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Dialogic Reading as an Intervention for Developing Reading Comprehension Skills in Early-Literacy School-age Children with Disabilities

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A thesis

presented to

the faculty of the Department of Educational Foundations and Special Education

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Education in Special Education, concentration in Advanced Studies

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by

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ABSTRACT

Dialogic Reading as an Intervention for Developing Reading Comprehension Skills in Early-Literacy School-age Children with Disabilities

by

Kristi Burnette

The purpose of this study was to investigate the effects of dialogic reading as an intervention on participant ability to answer "wh" comprehension questions correctly and independently. Previous research was conducted with young individuals with autism spectrum disorder (ASD), leaving a gap in the research with older participants. Participants included three students in upper elementary grade 5, identified with a known deficit in reading comprehension and ASD to further extend the research on dialogic reading as an intervention strategy. A multiple probe across participants design was used to determine efficacy of the intervention. Data collection probes were conducted during baseline, intervention, generalization, and maintenance phases to determine efficacy of the intervention on participant ability to answer "wh" comprehension questions. Results indicate an increase in participant ability to answer comprehension questions while engaging in dialogic reading lessons for two participants. Limitations and implications for future research and practice will be discussed.

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Chapter 1. Introduction

Essential early literacy skills, including comprehension that develop at a younger age have been connected to subsequent literacy performance later in a child's academic career (Coogle et al., 2020). Reading is one of the most foundational academic skills a student will need to attain for continued success in the classroom and the community (Miller et al., 2013). Reading proficiency is an essential component for overall academic success and strong correlations can be seen between early and later reading skills (Rahn et al., 2016). Children with disabilities are often not given access to the high-quality engaging activities that have become standard evidence-based practices (Fluery & Schwartz, 2016).

Understanding Educational Deficits in Reading Comprehension

The ability to understand and comprehend written and spoken text is an essential skill for the school setting, however, many students of all ages will experience deficits in this area throughout their educational career (Miller et al., 2013). Before continuing discussion of educational deficits in reading comprehension, we must first define what reading comprehension is. Reading comprehension requires the reader to recognize words on the page, access meaning from those words individually, identify connections between those words, and then determine meaning from those words in context to the text as a whole (Miller et al., 2013).

Reading Comprehension deficits are prevalent and common with students diagnosed with cognitive impairments and autism spectrum disorder. In a study investigating reading ability patterns in students with autism, Nation et al. (2006) determined that students with autism have significant delays in the reading comprehension compared to that of their peers with similar IQ ranges, regardless of reading accuracy. Students with autism spectrum disorders often have difficulty identifying either the large picture, or the small details, resulting on comprehension

deficits. Students with cognitive deficits often lack the ability to decode the words presented to begin reading for comprehension (Nation et al., 2006). Reading comprehension requires the reader to coordinate the use of multiple levels of language, a concern for students with autism, along with cognitive function, a concern for students with cognitive deficits, leaving many areas for research to continue in this area (Landi & Ryherd, 2017).

Cooperman (2013) created a visual relating to a tapestry picture to explain a cause of deficits in reading comprehension. Cooperman further explains that, like a tapestry picture, reading comprehension requires the reader to use many skills simultaneously; if one of these skills is lacking, then the overall comprehension of a passage will be lacking as well. Nation et al. (2006) further supports that image by stating that reading is a complex skill that requires the use of a number of skills at once to gain meaning. Due to the high number of skills being used during reading comprehension, educational deficits are widespread and common in this area. In order to combat these deficits, research has been continuously conducted to attempt to mitigate these educational deficits.

Dialogic Reading as an Explicit and Systematic Instructional Model

Wagner et al. (2021) refers to data from the US Department of Education when stating only about one third of fourth and eighth grade students score proficiently in reading comprehension, leaving two thirds of students in the U.S. showing deficits in reading comprehension indicating a need for explicit and systematic instruction in reading comprehension.

One method identified to increase essential literacy skills and provide opportunities to engage in activities that support this engagement in young children with disabilities is dialogic reading. What Works Clearinghouse (2007) defines dialogic reading as an intervention with

positive treatment outcomes for oral language and early reading/writing. Dialogic reading uses standardized prompts to target listening comprehension skills by having teachers to (a) ask students open-ended questions about a story, (b) expand on student answers by repeating their answer and asking deeper questions, (c) praise students for participation, and (d) use student interests and preferences when selecting stories (Morgan & Meier, 2008). When using dialogic reading strategies, the teacher will read with a focus specifically on the pictures in the book, which lends itself to use with younger students. The teacher will ask students completion, wh-, and application-based questions across the different levels of Bloom's Taxonomy (Rahn et al., 2016). Dialogic reading provides teachers with a structure to promote conversation about the events in the story, as well as promote comprehension (Brooke & Bramwell, 2006).

