Enhancing Reading Comprehension for Students with Autism

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Abstract

This study examined the impact priming has on answering “right there” questions following the QAR frameworks for students with autism. Research was conducted in a 12:1:4 middle school classroom where the curriculum focuses on life skills instruction. Data was collected through a student questionnaire, parent conversation, classroom observations, and three individual work sessions with the student. The data shows priming to be a successful strategy to increase reading comprehension. A surprising discovery was when introducing new material to the student with autism, explicit/direct instruction across settings greatly impacted the student’s performance. Through the review of the literature and the findings of this case study, three themes emerged: student dependence, phrasing and the importance of structure in the reading process for students with autism.
Enhancing Reading Comprehension for Students with Autism

Reading is a cognitive process. Basic to the process is the understanding that what can be said can be written down and then read again by the author or by someone else. Once students grasp this concept, they then can begin an understanding of print and the skills to decipher the code and turn it back into speech. Readers, at all levels, bring their own knowledge and experience to the task of reading and comprehending what is read. Oral language and background knowledge are important resources that readers use to decode print and make sense of the message. One goal of reading is to make meaning of text. Often times struggling readers have difficulty creating meaning from the printed word. The ability to create meaning can be a significant struggle for the student with autism.

Reading Comprehension involves the ability to actively construct meaning from print. Reading comprehension can be a challenge for many children with Autism Spectrum Disorders, as these children have been shown to have difficulty integrating language and social messages and interpreting emotions and emotional intent (Gately, 2008). Deficits in the development of certain language skills may occur, particularly in the area of comprehension of higher-level more complex discourse, which in turn, can affect reading comprehension ability. Comprehension skills are necessary for all students to develop the literacy skills they need to succeed at work, home and in their community.

I have worked in special education for the past ten years. The first seven years as a 1:1 paraprofessional in a variety of classroom setting (self-contained, general education and parallel curriculum within a general education setting) I have acquired a good working knowledge of autism and autism spectrum disorders as a result. Mirenda, (2003) defines Autism as a pervasive developmental disorder marked by differences in the domains of communication, socialization
and repetitive behaviors. Individuals with autism can exhibit varying degrees in each of these areas. This umbrella of disorders includes Aspergers, Autism and Pervasive Developmental Disorder aka (PDD) and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). Three years ago I was hired as a special education teacher for a 12:1:4 (self-contained) classroom. Through my work I have found it common for children on the autism spectrum to have difficulty with comprehending not only what is said in conversations, but also what they read in a text. Typically, my students can read the words on the page, but struggle with comprehending what they have read. This study will focus on reading comprehension supports for students diagnosed with an autism spectrum disorder.

To identify effective ways to support literacy learning for children with autism, components of the reading process and teaching methods must be examined. Because autism is a spectrum disorder it is difficult to develop a particular set of learning characteristics and a specific method that will meet the needs of all students with autism. Teaching methods in literacy learning that can be readily modified to meet the individual needs of children with autism and give wide discretion to teacher decision-making are more likely to be successful.

The overall purpose of this study is to identify the impact targeted comprehension strategies have on a student’s ability to comprehend text at a literal level. Chandler-Olcott and Kluth (2009) have found the classroom to be a unique context for learning and exerts a profound effect on students’ development of language and literacy skills. Furthermore, Mirenda (2009) strongly argues that students should have significant opportunities to integrate oral and written language in the classroom, because these experiences support and encourage the development of literacy.
In this case study, I argue that essential strategies in comprehension instruction should include explicit instruction. Furthermore, I believe strategies should include building background knowledge/priming, QAR, anaphoric cueing and computer assisted instruction. A review of the literature will show all are effective reading strategies needed to support reading comprehension in students with ASD. One of my goals for students within the 12:1:4 classroom is independence. Independence can be shown in many ways for students with autism and include the ability, read a menu, schedule, recipe directions as well as text for information and or enjoyment.

My action research study focused on one student with significant cognitive delays a special education classroom and one special education teacher. The time with the student included four individual work sessions as well as direct observation during a special class reading lesson and a whole class observation to observe the student navigate both educationally as well as socially in the classroom setting. The analysis of the data collected was used to understand the benefits of using priming when introducing right there questions and the (Question and Response) strategy. My research suggests priming can benefit a student with autism as it helps to activate background knowledge, introduce new vocabulary, and pre-teach information to the student. In addition, the benefits of direct instruction set the stage for students as it took away all the unknowns for the student prior to beginning the lesson. All the unknowns were answered for the student: when we would be working, who I would be working with, how long I would be working and what I had to do. Finally, by increasing comprehension skills, we increase independence for the student with autism.
Theoretical Framework

Sociocultural theorist claim that literacy occurs through interaction with others (Kucer, 2005). This is true for the student with autism as well. A literate person can create and share meaning, and apply that knowledge to a functional purpose or goal that requires the use of spoken and/or written language skills. To balance that claim he states acquisition of discourse is impacted by “serious disorders” (Gee, 2001 p. 22). Gee’s writings speak directly to the cognitive deficits and developmental delays which are autism. In addition, Gee (2005) defines literacy as “Fluent control of secondary discourses” (p529). He claims that, Discourses are not just ways of talking, but ways of talking, acting, thinking, valuing, etc. Within various levels of developmental ability, a literate person can obtain and express meaning, and use their knowledge to achieve a desired purpose or goal that requires the use of language skills, be they spoken or written. A literate person can mediate their world by deliberately orchestrating meaning from one linguistic knowledge base and apply or connect it to another knowledge base. For example, knowing that letters symbolize sounds, and that those sounds form words to which the reader can attach meaning, is an example of the cognitive orchestration of knowledge, a literate person conducts. Students with autism must construct meaning using all available signs within their culture, including, visual, auditory and sensory signs. To become literate students with autism must develop an awareness of varied texts and be able to apply what they have learned in different context. The ability to comprehend and apply (in different context) what has been learned is difficult for the student with autism. Students must possess the ability to understand how social and cultural ways of being and doing affect how meaning in construed and applied (Gee, 2005). The ability to apply in different context (settings) is a skill that must be explicitly taught and provided much repetition.
Literacy is more than reading and writing; it is how we communicate as a society. Larson and Marsh (2005) state that literacy is a social practice. Support for that statement is also found in the Barton’s writings (2000) that claim the idea that literacy is grounded in social, cultural, historical and political practices, is the framework from which literacy is acquired. Literacy by its own definition is who we are; our own linguistic DNA. Literacy skills allow us to participate in society. Goodman (2001) affirms, a child who is born into a literate society is literate. These frameworks are at the very core of the deficits students on the autism spectrum struggle with daily. One challenge in providing effective reading comprehension instruction for students with autism is [in part] due to uniqueness of the disability itself. Social, cultural, historical and political practices for students with moderate to severe cognitive abilities are often displayed in a distinctive yet rote manner. Autism shows symptoms of language, cognitive, or other developmental delays. In addition, many students display impaired ability to understand cause and affect relationships and to draw inferences, and most have difficulty with language comprehension, often associated with academic language across the content areas, and the social use of language. Students on the autism spectrum often struggle in classrooms due to their literal, concrete thinking and difficulty understanding what they have read, especially if it requires making inferences rather than just literal understanding. The end result is a set of learned practices with little meaning to the student.

Socio-cultural theory is built upon the belief that the power to use language is an aid to thinking. Larson & Marsh (2005) describe sociocultural theory as “a tool for interpreting what people from different communities do, not simply what they do not do.” (p.101) For the autistic student we can explain this by keeping an open mind when viewing something out of what may be considered “normal.” Paolo Freire’s (1987) shared, “Only when problems can be identified
in spoken language can you progress towards the written word (p. 33). Through dialogue, causes as well as effects can be examined, followed by possibilities for action. The written word is introduced to organize students’ thoughts. Writing words for ideas will allow students the freedom to communicate their thoughts and insights. With the ultimate goal of increased comprehension skills, students with autism can change their world from one of dependence to independence.

Being literate requires constant change and adaptation. Luke and Freebody (1999) refer to literacy as a malleable set of cultural practices shaped and reshaped by different, often competing and contending social institutions, social classes, and cultural interests. Those who are literate are able to interact and fulfill the communicative and social demands of a specific instance, at a specific time, for a specific purpose, and can adapt for the next requirement of the next instance. The focus of this research will center on one student’s ability to respond to questions given support.

As suggested by McDermott and Varenne (1995), Culture as a disability claims culture not only provides its members with knowledge and tools for survival and growth, but it is also sets the standards for defining deficits in students within the educational system. Our society defines the norm in a clear system of measures; the very same system stigmatizes those who fall short. Autism presents difficult educational challenges to all teachers (Chandler-Olcott and Kluth, 2009) and segregates some people from equally participating in our society. However, studies on autism spectrum disorders indicate that when children with autism are exposed to primary educational programs starting as early as 2 to 3 years of age, autistic children can improve on their academic work skills (Whalon and Hart 2010). Marginalizing these participants does not enhance our society it limits it.
Literacy does more than allow people to convey information. It can also describe and defines a disability. However, literacy can also provide a platform to talk about disabilities through concepts such as least restrictive environment and inclusionary settings. The idea of a disability is expressed through model standards established by those in power. McDermott and Varenne (1995) note “disabilities are less the property of the persons than they are moments in a cultural focus” (p.326). Language and literacy become one of the fundamental mechanisms that create a culture. For students with autism the developmental and cognitive deficits associated with this disability make it extraordinarily difficult for student to comprehend implied meaning and/or communicate their own thoughts with others within their social groups.

Improving comprehension skills for students with autism should be explicitly taught. Therefore my study will focus on priming and the QAR (Question and Response) Strategy with students. The goal of the study is to look at priming as a pre-teaching strategy prior to presenting right there questions.

