

**Evidence-Based Practice Final Research Paper**

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Reading comprehension is a skill that is obtained through proper instruction, practice, and training. As a student learns to read, the text that they are required to read at school becomes lengthier. Though a student might be able to decode the words in a lengthy text, some students struggle with understanding what they just read. For some students, a fix to this problem is easier than others. Some students realize they were not paying attention to what they were reading, refocus, reread, and are able to understand what was just read. For students with autism spectrum disorder (ASD), this is not always the case. Many students with ASD struggle with reading skills, specifically reading comprehension. The purpose of this paper is to analyze researched practices that can be implemented in the classroom to guide teachers when making decisions regarding how to best assist their students with ASD that struggle with reading comprehension. The use of small groups, scripted language, and student active engagement will be addressed throughout this paper.

### **Methods of Inclusion**

The studies used in this paper were peer-reviewed journal articles that have been published after the year 2000. These articles include students in elementary through middle school grades with moderate to low-level autism that have been identified to have struggled with reading skills, including reading comprehension. Criteria for inclusion in this paper incorporated strategies that could easily be implemented in a typical general education classroom to assist students with autism that struggle with reading comprehension. The literature reviewed in this paper were found via EBSCO searches to include peer-reviewed journals with filtered searches include terms such as evidence-based practice, reading comprehension, and autism spectrum disorder.

## **Introduction to Literature**

The literature in this research were chosen because of the strategies used to assist with reading comprehension in a general education classroom. The matter of inclusion of students with ASD is significant in that these students mostly, if not always, learn in the general education classroom along with students without ASD. These studies reveal how teachers can address, plan, and implement strategies to improve reading comprehension in all students, but specifically for students with ASD. Some of the strategies that were found to be the most impactful include interaction and engagement of the students in their learning, as well as small group instruction with possible scripted lessons.

## **Addressing Teacher Competence and Confidence**

Many teachers that teach students with ASD do not feel confident in their own abilities or fully competent to help these students with academic struggles, particularly reading comprehension. It has been found that great quantities of teachers typically use reading intervention strategies that seem to be the most attainable and realistic to their classroom. Unfortunately, these strategies are not always based on research (Kimhi et al., 2022). Teacher knowledge of traits of students with ASD is encouraged to confidently plan interventions to effectively assist these students academically. One such characteristic of many students with ASD is that they do not perceive others' feelings, thoughts, or emotions in a social aspect. This attributes to not comprehending written works that describe a character and their actions. Students with ASD have difficulty inferring the reasons behind the character's choices, actions, and plans. Kimhi et al. (2022) describes the lack of effectiveness of reading intervention strategies when teachers do not understand the manifestation of reading struggles or characteristics of their students with ASD. These teachers lump students with ASD in the same

category of reading struggles as those students without ASD. It was also noted that if a teacher struggles with prescribed intervention or curriculum, without proper guidance from administration, these strategies are often abandoned for more relatable options to their classrooms. When teachers were properly trained and felt confident in their own abilities to implement a prescribed intervention, it was found that their students improved in reading comprehension (Kimhi et al., 2022). Therefore, it is imperative to prioritize the professional training of teachers working with students with ASD.

### **Comprehension Strategies**

Knight & Sartini (2015) studied strategies to help improve students' comprehension across core subjects. Each core subject incorporates textbooks and reading comprehension is a substantial skill that leads to understanding of subject matter being taught. Students with ASD were found to respond the most optimally with visual supports as well as response prompting strategies. The model, lead, and test (MLT) strategy was the most popular response prompting strategy (Knight & Sartini, 2015). It was suggested that narratives were more challenging for students with ASD due to their limited perceptions of others' intents. To alleviate this challenge, visual supports such as story maps were a successful intervention. Though these supports are encouraged to improve reading comprehension, it was again noted that interventions should be tailored to the individual characteristics of each child with ASD. There is no one size fits all intervention.

Sparapani et al. (2020) addressed the language used within the interaction of an interventionist and a student with ASD. To improve reading comprehension, it has been suggested that open-ended questioning assists in promoting higher-order thinking skills in students during reading exercises. However, due to the ASD characteristics of social inhibitions

and communication deficiencies, open-ended conversation might hinder the interaction between a teacher delivering intervention and a student with ASD. Scripted language lessons help to get reading strategies started, but teachers must be careful not to constrict their use of language solely on the script (Sparapani et al., 2020). Again, teachers are encouraged to find the unique characteristics of their students with ASD and note how they respond to specific types of questioning. Without considering each child's specific traits, the interaction becomes negative and improvement in reading comprehension is futile.

Solis et al. (2022) approached experimentation of reading comprehension strategies on groups of students with ASD. Interventions based on language were noted to be of interest considering students with ASD sometimes display communication deficits. These deficits are typically attributed to behavior challenges, but also contribute to academic struggles. A scaffolding approach to texts with multiple paragraphs was initiated. Students were instructed to break down each paragraph. This began with word, built up to sentence, and then to paragraphs. Students were instructed to first decide if the sentences made sense and then try to identify the main idea of each sentence. This was effective for students with moderate to low-level ASD. While some of the intervention was done in small groups, students were also given the opportunity to work one-on-one, which had a positive outcome. Students were happy to work one-on-one to ask questions and work through comprehension strategies (Solis et al., 2020).