There are several recommended guidelines for the implementation of dialogic reading. Dialogic reading should be implemented with repeated readings in the small-group classroom setting. Following best practices, no group should be larger than five participants (Morgan & Meier, 2008). Coogle et al. (2020) explains that implementation of dialogic reading is conducted in three levels with progressive difficulty. Level 1 includes wh- questions. This level helps the child develop the vocabulary needed to begin to answer the open-ended questions and discuss the story appropriately as seen in further levels. Level 1 can also include questions of identification, function shape, and color (Coogle et al., 2020). Level 2 and 3 questions are asked in subsequent readings and typically include open-ended questions and questions that begin to connect the story to the child's life (Coogle et al., 2018). These types of questions fall into the CROWD acronym of prompts used in dialogic reading: (C) completion, (R) recall, (O) open-ended, (W) wh- questions, (D) distancing (Morgan & Meier, 2008). Along with leveled questioning, dialogic reading consists of the use of a sequence of prompting and response techniques identified as the

acronym PEER. PEER stands for (P) prompt, (E) evaluate, (E) expand, (R) repeat (Morgan & Meier, 2008). When used with fidelity, the strategies outlined in dialogic reading can provide children with disabilities with early literacy skills, including reading comprehension, needed to develop reading proficiency later in their academic careers.

While the research on dialogic reading is extensive, there are a few studies that highlight the evolution of dialogic reading instruction. First, Lever and Sénéchal (2011) conducted research to investigate if shared reading interventions, specifically dialogic reading would improve participants' narrative ability. They used an alternating treatments design with forty kindergarten students from a large city in Canada. Overall results indicated that participants showed growth in narrative ability. Suggestions for future researchers and practitioners include using dialogic reading strategies and practices to promote and improve students' oral story construction and discussion. Lever and Sénéchal (2011) suggested research continue to be conducted in dialogic reading surrounding story aspects and oral participation in interventions.

Fluery and Schwarz (2017) conducted research to extend the research and evaluate aspects of oral language and vocabulary, as well as to evaluate the feasibility of the intervention for educators. Researchers used single-case multiple baseline design to evaluate the effects of dialogic reading on levels of verbal participation and vocabulary growth in preschool children diagnosed with autism spectrum disorder. Nine students and five paraeducators were subjects for this study. Results showed an increase in verbal participation and vocabulary growth for all nine participants. Limitations of this research included the grouping of student participants with paraeducators. Paraeducators often read to multiple students during interventions. Authors suggested that future research be done to compare and track data with different ages of students. This research confirmed the ease and feasibility of implementation of dialogic reading

interventions, along with efficacy of the intervention, and provided a foundation for future research to be conducted around dialogic reading.

Reading comprehension is essentially reading the text with a purpose of engagement and determining meaning (Wagner et al., 2021). Despite the widespread data to support the importance and scope of reading comprehension deficits in students with autism or cognitive disabilities, there is a significant lack of research for students with reading difficulties in upper elementary grades (Capin et al., 2021). While researchers have determined the efficacy of using dialogic reading as an effective reading intervention method, research is limited. Towson et al. (2016) noted the benefits and established dialogic reading as an evidence-based practice strategy for preschool children at risk for early intervention, yet there is limited research for pre-literacy skills of K-5 children with disabilities. Previous research studies have only focused on a sample of the population of struggling readers, including preschool, kindergarten, and students with autism spectrum disorder (Fluery & Schwarz, 2016; Rahn et al., 2016; Towson et al. 2016). These studies also are limited in the type of reading deficit they are addressing; studies have previously addressed dialogic reading as a strategy of vocabulary acquisition, narrative ability, and story construction. Further research is needed to evaluate the efficacy of dialogic reading as an intervention of older elementary-age participants, as well as its efficacy with reading comprehension. Limitations of previous research studies are the lack of evaluation of reading comprehension as a result of dialogic reading intervention strategies. The research is also lacking in analyzing the effects on participants' active participation while engaging in dialogic reading interventions. Therefore, the purpose of this study is to evaluate the effects of dialogic reading-based interventions on participant ability to answer "wh" comprehension questions and active

participation for upper age elementary-age students with moderate intellectual disabilities including ASD.

The following research questions were addressed:

1. What is the effect of Dialogic Reading on upper elementary-age transitional readers with ASD's ability to correctly answer "wh" comprehension questions?
2. Is there a difference in active participation prior to dialogic reading interventions versus after exposure to dialogic reading interventions?
3. Is there a difference in participants' interest in reading prior to dialogic reading interventions versus after exposure to dialogic reading interventions?

Chapter 2. Literature Review

Reading is an unavoidable part of everyday life for humans of all ages and skill levels, resulting in a large reliance on reading skills for overall functioning. Reading is a highly complex skill needed for success in society due to the large amount of information communicated in written form (Rayner et al., 2012). Reading is an important daily living skill used for a variety of functional tasks including communication through a variety of methods, obtaining, and maintaining employment, navigating street signs or bus routes, to name a few. Much of today's daily communication and social relationship building involves reading, whether it be an email, text message, note, or social media post. These are but a few ways that humans today use reading as a part of their daily life experiences.

