alluded that children with ASD often crave friends and companionship even though they may seem unaware of the people around them.

As a teacher, my role is to prepare each child, including children with ASD, for a fulfilling useful life. This study demonstrates that there is no single intervention or modality that works with all, or even most, students with ASD. But, any amount of reading comprehension advancement will enhance an individual’s life in the areas of acquiring information, living safely in society, or just participating in the activity of classroom education.
References