**Research Question**

Based on sociocultural theory of literacy acquisition and priming, one can claim that comprehension skills can be enhanced through direct instruction. This action research study questions, how does priming affect the Question and Answer strategy when using right there questions?

**Literature Review**

There are many factors that can impact reading comprehension practices for students with autism. First, I provide a general overview of the struggles students with autism typically encounter in reading comprehension. This literature review will then focus on a set of specific strategies to include the following: priming/background knowledge, anaphoric cueing, and direct
instruction and finishing with the impact computer assisted instruction has on the comprehension process. The research reviewed shows promise that students with autism can improve their reading comprehension with supports and direct instruction.

**Comprehension Struggles for Students on the Spectrum**

All students, including the student with autism must be able to make use of what they read to expand their knowledge in school. Knowledge for the student can include subjects such as social studies, math, and science as well as life skills instruction. All students must be able to understand and make use of the information that they read for a variety of purposes. It is important to understand the definition of autism before outlining specific comprehension strategies. The Individuals with Disabilities Act of 1997 defines autism as follows:

> Autism is a developmental disability significantly affecting verbal and nonverbal communication and social interaction autism is generally evident before age three, which 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. (Saffron, 2008, pp 90-91).

Furthermore, Saffron (2008) claims the number of children diagnosed with autism are underrepresented due to the unidentified number of children on the higher end of the autism spectrum.

Teachers in today’s classrooms are instructing a diverse student population. With more districts following a co-teaching model for instruction teachers will work with students who have a wide variety of skills and abilities included in these co-taught classrooms are students with
autism. Children with autism (CWA) present specific challenges to the standard methods of teaching reading and comprehension because of the ways that they process information (Florez and Ganz 2009; Craig and Sexton –Telfer 2005). A variety of techniques that include the following; comprehension monitoring, retelling, and question and answer have been tested and show promise when teaching children with autism to read. Although these techniques are specific to students with autism, best practice as outlined by Beers (2006) supports utilizing strategies such as providing students with direct instruction in decoding and comprehension strategies that promote independent reading for all students.

The National Reading Panel (2000) was formed in 1997 at the request of Congress. The NRP was a national panel with the stated aim of assessing the effectiveness of different approaches used to teach children to read. The National Reading Panel (2000) and Huemer and Mann (2009) found that comprehension is a stepping stone towards higher level thinking while engaged in the reading process. The National Reading Panel (2000) states proficient readers read to learn. The development of reading skills involves active participation by the part of the child with autism throughout the reading process. The ability to read, and more importantly, comprehend what is read, is absolutely essential to life-long learning. Therefore, learning to read during childhood has a huge impact on the child with autism and his/her ability to read to learn. Included is the process of reading in order to better understand subject- or topic-specific content. In their study, Huemer and Mann (2009) utilized data collected from 384 participants with autism spectrum disorders (ASD) utilizing nine standardized measures for decoding and comprehension. Huemer and Mann (2009) found children with autism show deficits in comprehension skills. They believe the noted deficit in reading comprehension is directly impacted by the process of decoding word by word. In their study, Huemer and Mann (2009)
found that children with autism will [at times] gloss over or substitute a word in the reading process. While this breakdown does not always impact meaning, it can result in misconceptions by children with autism as they struggle to make their words fit the text.

Evidence from studies describes the reading practices of children with autism spectrum disorders as having relative strengths in decoding while struggling with language and reading comprehension Calhoun (2001); Florez & Ganz, (2007); O’Connor and Klein (2004). According to Florez and Ganz (2007), students with autism do understand what they read but cannot effectively express what they know. Children with autism may struggle to answer questions and express ideas in traditional ways. Some students might be unable to find the words needed to answer comprehension questions. Other students may know the words but are unable to answer questions when directly asked to do so.

Chandler-Olcott and Kluth (2009) and Nation, Clarke, Wright, & Williams (2006), believe proficient reading depends on the ability to recognize words quickly and effortlessly. If this is true and reading comprehension is difficult, children with autism will use much of their processing capacity to read word by word. Individual word reading interferes with a students’ ability to comprehend what is read. A number of studies point to the importance of integration of language into text to include; Frith, (2003) poor verbal skills, Mirenda, (2003) and general deficits in communication Nation and Norbury (2005); Tager-Flusberg and Joseph (2003). The implication is clear to truly understand a text the child with autism must be able understand more than single word (in isolation) reading comprehension.

O’Connor and Klein (2004) studied sight word patterns of children with autism. Their findings support what many educators in the classroom observe daily. Children with autism were
as skilled in reading phonetically regular words as their typically developing peers. The reverse was found when children with autism were presented with phonetically irregular also known as nonsense words (O’Connor & Klein, 2004). This information tells us that the phonetic structure of words (for children with autism) appears to be intact. These findings also lend support to a similar study conducted by Florez and Ganz (2007). The study by Florez and Ganz found children with autism demonstrate a working phonetic decoding strategy along with lexical skills for familiar words. These significant studies lend support to Freebody’s (1992) Four Resource Model in Literacy. Freebody (1992) claims; one critical component of a literate individual requires coding competence which is the ability to decode text, i.e. phonics.

According to Huemer and Mann (2009) reading comprehension can be a special challenge for children with autism because of their difficulty with pulling in relevant background knowledge to interpret ambiguities. In a relatively large group study, Huemer and Mann (2009) reviewed data from private, nationwide learning centers specializing in one to one reading instruction. Their findings suggest children with autism (CWA) do not tend to modify information that they take in to fit a particular situation. Rather, they try to make the information fit the situation. Another factor which can impact comprehension is the difficulty autistic children have with perseveration. Perseveration is an uncontrollable action which is repeated over and over again (Chandler-Olcott and Kluth, 2009). Perseveration may include repeating a phrase, shutting a door, twiddling fingers, rubbing hands together, etc. It is almost as if these children are locked into an endless cycle of meaningless, odd behaviors. These repetitive behaviors can interfere with the reading process by trapping the student with autism in a cycle they cannot break independently. In addition, these repetitive behaviors are also a major roadblock to communication with others and keeping the student with autism engaged in the
present world.

Best practices for students with autism require reading instruction to be consistent with the five Pillars of Literacy (Whalon, Al-Otaiba, Delano, 2009). In their studies, Whalon et. al (2009) and O’Connor and Klein, (2004) found that many educators believe that children need to learn to analyze text (comprehend it) even before they can read it on their own, and that comprehension instruction known as the “Whole Language” approach generally begins in pre-Kindergarten or Kindergarten. The research by O’Connor and Klein’s (2004) included exposure to wordless picture books as a baseline for comprehension. Children bring their unique background experiences and perspective to a wordless text. The wordless picture book may be limiting for the student with autism. However, other educators consider this reading approach to be completely backward for very young children, arguing that the children must learn how to decode the words in a story through phonics before they can analyze the story itself “Phonics” approach (Cohen & Cowen 2006). The phonics approach discussed best mirrors the literacy practices of a majority of students with autism.

Hyperlexia is a reading deficit which is often found in students with autism that impacts their ability to comprehend. As defined by Grigorenko, Klin, Pauls, Senft, Hooper, and Volkmar (2002) and Craig & Sexton-Telfer (2005), hyperlexia is the skill, of premature reading abilities, often emerging in preschool years; most children with hyperlexia are diagnosed as PDD or Aspergers. Deficits which occur in the area of comprehension of higher-level more complex discourse, can affect reading comprehension ability of the higher functioning child with autism. Premature reading abilities may also be found in low functioning autistic children (O’Connor & Klein, 2004; Mirenda, 2003). Mirenda (2003) also noted, Hyperlexia is commonly found in children who are considered high functioning. Furthermore, Craig & Sexton-Telfer (2005) noted
a similar ratio [between boys and girls] in the incidence of hyperlexia. In support, Mirenda’s research shows “no significant differences in the frequency of Hyperlexia in girls compared with boys” (p. 274). However, due to the lack of language and communication skills children with autism are unable to express their abilities. Often, a child with hyperlexia will be a very visual learner, a concrete thinker and will have difficulty interacting socially. These students can also struggle with the concept of perceptions. However, due to the lack of language and communication skills children with autism are unable to accurately express their abilities.

Both O’Connor & Klein (2004) and Mirenda (2003) researched the complications associated in assessing the reading ability in children with autism due to their strong word reading skills. The ability to decode can mask deficits in the ability for the child to understand the text (Mirenda, 2003). Without adequate knowledge of accurate reading ability for students with autism, it is difficult to implement comprehension strategies.

Reading comprehension skills can increase when children with autism are exposed to reading interventions that are individualized to meet their needs. The following strategies priming/background knowledge, direct instruction, anaphoric queuing and computer assisted instruction benefit both the teacher and student with both accurate assessment and building comprehension.

**Priming /Background Knowledge**

The influence of background knowledge on academic achievement is fully and firmly documented in research. O’Connor Klein (2004) and Huemer and Mann (2010) examined the impact background knowledge has on a student with autism. Their studies looked at the impact background knowledge has on direct questioning as found in a text. Huemer and Mann (2010)
identified background knowledge as the experience and knowledge that a student brings to classroom learning. In support, O’Connor and Klein (2004) claim students with autism often have considerable difficulty understanding a particular text passage because of deficits in their background knowledge which directly impacts comprehension. Also identified through the research, students with autism have limited use of background knowledge when applying it to text. Therefore, it is essential to give the child with autism as much information and scaffolding before reading as possible to ensure their success. Students with autism are often very good decoders, but struggle to explain what happened in a story or why. The end result is that many educators may be fooled by a student with autism and their comprehension ability. There claim is reinforced through Gately’s findings (2008) that students on the spectrum often lack the ability to perceive the motivation of characters and appreciating their intent which requires higher level comprehension skills (why questions) and may be difficult for children with ASD.