The emphasis and importance of reading is not lost on educators and reading has long been a primary focus in the classroom. Beginning in the nineteenth century, teachers used the alphabetic approach where students learned the letters and sounds, then put them together into syllables, and the fascination with oral reading was peak (Dodd, 1967). The turn of the twentieth century came with a focus on the methods of reading, the use of basal readers throughout elementary school classrooms, the introduction of silent reading instruction, and the purpose of reading being more about getting information, than about performing for an audience (Dodd, 1967). However, educators in the present day have begun to shift instructional techniques once again to focus more on small group instruction and close readings of a text to promote understanding and comprehension (Dodd, 1967). With the intensive importance of reading instruction in the classroom, it is essential that all students receive high-quality, evidence based instructional practices in reading. However, that has not always been the case for students with disabilities and complex support needs. Browder et al. (2006) references Hodges (1980) and

stated reading comprehension is the goal of reading instruction, however, teachers spend little time providing instruction in comprehension. This study extended the current research on reading comprehension by analyzing and evaluating the effects of dialogic reading strategies on reading comprehension of upper elementary age students with disabilities. Below will highlight important research on the path to identifying this research topic.

Creating Inclusion and Access for All

The notion of inclusion of students with disabilities into the general education curriculum is becoming a cultural norm started by the enactment of Public Law 94-142: The Education for All Handicapped Children Act (EHA) of 1975 (Keogh, 2007). This law at its core ensured access to public education for students with disabilities without discrimination. PL 94-142 ensures students receive a free and appropriate public education (FAPE) in the least restrictive environment (LRE). This law mandates that children suspected of a disability age 3-21 be evaluated by a professional, and if found eligible by the criteria outlined in PL-94-142, be offered special education services upon parental consent. Once determined eligible, it was mandatory that a child have an Individualized Education Plan (IEP) to outline a specific plan for the specialized education, services, and goals for the student (United States Congress, 1975).

While students are required to have an IEP that includes service plans and goals, the rigor and academic access for a student with disabilities was not yet clarified by the Education for All Handicapped Children Act (EHA) of 1975. Within the last decade, there have been many law reforms made to increase the rigor of education for students with disabilities, as well as push to include them in the general education classroom setting alongside their peers (Peterson A., 2015). The Individuals with Disabilities Education Act (IDEA), formally EHA was reauthorized in 1997 and 2004 and now sets an expectation for students with disabilities to access participate

in the general education classroom. In combination with the No Child Left Behind Act (2002), IDEA now ensures students are accessing the general education curriculum and included in accountability systems, however, the instructional methods to be used to help students with disabilities, including those with ID, access that curriculum was still not fully understood.

The lack of understanding of instructional methods to be used with students with disabilities in the general education classroom setting shifted researchers focus. The funding that followed the mandates of ESSA only pushed researchers further to identify more effective educational strategies to allow students with disabilities to access the general education curriculum in meaningful ways. ESSA required that students, regardless of educational status, be educated to high academic standards that will ultimately prepare students for success in college or various career paths. ESSA provided mandates on end-of-year assessments, requiring all students to take part in some form of assessment. The mandate also dictated that only 1% of the student population may qualify for alternative assessment methods, and only when those students cannot participate in state assessments even with accommodations provided to them (Every Student Succeeds Act, 2015). This mandate resulted in a hyper focus on low performing populations, including those with disabilities, specifically in reading. The requirements and mandates of ESSA caused researchers to refocus on identifying evidence-based practices that provide access for students with disabilities in the general education classroom setting.

Explicit Instruction for Students with Disabilities

Explicit instruction is not a single intervention with a single use, but explicit instruction can be a combination of multiple instructional components and strategies used for the design and delivery of instruction (Hughes et al., 2017). Archer and Hughes (2010) define explicit instruction as a structured, systematic, effective, unambiguous, and direct method for providing

instruction that includes both the instructional design and the delivery of said instruction. Explicit instruction includes a series of scaffolds where students continuously receive clear explanations and demonstrations of the learning target and continue to practice while receiving feedback until target mastery is reached. Archer and Hughes quote Rosenshire (1987) in defining explicit instruction as a systematic instructional delivery method that focuses on small steps, checking for student understanding, and achieving high levels of student participation.

