Effective Reading Comprehension Strategies for Students with High-Functioning Autism Spectrum Disorder

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Abstract

Autism Spectrum Disorders are a pressing issue in education. One of the proven areas of difficulty for students on the spectrum lies in the area of reading comprehension. This difficulty stems from several areas, including lack of understanding regarding common comprehension difficulties in the population as well as needs for increased support within existing instruction. By increasing educator awareness of common comprehension issues in this population and providing a number of visual and organizational supports in the classroom, teachers can increase the chances for student success.

Keywords: autism spectrum, comprehension, differentiation

Introduction

Students with autism spectrum disorder (ASD) are becoming more and more prevalent in American public schools. As of 2012, one in 88 children had ASD (Williamson, Carnahan & Jacobs, 2012). According to the Center for Disease Control and Prevention (2018), the number of children with ASD had risen to 1 in 59 by 2014. Not unlike any other learning impairment, autism is a disorder that manifests itself in many ways. The literature clearly shows that the majority of the ASD population experiences difficulty in the area of reading comprehension and often experiences hyperlexia, an above average ability to decode words without previous instruction (Huemer & Mann, 2010; Lucas & Norbury, 2014; Nation, Clarke, Wright & Williams, 2006). Though these learners have well-developed decoding, often with no explicit training, they have trouble understanding many facets of text.

ASD and Reading Comprehension

A number of studies show that high-functioning ASD students commonly have above average decoding but exhibit far below average reading comprehension when compared with their peers of the same age (Carnahan, Williamson & Hayden, 2003; Newman et al, 2006). For instance, in a study led by Huemer and Mann (2009) of almost 400 ASD participants across nine different standardized reading tests, there was a pervasive confirmation of previous research determining a disconnection between the highly developed decoding of this population and their below normal comprehension. This included participants with autism, Asperger’s, and
Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). Similar studies have been conducted which confirm these results (Lucas & Norbury, 2014; Nation et al., 2006). Though autism and hyperlexia may not always be connected, the disorder is commonly associated with unusually low levels of comprehension in comparison to decoding skills (Newman et al., 2007).

It is important to note that students with the disorder compromise a large population and are quite diverse. As an example, Willamson et al. (2012) conducted a study in which they observed autistic students for three months and interviewed their parents about the students’ reading habits. They found three main types of autistic readers:

1. Students who were successful with using a variety of strategies with which to comprehend all types of texts.
2. Students who were successful with explicit comprehension tasks.
3. Students who relied on visual supports to comprehend text.

This variance in comprehension closely resembles the typically functioning population of students in the classroom. In a similar study, researchers concluded that some ASD students also have decoding concerns that interfere with their comprehension (Nation et al., 2006).

Some of the characteristics associated with autism can interfere with a student’s ability to analyze and respond to comprehension questions. Ricketts, Jones, Happé, and Charman (2012) conducted a study with a large and diverse population of ASD, Asperger’s, and PDD-NOS learners who were given reading comprehension, social behavior, and cognition tests. As the researchers hypothesized, social behavior and cognition scores predicted comprehension concerns. Thus, adaptive behavior and oral language also has a large effect on the ability of the student to comprehend text (Arciuli, Stevens, Trembath & Simpson, 2013). With this in mind, many ASD learners have oral language impairments that can make it difficult for them to comprehend text, as well as convey their understanding of a text.

**Greatest Areas of Comprehension Difficulty**

It may be helpful for teachers to know comprehension strategies that generally pose challenges for ASD learners. Lucas and Norbury (2014) noted that many ASD learners have appropriate comprehension at the sentence level, but not at passage level. They attributed part of this problem to the student’s ability to understand and access the meaning of vocabulary. It has been shown that autistic readers often have an impaired working memory and an inability to use metacognitive monitoring when reading. Consequently, the student may know the meaning of a vocabulary word, but it may be difficult for them to put that meaning to work in the act of constructing meaning while reading (Oakhill, Cain & Bryant, 2003).

Many researchers have also noted that an inability on the part of ASD learners concerns a struggle with activating their background knowledge while reading (Adams & Jarrold, 2009; Carnahan et al., 2009; Wahlberg & Magliano, 2004). This impairment impedes the reader’s ability to visualize and interpret a scene occurring in narrative text. For example, it is very difficult for a reader to comprehend a story that takes place at a birthday party if they are not actively checking the content of the story against what they already know about birthday parties in the present. This is especially true in the case of a text that is in any way ambiguous and does not explicitly state the actions and feelings of characters. According to Wahlberg and Magliano (2004), when ambiguity is present, ASD learners often come up with unusual answers to comprehension questions posed by the teacher.

Similar to their non-ASD peers, ASD learners tend to have less trouble with explicit rather than implicit comprehension questions. Several studies have shown that the autistic population performs far better with literal
comprehension questions versus questions that require an inference (Carnahan et al., 2009; Elangovan & Chia, 2013; Saldaña & Frith, 2007). In Diehl, Bennetto, and Young’s (2006) study of story recall in high functioning autistic students, they observed this in the practice of retelling a story. These researchers, along with Elangovan and Chia (2013), discovered that ASD learners possess a recency bias that emphasizes events that occur towards the end of a story. This phenomenon makes self-monitoring during story reading a difficult task for ASD learners and often limits story retelling to a mere listing of events. Furthermore, the social impairment of ASD learners affect their ability to comprehend in two ways. First, the reader often has a difficult time understanding the motivations, actions, and feelings of a character in a narrative story (Elangovan & Chia, 2013). Second, when recalling a story or answering questions orally, the student often misunderstands what a reader would need to know about the story, including describing the emotional state of a character or the motivation for their actions (Diehl et al., 2006).

**Comprehension Supports for ASD Learners**

When thinking about ways to help ASD students with their reading comprehension, it is important to remember some of the common characteristics of the autistic learner. It is also worth noting that many strategies appropriate for the ASD population are best practices for all students. In general, ASD students are very literal in their thinking and may have difficulty with narrative text, as opposed to expository text, in terms of their understanding (Carnahan et al., 2009). Therefore, providing visual supports can make narrative texts more accessible to ASD learners (Kana, 2006). For example, picture books help ASD learners process content and maintain a frame of reference, which support them with overcoming recency biases (Armstrong & Hughes, 2012). Graphic organizers are another excellent way for ASD learners to internalize information about a story (O’Connor & Klein, 2004).

Additional strategies that facilitate comprehension among ASD learners involve the use of technology. A computer-animated tutoring program can be used by high-functioning ASD students and increases retention of content when paired with 1-to-1 instruction (Massaro, Bosseler, & Light, 2003). Computer versions of storybooks, manipulated by autistic learners by a click to turn the page, also helps ASD learners (Armstrong & Hughes, 2012). The use of technology also enables ASD learners to apply appropriate pacing in a lesson and address possible social constraints, such as peer interactions. Furthermore, technology tools are excellent visual aids to make text more comprehensible for ASD learners.

**Conclusion**

Autism is a complex neurological condition that requires special attention during comprehension-based instruction. Although each ASD learner possesses individual differences, many ASD learners experience the most difficulty with implicit meaning in text. ASD students are capable of reading comprehension comparable with the non-ASD population given the proper supports. For these students, time spent reading high-quality texts and discussing their understanding with the use of visual aids, graphic organizers, and technology will yield the greatest results. Teachers must ensure that all students receive the supports they need to access the full range of comprehension of texts.

**References**


Wahlberg, T., & Magliano, J. (2004). The ability of high function individuals with autism to comprehend written discourse. *Discourse Processes, 38*(1), 119-144.