Prior to students with autism beginning to read, they need to know the words and concepts related to the specified topic. Huemer and Mann (2010) argue pre-teaching this content to give them the necessary background and vocabulary is essential to reading success. Additionally, Gately’s (2008) study claims using the strategy of pre-teaching explicit vocabulary provides support to ensure text for the student with autism is easier to understand. The more readers know about a topic, the easier it is to connect the text with background knowledge. What the student already knows (background knowledge) about the subject matter can indicate how well they will learn new information. Tapping into the students’ knowledge will help them become more engaged with the content presented. Huemer and Mann (2010) state many students with disabilities, in particular, need this type of support as these learners are often excluded from the very activities that help students build background knowledge. For the child
with autism the exclusions can include: peer interactions, movies, field trips and or books of little interest to the child.

Priming also known as pre-teaching, is a strategy that introduces students to information prior to their use, it is a time-efficient strategy that helps students who need structure and predictability. In their research, Gardiner, Bowler and Grice (2003) found that students with autism were more likely to falsely recall words that had not explicitly been taught to students. Utilizing the reading strategy of priming will familiarize a child with material before its use; introduces predictability into the information, thereby, reducing stress and anxiety; and increases the child’s success. Priming typically involves showing students with autism the materials that will be used in a lesson during the day or the morning before the activity. It is imperative that the actual materials that are going to be used are review with the student. Priming may include looking through a book, skimming though a test, or showing the student a sample of a final product. Priming is easy to use and involves minimal time.

Most published studies have reported normal semantic priming effects Lopez and Leekman, (2003); Gately, (2008). In their study Lopez and Leekam (2003) found that, just like typically developing children, those with autism read words more rapidly when it follows an appropriate context word. One example, they were quicker to read the word jug if it followed the word kitchen rather than the word garden. The semantic priming of information lends itself to the concept reiterated by Gately (2008) of teaching vocabulary within the context it will be used for the student.

When a child with autism does not comprehend an idea or a concept prior to reading, mapping strategies [concept, semantic] have been found to be beneficial. Concept mapping is
essentially a you already know visual that the student can refer back to if they become lost. In their research Roberts and Joiner (2007) found an increase in pupil performance after reviewing subject-specific questionnaires completed by a group of eight graders. Their findings showed an increase (four times greater) in the concept mapping condition than after a more conventional teaching intervention. Their study suggests a positive outcome for the student with autism to retain and recall pertinent information after a concept mapping intervention. When presented with a key concept the student with autism can write down through words or pictures everything they already know about a topic. Thus enhancing opportunities to activate prior knowledge of words by build meaning for the words related to the concept. In addition, concept mapping allows for repetition of key ideas to be reinforced as stated by Dickerson & Calhoun (2005). Sequential mapping is essentially a “who did what” map or list that the student can refer back to if they become lost in a text. Rupley (2009) studied through his direct observation of students with autism the benefits of utilizing graphic organizers. Graphic organizers are a concrete example of sequence maps that children with autism find success using. Graphic organizers support the ability to identify basic story structures for students (using words or pictures). Children with autism often have difficulty pulling information forward and sharing what they know. Routinely these students respond well to the visual supports (graphic organizers) utilized by them.

As discussed earlier a child with autism often has limited interests as well as perseverating behaviors. These two factors can greatly impact background knowledge as well as misconceptions regarding a topic. In their studies Basil and Reyes, (2003); Whalon and Hart (2010) researched traditional instruction within the general education setting. Whalon and Hart (2010) found identifying misconceptions may be easy; altering the opinions of the child with
autism will be difficult. Children with autism are black and white thinkers. This literal thinking is difficult as most of our daily language falls into the gray category. These children have a significant difficulty being flexible and adaptable.

Through her research Susan Gately (2008) identifies several reading strategies to help students with autism become better readers. Her strategies include use of direct instruction, anaphoric cueing as well as prime background knowledge. Gately argues, “When children are given pertinent, accurate background knowledge, reading comprehension is enhanced” (41). Priming and background knowledge have been found to be beneficial to the overall comprehension skills of the student with autism.

**Direct Instruction**

A proven researched method for facilitating reading comprehension includes explicit/direct instruction. Explicit [Direct] instruction is “about making the hidden obvious; exposing and explaining what is taken for granted; demystifying the mental process; letting children in on the information and strategies which will enable them to become powerful literacy users” (Rupley,2009, p. 121). Children with autism must have within text reading strategies if they are going to be able to read independently.

For some children, reading comprehension strategies such as answering “right there” questions come naturally. However others, particularly children with autism, may need specific instruction in these strategies. In 2009 Coyne, Zipoli et.al, found by utilizing both the Story Read Aloud Program and the Embedded Story Structure comprehension can be enhanced among students with autism. The Story Read Aloud Program utilized [successfully] repeated think aloud strategies by the teacher. Furthermore, they claim students with autism would benefit from “repeated, authentic learning opportunities” (p. 238). In addition, Coyne, Zipoli et. al, studied
the impact of using the embedded story structure strategy of questioning in a heterogeneous ninth grade class over a two week period. Significant gains were made in the area of comprehension by the ninth graders. Reading research supports the teaching of Explicit [Direct] instruction as a critical component in the reading comprehension process for all readers.

Flores and Ganz (2007) completed a study focusing on whether or not direct instruction would have any effect on students’ ability to use facts, analogies and make inferences. Their research focused students using a direct instruction program called "Corrective Reading Thinking Basics Comprehension Level A." (p. 247). Flores and Ganz (2007) found that all students improved their ability to use facts, make inferences and complete analogies as a result of the direction instruction program. Similarly, Rupley (2009) reinforced the focus on direct instruction for students with autism with a concentration on the five instructional areas of reading as identified in the National Reading Panel Report (2000) can be successful.

One disadvantage confronting students with autism found when using the direct-instruction approach students tend to have difficulty in generalizing the skill attained. Nation et al (2006) found that each stable social environment (e.g., classroom, workplace) represents an individualized set of local norms for socially appropriate and facilitative behavior. By directly teaching skills outside the context of these norms, teachers significantly reduce the probability that the skills will be naturally reinforced resulting in the student with autism unable to generalize the information learned.

Nation, Phil, Norbury and Frazier (2005) state students can gain the ability to independently make connections to skills through direct instruction. Nation et al. (2005) studied the QAR technique as a direct instruction strategy used to identify the kind of response
necessary to answer a question and make connections. Nation et al. (2005) found that because questions are the most prevalent means of evaluating comprehension, this strategy facilitates comprehension and increases a student’s ability to participate in discussions. The chance for increased reading comprehension is the primary goal. The importance of knowing success as well as feeling confident in school gives the student with autism reason to strive and achieve their goals throughout life. The QAR technique is used to identify the kind of response necessary to answer a question. The QAR can also be helpful for students with autism by providing visual cues to support students and to encourage generalization and the independent use of this strategy.

QAR strategies allow teachers to prime, reinforce and provide a management support system for the student with autism. By conducting face-to-face interviews with educators, Raphael and Au (2006) found that teachers often have difficulty in making changes to their instruction. Typically teachers focus on lower level thinking questions also known as closed questions. Raphael and Au (2006) suggest the QAR will provide a framework from which “teachers may facilitate closing the literacy achievement gap” (p. 208). The QAR is a way to help students realize that the answers they seek are related to the type of question that is asked; it encourages them to be strategic about their search for answers based on an awareness of what different types of questions look for. Raphael & Au (2005) identify two types of QAR questions in the book questions can be right there (i.e., declarative; the answer can be found explicitly stated in the text). The findings of Raphael and Au (2006) should serve as a guide for teachers supporting different age levels and abilities benefit from different amounts and types of QAR instruction.
The QAR appears to be a good strategy for students with autism due to the direct teaching and priming needed to acquire background knowledge. Whalon and Hart (2001) looked at the impact Question and Answer (QAR) would have on the reading comprehension abilities for the child with autism. The study looked at the concepts and details represented in pictures as a support for higher level comprehension skills. Whalon and Hart (2001) findings are consistent with Nation et al. (2005) and suggest that children with autism can benefit from QAR instruction which is consistent with the National Reading Panel recommendations. Question-and-answer relationships (QAR), is a specific National Reading Panel (2000) backed strategy, using research-based instructional supports. Furthermore, their findings support teaching QARs to students with autism can help with them understand the core notion: when confronted with a question; the answer will come either from the text or from what the student already knows. Priming or background knowledge provides students with background information and experience with the concepts prior to beginning the reading process primes the brain to anticipate critical features or ideas that will be confronted. Additionally, Whalon and Hart (2001) suggest a positive impact when educators provide qualitative reinforcement to encourage good strategies when student use them. Finally, a solid management support system consisting of visuals and possible sentence strips may be required to facilitate oral comprehension for the student with autism. The QAR strategy incorporates priming and reinforcing; it also allows for management support systems to support student success in comprehension. The QAR has been found responsive in meeting the learning needs of students with ASD.

When introducing students with autism to the question-generation strategy, the researchers Whalon and Hart (2001) suggest using informational (concrete) text. Their study focused on an inclusive fifth grade classroom social studies class and the use of informational
text. The result is a greater ability for the students with autism to recall factual information. This is a direct link to earlier findings by Basil and Reyes (2003), Lawson et al (2004) and Dickerson and Calhoun (2005) and the autistic student’s ability to organize concrete information. Furthermore, Whalon and Hart (2001) also believe students with autism may respond best when introduced initially to a two category distinction of sources of information: the book or story just completed, and the reader’s background knowledge.