Researchers have defined explicit instruction as a combination of many different instructional strategies combined in one instructional task, however, researchers continued to dive deeper through literature studies to determine the essential components of explicit instruction. Hughes et al. (2017) outlined five major pillars to explicit instruction: (a) segment complex skills, (b) draw student attention to important features of the text through modeling and think-alouds, (c) promote engagement through the use of systematically faded supports, (d) provide opportunities for students to respond and receive feedback, and (e) create purposeful practice opportunities. Archer and Hughes (2010) took their research a step further and outline sixteen essential elements of explicit instruction: (a) focus instruction on critical content, (b) sequence skills logically, (c) break down complex skills and strategies into smaller parts, (d) design organized and focused lessons, (e) begin lessons with a clear statement of the lesson's goals and your expectations, (f) review prior skills and knowledge before beginning instruction, (g) provide step-by-step demonstrations, (h) use clear and concise language, (i) provide an adequate range of examples and non-examples, (j) provide guided and supported practice, (k) require frequent responses, (l) monitor student performance closely, (m) provide immediate affirmative and corrective feedback, (n) deliver the lesson at a brisk pace, (o) help students organize knowledge, and (p) provide distributed and cumulative practice.

Much research has been conducted on the effects of explicit instruction on students with extensive support needs with many positive outcomes. Root (2017) conducted research on the effects of explicit instruction on the acquisition and generalization of mathematical concepts using a single-case multiple probe across behaviors design with one fourth grade student with ASD. Results indicated a functional relation between explicit instruction and participant ability to independently identify mathematical concepts, concluding explicit instruction is an effective method for teaching mathematical concepts to students with severe support needs. Furthermore, McKissick et al. (2013) researched the effects of computer assisted explicit instruction on map-reading skills for students with autism. Participants included three students grades 3-5 diagnosed with ASD and severe support needs. McKissick et al. used a multiple probe across participants design using explicit instructional strategies in all instructional trials. Two students met criterion and showed a large increase in trend and level for map-reading skills; however, one student did not show growth potentially due to the end of the school year. Research conducted by McKissick et al. once again highlighted the effectiveness of explicit instruction techniques for students with extensive support needs. A third research team, Knight et al. (2012), analyzed the effects of explicit instruction on teaching science descriptors to students with ASD using a multiple probe across behaviors with concurrent replication across participants' design. Knight et al. (2012), taught participants science descriptor words through explicit instruction, then generalization of those terms to novel objects. All participants met criterion and a functional relation was observed, indicating overall effectiveness of explicit instruction. Explicit instruction has been used to effectively provide instruction to students with extensive support needs, specifically ASD, on academic and functional skills. Continued research has indicated that when combined

with systematic instructional practices, explicit instruction continues to yield positive outcomes and results (Knight et al., 2012; McKissick et al., 2013; Root et al., 2017)

Systematic Instruction Techniques for Students with Disabilities

Systematic instruction has been used with students with disabilities with much success for many years. Systematic instruction is rooted directly in the principles of applied behavior analysis (ABA) and focuses on the antecedent, behavior, and consequence when conducting instructional trials (Collins 2012). Systematic instruction also focuses highly on the prompting strategy used to elicit the desired target behavior. Spooner et al. (2012) defined systematic instruction as a set of procedures that in combination with the use of ABA principles to promote transfer of stimulus control, (a) use data to show acquisition of chosen skills from introduction to intervention, (b) provide observable and measurable definitions of teachable and socially relevant skills, (c) and teach skills that are generalizable. Systematic instruction techniques have been heavily researched with individuals with ID and proven to be widely effective teaching a variety of academic and functional tasks to students with extensive support needs.

Due to the understood effectiveness of systematic instruction, researchers began to implement research studies to further our understanding of systematic instruction techniques for students with disabilities. Research conducted by Jimenez et al. (2008) evaluated the effects of systematic instruction, specifically the use of concrete representation and systematic prompting strategies to evaluate three high school students' acquisition of algebra skills. Participants in this study all met mathematical criteria and interventions were provided by the classroom teacher. This was the first known study to evaluate systematic instruction principles to teach math skills to high school students with moderate to severe disabilities. Results indicated students were successful in learning how to complete algebra problems with the use of systematic instruction

paired with concrete representation, indicating a functional relation between the use of systematic instruction principles and acquisition of new skills for students with disabilities.

Spooner et al. (2014) researched systematic instruction around reading comprehension when researchers evaluated the effectiveness of systematic instruction, including task analysis and constant time delay, paired with the use of an iPad and shared stories to increase student listening comprehension. Researchers implemented a task analysis to monitor student responses throughout the research study, another principle important to the effectiveness of systematic instruction. Results indicated an increase in student independent responses on the task analysis from baseline to intervention data, indicating a functional relation and effectiveness of systematic instruction. Greene and Bethune (2021) further explored systematic instruction by researching the effects of systematic instruction principles in a group setting to teach science, specifically the identification of vocabulary words, to students diagnosed with ASD. Researchers used a combination of errorless learning principles, constant time delay, rooted in systematic instruction that resulted in a functional relation indicating that systematic instruction can be effective when teaching science in a group setting.