Spector (2011) reported the findings of sight-word instruction to work towards a larger end. The sight-word instruction was targeted towards students with ASD. The results showed that sight-word instruction could lay a foundation as a building block to eventual reading comprehension. Sight-word instruction helped to improve communication skills of those students with limited verbal skills. This suggested that teaching students with limited verbal skills sight-

words before they had alphabetic sound mastery is an approach that should be given a try (Spector, 2011). Benefits of sight-word instruction consist of skills of function in the everyday world to include being able to read menus, recipes, and grocery lists. The weaknesses or concerns for sight-word instruction is possible neglect of bridging the gap and avoidance of teaching reading comprehension. That is not the intended path of this study. The hope is that sight-word instruction will lead to better communication and verbal skills that can further improve comprehension skills.

Arciuli & Bailey (2021) explored the topic of accessing the main five components of reading skills in early instruction for students with autism. It was pointed out that the study of phonics, vocabulary, phonemic awareness, reading comprehension, and reading fluency as a comprehensive strategy has been implemented and researched in studies of children without autism. Arciuli & Bailey (2021) sought to implement this same strategy to students with autism, as there is few research available. This type of reading instruction was found to be effective with students with ASD, but other strategies such as visual supports and technology were also recommended. For each of the five main components, including reading comprehension, it was suggested that small group instruction was most beneficial for students with autism. This is because teachers can plan instruction accordingly to the symptomology of students with ASD (Arciuli & Bailey, 2021).

Carnahan et al. (2009) researched the use of a combination of music with visual supports and interactive reading materials to improve reading comprehension in students with ASD. While these strategies in small groups were used one at a time, the biggest benefits came from using these strategies in combination with each other. All students studied showed improvement in reading comprehension when music was added to the interactive reading materials. There was

also much support for the instruction to be delivered in small groups. Though the combination of strategies did not always improve student engagement, the intervention was reported to fit the teacher's schedule and demands, as well as showed engagement for most students and the teacher (Carnahan, 2009).

Fleury et al. (2021) discuss strategies incorporated in shared book reading as a tool for students with autism to improve reading comprehension skills. The process behind this includes interaction and engagement of students with teachers or interventionists in communication and language skills. These strategies promote open-ended questioning, modeling, visual supports, and repetition. Improvement in inferencing, social skills, and comprehension were recognized. A weakness involved in this strategy is that it cannot be the only strategy used to improve reading comprehension skills in those with autism. The social skills aspect raises concern as students with autism typically display social deficits. This can lead to an aversion of shared reading if not approached correctly. If a student's unique characteristics are considered and planned for, shared reading strategies can improve not only reading comprehension, but vocabulary and language skills as well (Fleury et al., 2021).

### **Synthesis of Findings**

An unexpected common finding among these studies refers to a focus on developing language skills for students with autism as can be seen in Table 1. Research shows that many children with ASD have social and communication skill deficits. With the intention to maximize potential for intervention strategies targeted at reading comprehension, a look at enhancing language skills connects a pathway from oral expression to comprehension.

In addition to language development findings, there were other typical intervention strategies that should not come as a surprise to educators. The use of small group instruction,

visual supports, and student engagement were also common findings. This should not be unexpected to educators as these strategies are also common among students without autism. The latter strategies are used often with students during response to intervention (RTI) at level Tier 3. The students at Tier 3 in RTI are not necessarily students with autism, or even students with learning disabilities (Stecker, 2007).

**Table 1**

*Strategies addressed in included articles*

| Article                  | Language Development | Visual Cues | Technology | Music | Shared Reading |
|--------------------------|----------------------|-------------|------------|-------|----------------|
| Arciuli & Bailey, (2021) | x                    | x           | x          |       |                |
| Carnahan et al., (2009)  | x                    | x           | x          | x     |                |
| Fleury et al., (2021)    | x                    |             |            |       | x              |
| Knight & Sartini, (2015) | x                    | x           |            |       |                |
| Sparapani et al., (2020) | x                    |             |            |       |                |
| Solis et al., (2022)     | x                    |             |            |       |                |
| Spector, J. (2011)       | x                    | x           |            |       |                |

### **Implication for Practice**

Educators can implement strategies that they already know to work with general education students with students with autism as well. This is not to say that intervention strategies will work with every student. Just as each person is unique, so are the characteristics and symptomatology of children with autism. It is imperative that educators and those working with students with autism learn how to help students with autism, and how to recognize the distinctive traits of their students with autism. When looking to improve reading comprehension



among students with ASD, it is encouraged that educators look towards discussion, language development, and communication skills. Working towards open, comfortable communication with students with ASD will assist teachers as they strategize, plan, and implement interventions to improve reading comprehension.

### **Conclusion**

Students with autism that struggle with reading comprehension face challenges that most other students without autism do not face daily. Students with ASD typically have communication and language development deficits. These deficits attribute to struggles in academic areas as well as social aspects of life. Learning the unique characteristics of students with ASD assists teachers when planning and implementing interventions. It is to be noted that assisting students with ASD with language and communication skills can enhance the learning experience and improve reading comprehension strategies.

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