In addition, implementing a management support system that is beneficial to the student with autism is encouraged. Supports as defined by Chandler-Olcott and Kluth (2009) can include visual cues, self-monitoring checklists, and generic questions are recommended. Such management supports facilitate learning of the new strategy and produce greater gains than when instruction lacks these management supports (Gately 2008). Additionally, visual cues, self-monitoring, and scripts are all management supports and instructional tools that have assisted children with ASD in learning a variety of communication skills. Students with autism may respond best when introduced initially to a two category distinction of sources of information: the book or story just completed, and the reader’s background knowledge. Therefore, middle schools students (with autism) may benefit from a more extensive use of the QAR system.

To generate a question about text, students with autism must identify the main ideas and demonstrate an understanding of content (Whalon and Hart 2010). As a result educators can use student-generated questions about text to monitor reading comprehension. The QAR is a proven direct instruction strategy which will provide opportunities to increase reading comprehension for the student with autism.

Anaphoric Cueing
We use language daily to communicate our wants and needs. Once wants and needs have been identified they can be referred to through certain language rules. These rules include anaphors. The importance of anaphors is clear; anaphors appear frequently in text and spoken dialog. Some examples of anaphors are *he, they, them, him* and *her*. Garcia-Perez (2008) and Tager-Flusberg (1990) claim most natural language processing applications must resolve anaphors. Therefore, in order for the student with autism to make meaning from a text anaphoric cueing must be resolved.

In 2008, Garcia-Perez, looked at the ability of children with autism to shift their psychological perspectives of different people when reading narrative text. They found students with autism understood the task and could adjust the narratives. However, their study found that students with autism struggled when required to adopt a different perspective and shifting among complimentary viewpoints when pronouns were used in a text. In an earlier study Tager-Flusberg (1990) researched anaphoric cueing supports anaphoric cueing supports for the child with autism. The study focused on identifying words in the text that reference words previously used in the text (little *girl/she*). In specific a focus on pronouns which reference a person who was discussed earlier in a text. Their findings suggest instruction for anaphoric cueing should be direct in nature for the child with autism. In her research Garcia-Perez (2008) found direct teacher modeling, pausing at the anaphor and directly relating back to the original reference will help children with autism make connections between the different parts of the text. Specifically, when the reader comes across the word “she”, the student would ask themselves, “Who is she?” and check back through the previous sentence or paragraph to figure out what noun is connected to the word “she.”
In 2004, O'Connor and Klein as previously discussed, investigated the impact of pre-reading, anaphoric cueing and the cloze procedure. In their study anaphoric cueing was the only strategy which had significant impact on the reading comprehension of students with autism. The anaphoric cueing effects were statistically significant, rereading questions and cloze completions showed a lesser impact on comprehension. O'Connor and Klein (2004) found that anaphoric cueing introduced students to the concept of self monitoring, which is essential in reading comprehension. Anaphoric cueing also had a strong impact on students post-reading comprehension.

When looking at anaphoric cueing one must also look at the autistic child and Theory of Mind. In order to understand a variety of reading texts, such as fiction, the reader must have an adequate understanding of other people. Theory of Mind refers to the belief that many autistic individuals do not understand that other people have their own plans, thoughts, and points of view. In their study, Kaland, Moller-Nielsen, Callesen, Mortensen, Gottlieb, & Smith, (2002) assessed the abilities of adolescents to infer physical viruses mental states using “stories from everyday life. The researchers claim that children with autism have difficulty understanding other people's beliefs, attitudes, and emotions. Furthermore, they claim people with autism have difficulty comprehending when others don't know something. Kaland et al. (2002) found study participants had a tendency to interpret behavior and utterances literally, without regard to context, and to choose a physical explanation when a mental state answer was more appropriate. In addition they found the adolescents with autism to become upset when asking a question of a person to which the person does not know the answer.

By not understanding that other people think differently than themselves, many autistic individuals may have problems relating socially and communicating to other people. That is,
they may not be able to anticipate what others will say or do in various situations. Lawson, Baron-Cohen, and Wheelwright (2004) studied the ability for students with autism to display/show empathy. The study was conducted through a series of pre-set scenarios as well as picture prompts. Lawson et al. (2004) evaluated the responses of children and found a significant number of males with autism lacked the ability to empathize. However, through their tests they found males with autism scored higher on systemizing (organizational tasks). Lawson et al. (2004) found that children with autism have difficulties both in production of deception, but also in understanding when someone else is deceiving them. In addition, they may not be able to anticipate what others will say or do in various situations as well as have difficulty understanding inferred meaning found within a text. Autistic children can learn social skills in the same way a computer runs a program. Trying to follow implied meaning within a text without understanding what is written, can feel like a burden rather than as a pleasure. Without instincts to guide them, students rely on habit and (limited) life experience.

Understanding others’ perspectives is something humans take for granted in our everyday lives. But many researchers agree, children with autism have difficulty putting themselves into other people’s shoes, be it rationally or emotionally Kaland, et.al (2002) and Baron-Cohen (2001). Anaphoric queuing allows the student with autism to connect meaning with implied language.

**Computer Assisted Instruction**

Increased comprehension can be gained through repetition of approved reading software. Since the beginning of 1980, Computer-Assisted-Instruction (CAI) has been used systematically in special education. The use of computers in the education of autistic children is controversial
and emotional among parents and professionals. Fears of reinforcing autistic withdrawal are often mixed with insecurity and dislike of new and or unfamiliar programs. On the other hand, positive effects of CAI on learning and behavior have been reported by Tissot (2003). Tissot (2003) looked at the impact computers have on increased reading comprehension specifically for severely autistic students with limited communication skills. He states the use of computers in the education of autistic children is controversial and emotional among parents and professionals. The fear of reinforcing autistic withdrawal is often mixed with insecurity and dislike of new and or unfamiliar programs. However, Tissot (2003) found positive effects of CAI on learning and behavior. Another study by Basil and Reyes (2003) focused on students with severe disabilities including Down syndrome and autism to assess a program using multimedia software. The program also used a scaffolding approach along with the software to teach various reading skills as stated by Basil and Reyes (2003, p. 32). The research showed very positive results. The students’ ability to construct sentences enhanced greatly in a short period of time. Enhancement of skills occurred for students who typically did not perform well with conventional methods of reading and writing instruction. In addition Basil and Reyes (2003) also identified the program as more meaningful and interesting for the students.

Researchers, Basil and Reyes, (2003); Williams, Wright, Callaghan and Loughlin (2002) and Tissot (2003) all claim the use of computers can provide a stable routine, repetition, provide immediate feedback and allow the student to work at their own individual pace. Computer assisted instruction (CAI) includes the use of digitized textbooks, online or electronic graphic organizers, and web-based or software applications, including websites. CAI can provide immediate feedback to students and individualize instruction, and allow for extensive rehearsal and repetition.
Research by Williams et al. (2002) via a direct observation schedule which monitored autistic behaviors found an increase in reading comprehension skills when utilizing computers as part of literacy instruction. Findings by Williams et al. (2002) suggests the use of computer software program, scaffolding approaches and repeated practice of self initiated and meaningful literacy activities promote acquisition of literacy for those with developmental disabilities this includes children with autism. In similar findings, Tissot (2003) argues, “Visual learners are children that process and retain information better if it is presented in a format where it is written down and can be seen, as opposed to information that is primarily heard” (p. 426). This is a direct reference to the benefits of visual supports for the student with autism.

Additional research by Williams et.al. (2002) used digitized textbooks (e-books) to communicate science textbook information. They found software often contains games or other motivational ways to communicate science concepts and information to students. An additional claim by Williams et al. (2002), software might also motivate the student to participate in the class activity.

Computer Assisted Instruction as previously cited by Tissot (2003) may facilitate improvement in a multitude of areas for the student with autism. Through differentiated methods of accessing reading (or other) curriculum, thus allowing students with autism to learn concepts through a variety of formats cognition can be enhanced. Studies by Tissot, (2003); Williams et a. (2002) and Basil and Reyes (2003) all claimed an improvement in communication skills noted through Computer Assisted Instruction. Computer Assisted Instruction supports receptive language by providing information in new visual and/or auditory formats. It provides support for expressive language allowing students with ASD access to programs and software thus facilitating communication about curricular material. Finally, Computer Assisted Instruction can
be highly motivating for students and can provide an avenue for students with autism to express and develop interests.

Williams, et. al (2002) argues care should be taken with the use of computers as they relate to motivation. As has been discussed usage of the computer can be a highly preferred activity for a child with autism. Students can become repetitive in what they do while on a computer. Williams et al, (2002) suggest time spent on a computer should be consistent and explicitly outlined for the student. It may become necessary to use computers in school for work time and offer computer time at home for the more highly preferred activity.

**Conclusion**

The purpose of this literature review was to explore methods to support and enhance comprehension for children with autism. The characteristics of autistic students described in the first section are broad and general. The previously reviewed studies and strategies are all effective methods regardless of whether a student has a label or not. These are strategies rooted in common sense ways to support any student who is having difficulty with either reading or with comprehension. Additionally, the skills developed in reading (such as understanding others’ perspectives, critical thinking, and emotional empathy) are all important to social communication. The benefits of these reading programs should be two-fold. First, students with autism should be able to gain stronger comprehension skills for texts and real situations. These students will then also be able to express their needs and desires through more positive, socially acceptable means.

While great progress has been made, both clinically and educationally for students with autism, the focus in research is just beginning on identifying patterns of strengths and weaknesses that can be utilized to teach literacy to children with on the spectrum. Understanding
what may be an underlying general deficit, such as a deficit in Theory of Mind, or social inferential understanding, and hyperlexia may help guide interventions required to enhance reading comprehension for the child with autism.

Method

Context

Research for this study was completed in two middle schools within the same school district. Two locations were required due to the end of the school year and the beginning of the extended school year program also known as ESY. Both schools mirror each other in demographics as they draw their student population from the same community. The affluent suburb is located in the western part of upstate New York. The community was established in the early 1800’s (publicrecordfinder.com). The 2000 census reports 32.6% of residents hold a graduate or professional degree. The average home price in this community is $183,100 with a median household income of $88,232.00.