As demonstrated by the above research studies, by systematically planning instruction and using systematic instructional principles that is highly structured, and strategically builds upon concepts from simple to complex, researchers have been able to identify continuous improvement possibilities for students with disabilities.

Challenges and Identification Areas for Students with Reading Disabilities

Due to federal mandates from IDEA, NCLB, and the ESSA, all students are expected to access and interact with the general education curriculum, researchers have begun to focus on interventions and strategies proven effective in providing support to students with complex

support needs in reading. Before beginning providing target intervention strategies in areas of need, researchers must determine the specific areas of reading where students are experiencing challenges and discrepancies in skills.

Many students experiencing difficulties in reading are identified and receive special education services through IDEA. Students have historically been identified as having challenges in reading through the use of the discrepancy model; this model requires an evaluation and comparison of the students overall IQ and reading ability scores to determine if there is a discrepancy (Aaron et al., 2008). Schools are beginning to move away from this model when identifying challenges in reading for students and are beginning to look more towards identifying the specific area of discrepancy experienced by the student. According to IDEA 2004, students can be identified for special education services and receive academic support in reading in the following areas: significant learning disability in basic reading skills, significant learning disability in reading comprehension, developmental disability, intellectual disability, other health impairment, or autism spectrum disorder. One common area for students to experience reading deficits is in phonological processing, which is defined as the ability to analyze, understand, and apply the phonological structure of words (Kudo et Al., 2015). Other components of reading where students can experience challenges and deficits are in the areas of word recognition, nonword or nonsense word decoding, accuracy, and comprehension. (Nation et al., 2006). While a few areas of challenge have been listed above, it is important to note that reading challenges can vary across individuals and students could experience challenges in the area of reading in ways not listed above.

Stages of Literacy Development

It is clear that students with disabilities face challenges in reading and interventions are needed to close the gap between students with disabilities and their same age peers. However, before beginning to consider what interventions to use when providing reading instruction to students with disabilities, it is important to understand the stages of literacy development and reading that a child will pass through before reaching and becoming a fluent reader. It is important to note, while these stages of literacy development follow a linear path, students with disabilities might experience these stages at a later age compared to their same age typical peers.

Chall (1983) describes six stages of reading development across the lifespan that continue to be adapted throughout reading and literacy development research. Children ages birth to 6 years of age are included in Stage 0, the pre-reading stage. This stage can also be identified as the emergent literacy stage where students are first exposed to print, begin to learn graphemes, as well as identify and memorize words throughout their environment (Skebo et al., 2013). Typical behaviors of this stage include enjoying being read to, recognizing letters, begins to develop phonological awareness, and begins to pretend to read familiar texts (Ontario Principals' Council, O.P., 2008). Children then enter the decoding or beginning literacy stage, Stage 1, in years 6-7, or first and second grade, and includes a development of letter-sound correspondence and the development of sight word recognition. Chall (1983) determined Stage 2 as the confirmation and fluency stage, or the beginning fluency stage. Typically developing children experience this stage at 7-9 years of age, or second and third grade, and begin to use decoding skills, coupled with context clues from the text to develop fluent reading skills. Stage 3, or the literacy for growth stage, is reached by typically developing children at ages 10-12, fourth to eighth grade. Skills of Stage 3 includes reading for pleasure or to gain new knowledge and

connecting back to prior knowledge; in this stage, the transition from learning to read and reading to learn most often occurs (Skebo et al., 2013; Ontario Principals' Council, O.P., 2008). Once Stage 4, multiple viewpoints, and Stage 5, construction and reconstruction, has been reached, which includes high school and beyond, children are considered literate and are able to read and process complex information and language (Skebo et al., 2013).

Recognizing an understanding of the continuum of literacy development should guide the selection of evidence based explicit instructional strategies to improve student reading skills and guide students through the different levels on literacy with a focus on achieving Stages 3-5 and encountering the transition from learning to read to reading to learn.

Reading Comprehension Instruction for Students with Extensive Support Needs

Essential early literacy skills, including comprehension that develop at a younger age have been connected to subsequent literacy performance later in a child's academic career (Coogle et al., 2020). Reading proficiency is an essential component for overall academic success and strong correlations can be seen between early and later reading skills (Rahn et al., 2016). Children with disabilities are often not given access to the high-quality engaging activities that have become standard evidence-based practices (Fluery & Schwartz, 2016).

In school settings, early elementary age students are more often engaging in oral reading activities than their later elementary school counterparts. Teachers are not providing students with the necessary instruction to comprehend texts when silently reading (Robinson et al., 2019). Robinson et al. (2019) evaluated the modality best suited for improving reading comprehension skills when researchers evaluated the influence of oral versus silent reading on reading comprehension skills. Participants were asked to read aloud and silently read passages and then provide a one minute retell. Researchers compared data across early elementary school

participants and late elementary students in both modalities. Results for early elementary school participants indicated higher comprehension levels with oral reading as compared to silent reading. However, results for late elementary school students did not demonstrate a statistically significant relationship between the two. It should be noted, researchers determined growth across fall and spring semesters to be the result of classroom instruction over time. Research conducted provides practitioners with evidence on what modality of reading to use based on student age and literacy development, however, more information is needed to determine specific evidence based instructional strategies to use with students with extensive support needs.