Latest data (2007-08) reveals a school population from the New York State Report Card at 743 students. The small size of this middle school [built in 1967] is due to the School Improvement Project passed in 2002 providing for a second middle school [opened in fall 2006] within the district. Both schools have 2 gymnasiums (1 large, 1 small) an indoor pool, auditorium, and one large cafeteria. A school Bookstore offers real life opportunities for students to run a small business. East Road Middle School (pseudonym) runs a day 1, day 2 (or A, B) schedule. Demographic information reveals 3% or 19 students qualify for free/reduced lunches with a racial make-up that consists of 88% white students, 7% Asian/Pacific Islander,
4% Black and 1% Hispanic.

Information from the district website shows an average class size of 21 students. The district has a middle school staff that includes 112 teachers, 38 paraprofessionals, 4 full time counselors, 2 part-time counselors, 3.5 school psychologists, and 3.3 speech pathologists. Administration consists of a full-time principal and 1 assistant principal. Female to male teacher ratio shows a much higher percentage of females in the building to males.

In addition, the district owns 205 acres of property with 9 school buildings and one transportation center. Buffalo’s Business First newspaper cited this school as the “number one middle school” from the regions 67 school districts (www.bbfirst.com). This honor was based on New York State test scores over the past four years.

The school’s mission statement was found on the school website as well it reads, East Road is a school for early adolescents that provide an excellent academic program for students while addressing their social, emotional, artistic and physical needs. East Road Middle School assists families in their children's growth and promotes life-long learning.

The special education department within this building consists 8 special education teachers and 13 CSE (Committee on Special Education) assigned paraprofessionals and 4 classroom paraprofessionals. Programs include inclusive settings, co-taught opportunities, and 15:1:1 multi-grade level classroom and the 12:1:4 (self-contained) classroom. The self-contained classroom is where the action research will take place. A review of the 12:1:4 class finds the classroom set apart from main building. The demographic make-up of this classroom includes 4 boys (3-white, 1-Asian Pacific) and 3 girls (2-white, 1-Korean). The setting a multi-grade level class with a focus on functional academics and life skills. Parents advocate
vigorously for their child within the setting. In addition, they are savvy in state requirements and
best practices which outline growth within the educational setting. In addition, five out of seven
parents participate in the UNYFEAT program (Upstate New York Families for Effective Autism
Treatment). The mission of UNYFEAT is to provide support for individuals with autism and
their families by expanding and enhancing opportunities for life.

Participants

Teacher: In this study I observed the special education teacher for the extended school
year (ESY) 12:1:4 classroom. Miss Black (pseudonym) is a second year teacher in a rural school
district located in upstate New York. Miss Black completed a student teaching assignment
within the focus school district. Miss Black’s placement was in a 6:1:1 classroom. A 6:1:1 is
defined as no more than 6 students, one teacher and 1 school support personnel. The students
within this setting have significant cognitive delays parallel to the students within the 12:1:4
setting. Miss Black possesses the qualities and characteristics required to facilitate student
learning. Miss Black’s recommendation letter states she has worked diligently on creating
systems and structures to remove barriers to learning. She collaborates with the classroom
paraprofessionals and has established clear daily routines for each child.

Students: I selected one student to participate in the action research study. The student was
selected based on their learning level and needs. The student is included in the 12:1:4 classroom
and participates in a special class reading group with a focus on functional reading. Functional
reading centers on the core areas of reading with the purpose of connecting reading skills to
everyday life. The selected participant in this study is a white, female who [in the fall] will be
entering her second year in middle school. Brittney is 12.3 years old and lives at home with her
mother, father and younger sister. Brittney enjoys the Disney princesses, cooking, as well as a variety of shows on PBS kids. Brittney is diagnosed with autism and her overall present levels of learning top out at a third grade level. Brittney’s state of regulation greatly impacts her ability to learn. One of Brittann’s autistic characteristics is scripting. If allowed to script for more than a few minutes it is difficult to get her back on point. Scripting greatly impacts her ability to attend.

**Researcher’s Stance**

As a researcher, I took the role of an active participant in data collection. Mills (2011) believes active participation to be the most common form of data collection as we [educators] are constantly engaged in the instruction cycle with our students. During my study, I also had the opportunity to participate as a privileged active observer. Over the course of four weeks, I had the opportunity to observe students in the extended school year setting offered by the school district. Mills (2011) finds this opportunity incredibly valuable to teachers as it allows us to observe the social interactions of the students as well as observing student outcome in a specific instructional area by another educator. Direct observation will allow me the opportunity to view my students through a different lens. I am currently pursuing my Masters in Literacy Education [birth – grade 12]. I also hold my initial certification in childhood & special education [grades one – six] and an extension in my childhood certification [birth – second grade]. Literacy was chosen because I believe literacy skills are vital for both success in academia and society.

**Methods**

For this action research project I focused on the impact specific comprehension strategies have on students with autism. In addition, I investigated what supports must be in place for the student with autism to increase their reading comprehension skills. To begin my research, I was
an active participate in the completion of a student questionnaire. Mills (2011) states active participation is done daily when we teach. By providing supports through simplification of directions, breaks, and introducing only one choice at a time so as to not overwhelm the student working on this task, I actively participate. This questionnaire allowed me to estimate the students’ attitude towards reading efficiently and reliably (See Appendix A). I chose this questionnaire because it utilizes picture representation for student responses. This visual support may facilitate a more accurate response from the students with autism than the traditional open ended questionnaire format. I also participated in privileged observation. Mills (2011) believes a privileged observation is one where a teacher is provided a unique perspective in which to observe their students during instructional time provided by another educator.

The final piece of my research includes a review of student artifacts. These artifacts include student work consisting of concrete “wh” questions using supports similar to those stated above. I scored the questions for correct (+) and incorrect (-) responses which allowed me to focus my attention on student outcomes utilizing these supports. By scoring responses I was able to focus my attention on what a student with autism can achieve in the areas of reading comprehension.

**Quality and Credibility of Research**

While completing this research, it was important to ensure both the quality and credibility of the research. Mills (2011) defines credibility as the ability by the researcher to reflect on complexities found within the study and address the patterns not easily explained. To help maintain credibility I incorporated specific methods into my research. I conducted persistent observations. Mills (2011) states persistent observations will help in identifying both
the pervasive qualities as well as atypical characteristics of the participants. In addition, I consistently practiced triangulation during this study.

Triangulation as defined by Mills (2011) is the process of cross checking data attained through multiple sources. For this study I included student participant questionnaires, teacher/classroom observations, and artifacts.

The guarantee of transferability as found in Mills (2011) claims, the goal of their research is not to develop truth statements that can be generalized to larger groups of people. For the purpose of this study I have included detailed information on the setting, participants and artifacts. Including the above information allow the reader to envision the setting for themselves.

Dependability of the study as laid out by Mills (2011) was found by establishing an audit trail. I recorded my notes in a field journal which allowed me to reflect on my notes at a later time. By reviewing the student survey as well as audio recordings and direct observations of the student within the 12:1:4 ESY setting the research should identify that the relative strengths of one artifact should balance the weaknesses of another artifact.

Finally, to guarantee the validity of my research confirmability must be achieved. Confirmability is achieved through the process of triangulation (as outlined above) and reflexivity (Mills, 2011). Reflexivity is the process of examining biases or preconceived ideas by the researcher. The practice of reflexivity will ensure no bias in questions generated by the researcher nor allow for prejudice of the findings.

**Informed consent and Protecting the Right of Participants**

Prior to the beginning of this action research study, I was required to meet with the director of Special Education within the school district. I outlined my case study proposal
completed a Research Proposal Request and anticipated a wait. Four days later I had a signed and approved copy of the proposal form. I then needed to secure informed consent and ensure the protection of rights for the participants. During my action research, I worked with 1 student and one special education teacher. The student within this classroom has significant cognitive delays; assent forms were not appropriate for the participant. At the onset of each work session with the student, I did go over our schedule outlining tasks and setting up expectations for behaviors. Not having formal assent from the student required me to seek formal informed consent of the parents. During my monthly parent meeting I presented the parents with the consent form that outlined the study and asked for their permission to work with their child. It was made clear to parents that names would be changed and no harm would come to their child through this study. Parents were also assured they could change their minds and not participate at any time. Confidentially will be guaranteed through changing the names of the town, school and participants.

**Data Collection**

As previously outlined, there were three forms of data collection included during the duration of my study. I was an active participant throughout the majority of my study. I worked 1:1 supporting the student as she completed her questionnaire as well as 3 direct instruction sessions lasting approximately 25 minutes each. I was also a privileged active observer allowing me to observe the interactions of the entire class with another educator at the lead. In addition, I became a passive observer in Miss Black’s class allowing me to observe Miss Black’s instructional practices and how the student responded to the instruction. During my observations, I compiled extensive field notes and backed them up via audio recorder. I used the detailed notes as a reference when I analyzed the data. Along with observations, I conducted
1:1 work sessions with the student focusing on direct instruction in the areas of priming (familiarization of material), vocabulary (to build background knowledge) and explicit questioning (QAR) to show strategies in how to answer right there questions. All sessions were audio recorded and transcribed to allow access to accurate information when assessing the data collected from the study. In addition, one session was used to gather data on the student’s attitude towards the reading process in general.

**Data Analysis**

After completing the data collection I began the analysis process by transcribing my taped sessions with the student. I scored correct (+) as well as incorrect (-) responses made by the student during our work sessions. Then I began the coding process. The process started with making several copies of each piece of data which would allow me to code and organize groups. I then met with my critical colleague to review my data I had collected. The collaborative process provided an opportunity to discuss reflectively as well as critically on the data collected. Upon completion of the meeting I listed all the codes established and recorded the page number where each supporting statement could be found. Code identification included phrasing of questions and statements, structuring of environment and activity, background knowledge, choice and prompting. Triangulation in this process was guaranteed through a review of the multiple data sources (student questionnaire, parent conversations, work samples and field notes). When the process was completed I decided on themes that described each group of codes. I also used the data from my field notes in the discussion of my findings.

**Findings and Discussion**

After analyzing the student questionnaire, student work samples (transcribed from audio recordings) and field notes, I was able to identify three themes that assist in the explanation of
my findings. The themes were the following: student dependence in the reading process, the value of phrasing when introducing (new/unfamiliar) material and the importance structure has to the student with autism. These themes are related to the data analysis and are discussed throughout this section. My initial research question asked what impact does priming have on a student’s ability to answer right there questions using the QAR (Question and Response) strategy? While the findings of this study showed the importance priming has on comprehension a more obvious strategy came to the surface. Although building background knowledge/ priming and utilizing right there questions can help support the student’s ability to self-correct during the reading comprehension process for the student with autism. Direct instruction impacted every theme identified. The themes I will discuss provide a richer understanding into the ways direct [explicit] instruction can influence priming during the reading comprehension process for the student with autism.

Student Dependence

The initial theme that emerged from the data was student dependence in the reading process. While completing the student questionnaire with Brittney (June 16, 2011) it became clear she responded less favorably to reading (in general) when she did not feel control over her choices. The completion of this questionnaire was unbiased as I had no influence over the way Brittney processed the information presented to her. Processing is one of the challenges to the standard methods of teaching reading and comprehension because of the ways that students with autism process information (Florez and Ganz 2009; Craig and Sexton –Telfer 2005). The results are displayed in Appendix A. Figure 1. Brittney’s responses on this questionnaire indicate she is less happy when her options are teacher directed rather than self directed. It is important to note that the phrasing of the statement appeared to impact Brittney’s responses as well. How do you
feel when a teacher… options scored much lower (3, 2, 1) than *How do you feel when…. *(typical score 4). See the four questions found in Appendix A. Figure 1.

No control over her options resulted in Brittney feeling less sure of the expected outcome. The perceived loss of control resulted in Brittney feeling less confident as a learner and it was during these times that negative behaviors, as noted in transcribed 1:1 sessions, would often appear. Brittney would yell out yeah [or at times] hit the desk or herself.

Brittney responded positively to questions presented to her that provided structure in setting (see Appendix A. Figure 2). School is a structured setting for children with autism and they quickly learn the routines established; furthermore they do not like to deviate from their routines. As noted by Mirenda (2003) a student with autism may be a very visual learner, a concrete thinker and will have difficulty interacting socially. The process of concrete thinking as reported by Whalon and Hart (2010) is comfortable and routine for the student with autism. Concrete thinking allows the student to make sense of a confusing world.

After scoring all of my data a decrease in student dependence was noted across settings. This was observed in both field note reflections as well as 1:1 work sessions. Once a routine had been established, Brittney’s dependence in the way of prompting decreased. As noted in the works of Gardiner, Bowler and Grice (2003) who found that students with autism were more likely to struggle with comprehension that had not explicitly been taught. This concept can be applied to routines and schedules as well. Introducing a novel activity (out of context) to the student with autism can result in negative behaviors. Introducing a schedule to Brittney outlining activities and even the number of questions to be answered resulted in less prompting and redirection (see Appendix B Titled Session 2). At the onset of guided reading Brittney required prompting when it was her turn to read, once the routine had been established Brittney required
less prompting during reading opportunities (see Appendix E Titled Field Notes). Most importantly Brittney’s rate of self-correction increased as prompting decreased. During the last question during session 3 (Appendix B. Figure 3.) Brittney paused when matching vocabulary word cards to their picture. Her hesitation was based on a previously incorrect response. After a prompt from me (what’s wrong do you need help) she rummaged through the cards and self corrected (independently). Brittney’s actions relates directly to O’Connor and Klein’s (2003) claim it is essential to give the child with autism as much information and scaffolding before reading as possible to ensure their success.

Introduction of new vocabulary and pre-reading activities provided Brittney with significant improvement in her comprehension of text. Huemer and Mann (2010) emphasize the need [for the student with autism] to know the words and concepts related to the specified topic. Pre-teaching this content will give them the necessary background and vocabulary essential to reading success. The strategies used included direct instruction of new vocabulary words that included: passenger, train, station, engineer and coach. The reinforcement activity was presented as memory game (matching activities). The picture walk helped Brittney focus on illustrations prior to reading the text and gave her a point of reference to use when she actually read the story. When Brittney was provided opportunities to gain familiarity with the vocabulary and the text she was more confident as a reader. Her increased confidence led directly to her increased comprehension.

**Phrasing**

The task of presenting material either verbally or in written form is a challenge for educators. The words we choose can impact a student’s outcome. One of the challenges is to stay neutral in our demeanor. A tilt or nod of the head by the instructor can influence a student’s
response, and is evident in students with autism. Phrasing is the second theme noted in my data analysis. The impact phrasing had on student responses first became obvious reviewing the student questionnaire. The questionnaire was completed during our first work session together. Brittney response was determined on the phrasing of a questions 1 and 8 (See Appendix A. Figure 3).

It was during a personal communication with Brittney’s mother (June 15, 2011) that I gathered some additional information regarding Brittney and her routines. First off rainy weather is not something Brittney is particularly fond of. With rain comes thunderstorms and lightening - -two things Brittney’s mother stated she (Brittney) does not like and can result in negative behaviors such as yelling, hitting herself and others). Then there are Saturday’s and after school times. Brittney refers to these periods as no school. Her Saturday’s include staying in her pajamas, watching videos, playing with her toys and watching more videos. Reading is not part of her weekend routine. Since a rainy Saturday is an option not appealing to Brittney she did not answer favorably. The phrasing would you like to read a book instead of playing (being a preferred activity) again illicits a less than favorable response. Therefore the phrasing of questions 1 and 8 (See Appendix A. Figure 3).directly impacted the student’s response.

During my observation time in the classroom phrasing again showed its significance. The teacher (Miss Black) began the activity with a review of the schedule outlining expectations and outcomes that included the words first as well as then. First you do ___, then you can __", rather than an "if-then" approach (i.e., "if you do ____, then you can do____"). These key phrases let Brittney know the expectation as well as the end result. Having the student identify their then activity prior to the start of a work session gives them a sense of control over the session. Control is important for the student with autism who often feels a lack of control over their
world. By establishing expectations from the start in a matter of fact way there was no room for misconceptions by the student. Brittney understands the use of this visual to get a desired outcome.

Phrasing played an important part in the presentation of the QAR (Question and response) process as well. During session 4 (See Appendix B Figure 4.) my phrasing using the QAR was explicit and direct. Explicit/Direct instruction follows Nation et al. (2005) claim that direct instruction should be used when introducing the QAR strategy and can facilitate identification of the kind of response necessary to answer a question and make connections.

Session 4 began with a routine Brittney is familiar with. We started with a review of her within activity schedule, established what she was working towards and established the numbers of questions needed to complete the activity. By utilizing direct instruction with Brittney and taking away all the unknowns Brittney had the opportunity to attend to the questions presented. The QAR was new to Brittney; she responded well to the directions and appeared to understand the concept of finding an answer on a page. After three trials the prompt of pointing to the section on the page had faded and only a direct question was presented. Brittney was able to locate the information required to answer the question asked of her.

**Structure**

The third theme of importance to this study is structure. Students with autism respond well to structure. It provides them with a safe and predictable environment that increases their understanding and ability to succeed. Changes in routine and structure can be alarming and disturbing to students with autism. As we know in a classroom there will always be changes we cannot avoid. Knowing this ahead of time, and understanding the struggle and strife it can create in students with autism is an integral step in making a school day successful.
Whalon and Hart (2001) found there is greater ability for the student with autism to recall factual information than fictional information. This is in direct support of similar findings by Basil and Reyes (2003), Lawson et al (2004) and Dickerson and Calhoun (2005) and the autistic student’s ability to organize concrete information. Therefore, the QAR (Question and Response) strategy was selected as a logical reading comprehension strategy to use when identifying concrete information (right there questions) in a text. Following the frameworks of Whalon and Hart (2001) I selected text that had concrete information and basic “wh” questions, who, what, where and when. Inferential questions are not suggested when introducing the QAR strategy thus eliminating why questions. In addition, I followed the procedural prompts outlined by Whalon and Hart (2010) such as visual cues and self-monitoring checklists. Furthermore, I introduced concrete questions in an errorless manner to ensure success of the strategy and reduce frustration of the student. After three trials (see Appendix Figure 4.) providing explicit instruction of the strategy I eliminated support explicitly (pointing to answer in text) showing Brittney where she would find her answers. Brittney correctly identified the information for the remaining questions without needing the additional prompt of directly pointing to the answer in the text.

Structured setting utilizing an identified area for individual work as well as small group work was observed during my time in Miss Black’s classroom; she identified the importance of setting structure for Brittney and had all materials at hand during the special class reading block. Huemer and Mann (2009) identified reading comprehension as a special challenge for children with autism because of their difficulty with pulling in relevant background knowledge. Relevant information can, at times, be difficult for the student with autism to distinguish from the non-relevant information. By providing visual cues such as a daily schedule on the board,
within activity schedule which included first/then written prompts Miss Black lessened the opportunity for negative behaviors to surface for her student. By providing structure Brittney was then able to focus on the relevant information presented to her.

The importance of setting structure was again identified during my own 1:1 sessions with Brittney. I was listed on her daily schedule. By placing my name and the time on her schedule left nothing to chance for Brittney. She knew who she would be working with, what time I would arrive, when we would be working (after a walk) as well as how long we would work together.