Following the move towards inclusion and access for all students, Kamps et al. (1994) researched the effects of class wide peer tutoring on improving reading strategies. Researchers used a multiple baseline across participants with reversal design with three male students with autism. Dependent variables included responses to reading comprehension questions after reading. Results indicated a functional relation between class wide peer tutoring and reading comprehension skills with an increase from baseline to intervention in both sessions. This research provides practitioners with one method for increasing reading comprehension skills in the general education classroom setting.

Furthering the research on reading comprehension instructional practices for students with extensive support needs, O'Connor et al. (2004), conducted research which evaluated the effects of a variety of instructional facilitation strategies on increasing participants', including 25 high functioning children with autism, reading comprehension abilities. Researchers implemented the following strategies: anaphoric cuing, pre-reading questions, and cloze sentences across participants in multiple trials. Results indicated modest comprehension across all participants. Anaphoric cuing trials resulted in an increase in trend and level and medium

effect sizes in reading comprehension for participants. The effects of pre-reading questions, as well as cloze sentences yielded small and not significantly significant effects on participant reading comprehension and was not identified with a functional relation for improvement. O'Connor et al. (2004) not only provides one confirmed instructional strategy for practitioners, but also eliminates two instructional strategies proved ineffective for increasing reading comprehension strategies.

Dialogic Reading to Teach Reading Comprehension Skills for Students with Disabilities

One method identified to increase essential literacy skills and provide opportunities to engage in activities that support this engagement in young children with disabilities is dialogic reading. What Works Clearinghouse (2006) defines dialogic reading as an intervention with positive treatment outcomes for oral language and early reading/writing. Dialogic reading uses standardized prompts to target listening comprehension skills by having teachers to (a) ask students open-ended questions about a story, (b) expand on student answers by repeating their answer and asking deeper questions, (c) praising students for participation, (d) use student interests and preferences when selecting stories (Morgan & Meier, 2008). When using dialogic reading strategies, the teacher will read with a focus specifically on the pictures in the book. The teacher will ask students completion, wh-, and application-based questions (Rahn et al., 2016). Dialogic reading provides teachers with a structure to promote conversation about the events in the story, as well as promote comprehension (Brooke & Bramwell, 2006).

There are several recommended guidelines for the implementation of dialogic reading. Dialogic reading should be implemented with repeated readings in the small-group classroom setting. Following best practices, no group should be larger than five participants (Morgan & Meier, 2008). Coogle et al. (2020) explains that implementation of dialogic reading is conducted

in three levels with progressive difficulty. Level 1 includes wh- questions. This level helps the child develop the vocabulary needed to begin to answer the open-ended questions and discuss the story appropriately as seen in further levels. Level 1 can also include questions of identification, function shape, and color (Coogle et al., 2020). Level 2 and 3 questions are asked in subsequent readings and typically include open-ended questions and questions that begin to connect the story to the child's life (Coogle et al., 2018). These types of questions fall into the CROWD acronym of prompts used in dialogic reading: (C) completion, (R) recall, (O) open-ended, (W) wh- questions, (D) distancing (Morgan & Meier, 2008). Along with leveled questioning, dialogic reading consists of the use of a sequence of prompting and response techniques identified as the acronym PEER. PEER stands for (P) prompt, (E) evaluate, (E) expand, (R) repeat (Morgan & Meier, 2008). When used with fidelity, the strategies outlined in dialogic reading can provide children with disabilities with early literacy skills, including reading comprehension, needed to develop reading proficiency later in their academic careers.

Dialogic Reading Research for Preschool-age Students

Fluery and Schwarz (2017) conducted research to extend the research and evaluate aspects of oral language and vocabulary, as well as to evaluate the feasibility of the intervention for educators. They used single-case multiple baseline design to evaluate the effects of dialogic reading on levels of verbal participation and vocabulary growth in preschool children diagnosed with autism spectrum disorder. Nine students and five paraeducators were subjects for this study. Researchers conducted this study in order to extend the research to evaluate aspects of oral language, as well as to evaluate the feasibility of the intervention for educators. Results obtained by the authors showed an increase in verbal participation and vocabulary growth for all nine participants. Limitations included the grouping of student participants with paraeducators.

Paraeducators were often reading to multiple students during interventions. Authors suggest that future research be done to compare and track data with different ages of students. This research confirms the ease and feasibility of implementation of dialogic reading interventions, along with efficacy of the intervention, and provides a foundation for future research to be conducted around dialogic reading.

Another study by Towson et al. (2016) builds upon previous research evaluating the association between dialogic reading interventions and vocabulary. The authors used a pretest-posttest quasi-experimental design method to investigate the effects of various dialogic reading strategies on promoting vocabulary and pre-literacy skills of young children with disabilities. Participants were students ages three to five in an urban school system identified with a developmental delay. In this study, children were randomly assigned to an intervention or a control group with both groups containing twenty-one students from both inclusion and self-contained classroom settings. Results showed growth for the intervention group over the comparison group in the areas of receptive and expressive vocabulary skills. However, results did not show a change in results when standardized measures were used to measure vocabulary and pre-literacy skills. This absence of change in Townson's research shows a gap in the research calling for more research to be done with dialogic reading.

Dialogic Reading Research for School-age Students

Lever and Sénéchal (2011) conducted research to investigate if shared reading interventions, specifically dialogic reading, would improve participants narrative ability. They used an alternating treatments design with forty kindergarten students from a large city in Canada. Overall results indicated that participants showed growth in narrative ability. Suggestions for future researchers and practitioners include using dialogic reading strategies and

practices to promote and improve students oral story construction and discussion. Lever and Sénéchal (2011) suggest research continue to be conducted in dialogic reading surrounding story aspects and oral participation in interventions.

Coogle and several colleagues have conducted research evaluating the efficacy of dialogic reading as a standalone intervention, as well as coupled with other intervention components to address limitations in dialogic reading research. Coogle first worked with Rahn in 2016 while researching dialogic reading and activity-based instruction. Rahn et al. (2016) conducted a study using an adapted alternating treatment design to compare the effectiveness of dialogic reading strategies and activity-based intervention on participant usage of thematic vocabulary. Participants included three kindergarten age students with developmental delays in public school settings in a small Mid-Atlantic city. Results indicated an increase in students' thematic vocabulary use across both conditions. Moreover, students maintained skills taught in the intervention better in the dialogic reading condition, but generalized skills taught in the intervention better in the activity-based-instruction. This research once again confirmed dialogic reading as an effective intervention strategy; however, Coogle continued to adapt and modify dialogic reading interventions in future research to extend the literature.

Modifications of Dialogic Reading

For example, in 2018, Coogle partnered with Floyd and Rahn to evaluate the efficacy of a new dialogic reading component, dialogic reading plus technology (DR + T). Coogle et al. (2018) used a single case, adapted alternating treatment design to investigate the impact of Dialogic Reading on the vocabulary acquisition of three preschool students with autism spectrum disorder in an inclusive classroom setting. Researchers introduced two treatment methods: dialogic reading (DR), and DR + T. Overall results indicated an increase in student vocabulary

outcomes across all conditions and participants. Limitations of this study included the non-measurement of generalization and maintenance treatment effects due to lack of time. Suggestions for future research included the need for replication to evaluate effectiveness in other student characteristics, as well as measurement of long-term intervention maintenance and generalization. Additionally, authors recommended that practitioners offer learners a choice between paperback reading and technology reading. Coogle again partnered with other researchers in the field to further research conducted in this study by comparing more components of dialogic reading.

Moreover, Coogle determined a new dialogic reading component, dialogic reading plus modeling, and researched its efficacy compared to dialogic reading without modeling (Coogle et al., 2020). Coogle et al. conducted a study comparing dialogic reading, modeling, and dialogic reading plus modeling with the use of an alternating treatment, single-case research design. Specifically, they sought to investigate the effects of these strategies on the vocabulary acquisition of two preschool age students diagnosed with autism spectrum disorder. Specific participant results showed improvement across baseline and intervention conditions across all treatments. Results in comparing treatment methods indicated effectiveness in all three conditions, dialogic reading showed the most participant improvement from baseline to intervention. Limitations noted by the authors included exposure duration. Authors suggest future researchers to also evaluate generalization of the methods. It is recommended by the authors in the concluding portion of this research that practitioners now begin to implement dialogic reading into the classroom setting.

Dialogic Reading as an Intervention for Developing Reading Comprehension Skills in Early-Literacy School-age Children with Disabilities

While the aforementioned researchers have determined the efficacy of using dialogic reading as an effective reading intervention method, these studies are limited. Towson et al. (2016) notes the benefits and establishment dialogic reading as an evidence-based practice strategy for preschool children at risk for early intervention, yet there is limited research for pre-literacy skills of K-5 children with disabilities. Previous research studies have only focused on a sample of the population of struggling readers, including preschool, kindergarten, and students with autism spectrum disorder. These studies also are limited in the type of reading deficit they are addressing. Further research is needed to evaluate the efficacy of dialogic reading as an intervention of older elementary-age participants. These studies also are limited in the type of reading deficit they are addressing; studies have previously addressed dialogic reading as a strategy of vocabulary acquisition, narrative ability, and story construction. Limitations of previous research studies are the lack of evaluation of reading comprehension because of dialogic reading intervention strategies.