Brittney is a student that possesses a cognitive disability. With that said she was redirectable and had minimal behaviors during our work sessions together. My time in the classroom observing also revealed the same findings. When the correct supports and instructional strategies (direct/explicit) were in place Brittney could successfully attend to 20 minutes of instruction. The correlations established mirrored much of the research available as well as the literature reviewed.

**Implications**

Through this case study I learned there are many factors which impact the reading comprehension process for the student with autism. In addition, I identified the importance explicit/direct instruction has on classroom setting, phrasing and student dependence in the comprehension process. As the literature stated, children with autism (CWA) present specific challenges to the standard methods of teaching reading and comprehension because of the ways that they process information (Florez & Ganz, 2009; Craig & Sexton –Telfer, 2005). The findings support that students with autism can increase their reading comprehension when the
needed supports are in place for them. As a result, this action research study will impact my daily practice within my classroom.

As a middle school teacher working with students identified with cognitive delays, I am constantly looking for ways to best support student learning. While there are a plethora of reading strategies proven to be effective when teaching comprehension, my research focused on priming a student specifically to answer right there questions. Based on the current literature reviewed, as well as my research and findings from this study, I saw a direct correlation between explicit/direct instruction and student success in the comprehension process. If time had not been taken prior to instruction to explicitly prime the student with the use of a visual schedule, first/then chart and a well thought out area for instruction, behaviors that impacted success on the task would have surfaced. Negative behaviors can impact the learning process for the student through perseveration (Chandler-Olcott and Kluth, 2009). Since all the unknowns (when, where, how many, and length of the work session) were answered prior to the beginning of instruction the student was able to focus on the tasks presented to her and eventually apply the strategy using less prompting. In addition, the findings of this study clearly support priming as an effective strategy for improving reading comprehension. While teachers may have several reading strategies at their fingertips, modifications may be needed based on the cognitive ability of the student.

Another implication that I found based on the literature and my research is the significance of framing or phrasing a question. Phrasing was found to impact student success on the reading comprehension as well. The student with autism typically looks for a reaction from the instructor when answering a question. Therefore word choice, intonation of voice and body movement all need to be considered when presenting a question to the student.
As a teacher for students with cognitive delays I recognize the importance of structure for my students. The most substantial implication that came to light was the need for structure across settings. Structure across settings simply means structure throughout the day. Most lesson plans follow a structure or framework. However, for the student with autism structure must be apparent from the beginning of the day. By introducing a daily schedule then followed by reviewing a within activity schedule and finally previewing and priming of the task itself the anxiety level of children with autism decreases. The possible occurrence of challenging behaviors is lessened, by providing the structure for the student to organize and predict daily routines and schedules. Again, the literature reviewed and my own research identified the benefits for my student when chaos is reduced and expectations are clear learning can occur.

Structure can take many forms in the classroom. Through my research I found the importance of visual and verbal supports for the student as well as the importance of establishing a structured learning environment.

Conclusions

The results of this action research provide strong support for direct/explicit instruction and priming as a strategy in comprehension of text for this particular student at her instructional reading level. The use of the strategy demonstrated, if given the opportunity to respond to a literal question, student comprehension increased. In addition, the use of this strategy revealed the student began to comprehend better toward the end of the session resulting in less explicit instruction. This may suggest the students’ overall comprehension of text at his independent level has increased.

As a researcher I would have liked to have the opportunity to work with more than one student. By working with other students with autism, I would be able to provide a comparison
between the teaching strategies and the individual student’s needs. Working with more than one student would also allow me access to an additional classroom environment and the strategies used by different educators. Additionally, when using the QAR strategy Raphael and Au (2006) recommend the questions be representative of different kinds of cognitive processes involved in comprehension including literal, inferential, and critical. My questions were mostly literal. Literal questions promote lower level thinking and higher-level questions promote higher order thinking which can essentially improve comprehension. However, for the purpose of this study this particular student was functioning at a significantly lower level cognitively and would not have benefited from the use of higher-level thinking questioning prior to becoming independent in literal thinking.

Whalon et al. (2009) suggests using text without strong picture cues when teaching reading comprehension so students must answer comprehension questions based solely on the written words. As a result my study had limitations because I found the “Brianna and the Trains” series allows students to rely heavily on picture cues to answer comprehension questions. If I were to conduct further research, I would be sure to choose a text which does not provide such a heavy dependence on picture cues. Finally, time was a factor in this study; I would have liked to see longitudinally where my research would have taken me over the course of a few months.

Completing an active research study question allowed me to grow as a literacy specialist. I realize the importance of incorporating literal, inferential and critical questioning as well as instructional/evaluative questioning to enhance my students’ learning. I gained new knowledge through reviewing research about various strategies for students with autism. For my student, it will be important to modify comprehension strategies to fit her reading needs and goals.
According to Huemer and Mann (2010) scaffolding supports students and teachers in their efforts to collaborate as students become active readers and thinkers. This study allowed me to identify a teaching goal for my student to become an active thinker.

There continues to be much debate about when is the most beneficial point in a child’s reading development to directly teach comprehension. Further research is required to identify the most crucial period to introduce comprehension strategies in order to be most beneficial.

Another aspect of this study that may need further research is the modification of the QAR. Graham and Wong (2001) examined a different mnemonic strategy to indicate question-answer relationships, such as 3H system of “Here”, “Hidden” and “In My Head”. It would be interesting to identify other possible ways to modify the QAR strategy to ensure it meets the needs of all students.

Another study of interest would be to examine the possible reasons children on the Autism spectrum struggle with inferential thinking and questioning and to identify possible strategies teachers could use to increase higher level thinking for these students.

As a teacher I believe my findings and implications from the research are important for all professionals in the field of education as the number of students with autism continues to grow and NCLB of 2001 continues to support the least restrictive environment for students with disabilities. It is important that educators are made aware of the most current and effective strategies available today. In order to facilitate growth in the area of comprehension for students with autism, teachers must take the initiative in providing not only effective reading strategies but the modifications to these strategies as well as supports required to facilitate success for the student with autism.
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scientific research literature on reading and its implications for reading instruction.


# Elementary Reading Attitude Survey

School___________ Grade_____ Name_____________________

Please circle the picture that describes how you feel when you read a book.

<table>
<thead>
<tr>
<th></th>
<th>How do you feel when you read a book on a rainy Saturday?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Picture Options]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel when you read a book in school during free time?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Picture Options]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel about reading for fun at home?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Picture Options]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel about getting a book for a present?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Picture Options]</td>
</tr>
</tbody>
</table>
Appendix A. Figure 2.

Please circle the picture that describes how you feel when you read a book.

5. How do you feel about spending free time reading a book?

6. How do you feel about starting a new book?

7. How do you feel about reading during summer vacation?

8. How do you feel about reading instead of playing?
Please circle the picture that describes how you feel when you read a book.

9. How do you feel about going to a bookstore?

10. How do you feel about reading different kinds of books?

11. How do you feel when a teacher asks you questions about what you read?

12. How do you feel about reading workbook pages and worksheets?
Appendix A. Figure 5.

Please circle the picture that describes how you feel when you read a book.

13. How do you feel about reading in school?

14. How do you feel about reading your school books?

15. How do you feel about learning from a book?

16. How do you feel when it's time for reading in class?
Please circle the picture that describes how you feel when you read a book.

<table>
<thead>
<tr>
<th></th>
<th>How do you feel about stories you read in reading class?</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>![Picture Choices]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel when you read out loud in class?</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>![Picture Choices]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel about using a dictionary?</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.</td>
<td>![Picture Choices]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>How do you feel about taking a reading test?</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.</td>
<td>![Picture Choices]</td>
</tr>
</tbody>
</table>
Scoring Guide

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Happiest Garfield</td>
</tr>
<tr>
<td>3</td>
<td>Slightly smiling Garfield</td>
</tr>
<tr>
<td>2</td>
<td>Mildly upset Garfield</td>
</tr>
<tr>
<td>1</td>
<td>Very upset Garfield</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recreational reading</th>
<th>Academic reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ____</td>
<td>1. ____</td>
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<tr>
<td>2. ____</td>
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<td>3. ____</td>
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<td>9. ____</td>
<td>9. ____</td>
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<tr>
<td>10. ____</td>
<td>10. ____</td>
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</tbody>
</table>

Raw Score: ____          Raw Score: ____

Full scale raw score . . . . . . . . . . . (Recreational + Academic): ______

Percentile ranks: . . . . . . . . . . . Recreational

. . . . . . . . . . . Academic

. . . . . . . . . . . Full scale

Survey designed by Dennis J. Kear, Wichita State University

Appendix B. Figure 1.
Session 2 – Unprepared
June 16, 2011
Brianna and the Trains Accessing Prior Knowledge

Notes:
Brittney required prompting in 3 out of 7 questions
distracted by audio recorder
Utilized first/then chart
Utilized star chart (reinforcing appropriate behaviors, hands to self, school voice, get your work done)
Vocalizations included yelling “Yeah” at the end of her responses

T: Let’s look at our schedule today. First, we are going to answer 4 questions take a break and then answer 3 questions. First we need to keep hands to self, use a school voice, get the work done then, you can have the audio recorder for 3 minutes; What are we working for?
S: The audio recorder
T: How long can we listen to the audio recorder
S: 3 minutes
T: Ready?
S: I want the audio recorder
T: First?
S: Questions, yeah
T: I would like to give you a star
S: I want a star, I’m sorry
T: Thank you for saying I’m sorry, ready
S: I’m ready
T: Here is question number 1: Who has toys trains?
S: Not me, yeah
T: Brittney doesn’t have any trains?
S: NO! YEAH
T: Does Stephanie (younger sister)?
S: NO! I don’t like toy trains
T: Oh, you don’t like toy trains, but does Brittney know anyone that has trains
S: David does
T: Who is David?
S: My cousin, yeah
T: Do you know anyone else who has trains
S: NO, yeah
T: What are you working for??
S: The audio recorder
T: Right the audio recorder. (question 2) Brittney, what can you do with toy trains
S: Ride them, play with them
T: Can people ride toy trains?
S: No play with trains
T: (question 3) where can you keep toy trains?
S: I don’t know?
T: Let’s think about that; toy trains are small; if we had to pick them up and put them away we could….
S: Put them in a bag
T: What kind of bag?
S: A big bag
T: (question 4) Where can you see big trains
S: Train station
BREAK
T: (question 5) Where can big trains take people
S: I don’t know
T: Could you take a train ride for vacation
S: no response
T: Could you ride the train to Florida and go to Disney?
S: I would bring trains on my vacation

T: (question 6) How do things look when they are far away?

S: No response

T: Look at this picture is the train close or far away

S: far away

T: Does the train look big or small

S: small

T: Oh, so when something is far away from us it looks small?

S: Yes

T: (question 7) How do things sound when they are far away?

S: Loud
Notes:
Previewed vocabulary day before
Brittney focused on lunch
verbalizes:
wants the computer and to go home and see mommy
Utilized first/then chart
Utilized star chart (reinforcing appropriate behaviors, hands to self, school voice, get your work done)

T:  Okay it is time for reading

S:  No reading, I want to go home and see mommy

T:  Is mommy home right now??

S:  I want mommy

T:  You want mommy, when we can see mommy

S:  at the end of the day, is it time to go home, I want to go home

T:  Brittney goes home at 2:20, ready

S:  Yeah, I’m sorry, I’m ready

T:  Yesterday we talked about toy trains and did a picture walk in a book, do you remember what pictures we looked at yesterday?

S:  Trains, yeah

T:  That’s right trains, I would like to give you a star you did a great job answering the question

Today we are going to look at some pictures and some words, all set

S:  All set, is it time for lunch yet, I’m hungry

T:  Lunch is at 10:30, first reading then lunch, ready

S:  I’m ready

T:  Look at this picture (train tracks) do you know what this is…can you find the word that goes with the picture

S:  Train tracks (student picks up card with word train tracks printed on it) (+)
T: Great job, I’m going to give you a star. Now look at this picture (engineer) do you know what this is…can you find the word that goes with the picture

S: Coach (student picks up card with the word coach on it) (-)

student self corrected (+)

T: Okay, how about this picture (passengers), do you know what this is …can you find the word that goes with the picture

S: Passenger (student picks up card with the word passenger printed on it) (+)

T: Great job remembering what a passenger is, I’m giving you another star!

S: Yeah

T: How about this picture (train gate) do you know what this is …can you find the word that goes with the picture?

S: No response (student picks up card with the word gate printed on it) (+)

T: What does that card say?

S: Gate

T: You got it! Good job remembering that new word. How about this picture (train station) do you know what this is …can you find the word that goes with the picture?

S: Train station, yeah! (student picks up card with the word train station printed on it) (+)

T: Last one are you ready? How about this picture (train coach)

S: Student picks up card with the word engineer printed on it, but does not place it with the picture

T: What’s wrong, do you need help?

S: Note: Brittney holds onto the card with the word engineer printed on it. Rummages through previously matched cards, switches out word card coach for engineer. (with a big smile) Brittney matches the word coach to the picture (+)
Notes:
Read story Friday
Reviewed Monday a.m.
Brittney focused on lunch
verbalizes:
wants the computer and to go home and see mommy
Utilized first/then chart
Utilized star chart (reinforcing appropriate behaviors, hands to self, school voice, get your work done)
S: No reading, I want mommy.
T: Is mommy home right now??
S: I want mommy
T: You want mommy, when we can see mommy
S: At the end of the day, is it time to go home,
T: Brittney goes home at 2:20, ready?
S: I’m sorry, I’m ready
T: Today we are going to do investigations just like Sid the Science Kid.
S: We are.
T: Yes we are, yesterday we read our story and today we are going to investigate and look for answers.
S: I want my investigations journal
T: you can use your investigations journal. Ready? Look at this sentence on this page you are going to find out what Brianna loved to play with (point to exact text on pause for student to read) what does Brianna love to play with?
S: Toy Trains.
T: Where did you find that?
S: (student pointed and read sentence) Brianna loved to play with trains. (+)
Look at this sentence on this page. You are going to find out who the people were in the story? (Point to exact text on pause for student to read) Who was in the story?

S: Brianna and mommy

T: Where did you find that?

S: (Student pointed and read sentence) Brianna and her mother go to see a big train

Look at this sentence on this page. You are going to find out what Brianna put her trains in. (Point to exact text on pause for student to read) What did Brianna carry her trains in

S: A pretty bag.

T: Look at this sentence on this page. You are going to find out where Brianna and her mother went? Where did Brianna and her mother go?

S: The train station

T: Look at this sentence on this page. You are going to find out what Brianna and her mother saw? What did they see?

S: A big train at the station

T: Look at this sentence on this page. You are going to find out what this story was about? What was the story about?

S: Trains

T: (Prompt) what kind of trains

S: Toy trains and real trains too
Appendix C. Figure 1.

Field Note Transcript
July 12, 2011
Special Class Reading

<table>
<thead>
<tr>
<th>Details</th>
<th>Reflections</th>
</tr>
</thead>
</table>
| Room D-22  
Classroom had designated areas for instruction; smart board, reading instruction, leisure reading and seat work. Teacher had just called the students to join her at the reading station. Other students were leaving for swimming or related services | Classroom was inviting, lighting was soft and temperature was comfortable. Only 2 students in this special class reading group |
| Students sat at their desk (no paras)  
Supplies all set prior to the beginning of class included: posted schedule, leveled reading books, word cards, story train, tracking tool (index card) | Miss Black reviewed schedule with students, allowing them to see the progression of the lesson. All supplies were organized as to not interrupt the flow of the lesson |
| First on schedule review story words (review Chapter 1, 2 words introduce chapter 3 words  
Teacher had one pile of word cards. On the white board (near the rail) were 2 stars one green (new words), one red (review words).  
As new words were introduced Miss Black would first ask if wither student knew the word then she would model say it, explain it and use it in a sentence. | This system appeared to work for the students the stars served as visual reminders for the words. Miss Black allowed 3 sec wait time before helping with the word. Help came in the form of pointing, looking for chunks, and sounding out (ie. Chopped)  
B: *I chopped tomatoes in Mrs. Merrifield’s class one time* |
| Next, read Chapter 3 in book. Students alternated reading pages | B: In the beginning B required prompting to follow along, did not take tracking tool when offered to her and required assistance in finding pages when it was her turn to read.  
**Throughout reading time observable behaviors included yelling yeah and hitting fist on desk** |
<p>| Miss Black pause at the end of a lengthy | Students read word by word often taking minutes to read 2 to 3 simple sentences. |</p>
<table>
<thead>
<tr>
<th>Sentence or at the end of the page to recap</th>
<th>Recapping offered a chance for the teacher to model for fluency and think aloud for comprehension</th>
</tr>
</thead>
</table>
| Reinforcement directly observed          | B: I know this word  
T: Yes you do!                                                                                   |
| Explicit instruction directly observed   | T: on page 43 Mario is suggesting Nando do something (she point to the sentence) what is he suggesting Nando do?  
B: Fishing do you want to go fishing?                                                             |
| B: reading sentence included the words pizza and lollipop                                       | I’m hungry, I want my lunch                                                                     |
| When new words were encountered Miss Black would pause and ask, “do you remember…” (pointing to the green star on the board) what foolish, chopped, snapper is? | Prompting student to recall this is a new word and utilize visual strategies.                   |
| Checking Comprehension using story train simple graphic organizer showing beginning, middle and end. What happened in the chapter…, remember you can look back at the words, don’t forget to use the pictures too | Miss Black completed a story train after each box was discussed with students. This served as a visual model for the student to complete. Prompts included hand motion to assist in details from the story |
| B: (beginning) Don’t want him to eat meat                                                     |                                                                                                  |
| T: chopping motion with hands                                                             |                                                                                                  |
| B: chopped meat                                                                           |                                                                                                  |
| T: why                                                                                    |                                                                                                  |
| B: costs too much money                                                                    |                                                                                                  |
| At this time a student enters the room (Loudly) w/ a para. Does not break flow of lesson.    | Teacher has strong management skills. Allows para time to redirect student allowing teacher to continue instruction.  
A glance from the teacher to the paras lets them know to end their conversation |
| Another para enters room to paras begin a conversation                                      |                                                                                                  |
| Let’s check page 43 for the name                                                            | This prompt still places the responsibility to complete the task on the student. Once page numbers were identified B; knew which direction to continue |
| B: struggles with which direction to go in the book forward or back, I need help           |                                                                                                  |
| T: points to the page number on the page and                                               |                                                                                                  |
the next page and waits

<table>
<thead>
<tr>
<th>Students complete beginning, middle and end of story train</th>
<th>After reviewing the sequence of events and checking students understood the sequence, the teacher set the stage for tomorrow’s reading, by giving a hint. Good way to hook students</th>
</tr>
</thead>
<tbody>
<tr>
<td>T: okay let’s review</td>
<td></td>
</tr>
<tr>
<td>Group reviews story train from board</td>
<td></td>
</tr>
<tr>
<td>T: tomorrow we will find out what happened to Nando’s dog</td>
<td></td>
</tr>
<tr>
<td>B: There’s still more!!</td>
<td></td>
</tr>
</tbody>
</table>

*Field-Notes compiled by:*
*Cindy Merrifield*
*July 1, 2011*