Chapter 3. Methods

Participants

The participants of this study were four elementary age students in fifth grade. All participants received special education services via an active IEP compliant with IDEA in the special education classroom setting of a public school system. All participants in the study met the inclusion criteria listed below. Any participants that did not meet criteria were excluded from the study:(a) In the early reader stage. Early readers are able reread a text for understanding, to use text and illustrations to retell details of a story, and are able to decode words in a text; (b) has a developmental or cognitive delay, intellectual disability, and or autism; (c) able to attend to a dialogic reading lesson for 20-30 minutes; (d) has ability to answer questions in a consistent, reliable manner (e.g. verbal, cue cards, picture symbols, AAC devices). Permission for participation will be granted by a parent or guardian for all participants. Parents or guardians will be informed of all study components, as well as that they can are able to withdraw their child from the study at any time without explanation or repercussions.

Participant 1: Kevin Jr.

Kevin Jr., who was 11 years old and in fifth grade, was a white male who received special education services under the category of Autism Spectrum Disorder. Kevin Jr. had been receiving services under this disability category since second grade. Kevin Jr.'s most recent evaluation indicates no abnormalities in physical medical history; however, he presented with signs and symptoms of ASD from a young age. Results of the Childhood Autism Rating Scale, Second Edition (CARS-2) were a T-Score of 40, indicating that Kevin Jr. displayed severe symptoms of Autism Spectrum Disorder. Due to these scores, it was determined that Kevin Jr. would receive programming through the Autism Center Program through the local county public

school system. Kevin Jr. was also administered the Clinical Evaluation of Language Fundamentals, 5th Edition. Results of the Core Language Composite place Kevin Jr. in the low to very low ability for language functioning. Kevin Jr. scored in the low or at-risk range for expressive, receptive, and pragmatic language skills. As a result of these scores, Kevin Jr. received speech and language services. Kevin Jr. was also given the Kaufmann Test of Academic Achievement (KTEA-3). He scored in the below average range, and below the 10th percentile, in all academic subtest areas. Per the results of the KTEA-3, Kevin Jr. received academic support at the time of intervention. Evaluations indicated no behavior concerns at the time of completion.

To support his academic needs, Kevin Jr. received academic support from the ASD Center Program in a resource classroom for 225 minutes weekly. Kevin Jr. remained in his general education classroom for at least 80% of his school day. His IEP included the following goal for reading comprehension: When presented with an instructional level text, Joseph will be able to answer wh comprehension questions with 80% accuracy for 4 out of 5 consecutive trials as measured by bi-weekly progress monitoring probes. Per present levels of Kevin Jr.'s IEP, there were no major concerns with fluency or accuracy with text at instructional level at the time of intervention. Kevin Jr. was easily distracted by recordings during the onset of sessions, but displayed no other behavior concerns across sessions.

Participant 2: Cat

Cat, who was 11 years old and in fifth grade, was a white female who received special education services under the category of Autism Spectrum Disorder. Cat previously received services under the disability category of Emotional Disability. Cat received an outside diagnosis of ASD in 2021. In her last evaluation, Cat was given the Weschler Intelligence Scale for Children, 5th Edition (WISC-V). Results from this evaluation were inconclusive as Cat was

unable to complete the exam due to behavior dysregulation. Cat was also given the Clinical Evaluation of Language Fundamentals, 5th Edition. Cat's scores indicated a moderate delay in expressive and receptive language. As a result of these scores, Cat received speech and language services. The Checklist for Autism Spectrum Disorder (CASD) was administered based on Cat's behaviors; Cat received a score placing her in the borderline range for symptoms of Autism Spectrum Disorder. No formal reading evaluations were completed at the time of the last evaluation; a review of records was completed. Review of records indicated that Cat was reading at a level E or F, a first-grade level text. Cat's behaviors during the time of formal evaluation impacted her ability to complete assessments and gain an accurate picture of her abilities at the time of evaluation. At the time of intervention, Cat's behaviors were minimal, and she was able to attend and perform tasks appropriately.

To support her academic needs, Cat received academic support from the ASD Center Program in a resource classroom for 875 minutes weekly. Cat's IEP included the following goal for reading comprehension: When read aloud a grade level text, Cat will be able to answer comprehension questions including who, what, when, where, and why, for 4 out of 5 questions as measured by bi-weekly progress monitoring. Cat also had a fluency and accuracy goal due to concerns in that area. Her IEP goal in fluency was: When given instructional level reading passages, Cat will read with 85% accuracy as measured by bi-weekly progress monitoring probes using DIBELS 8 or Rigby Readers. Cat demonstrated undesired behavior at the time of research, however, did not have impacts on data collection.

Participant 3: AFK

AFK, a, 11-year-old 5**th** grade white male, who received special education services under the category of Autism Spectrum Disorder. AFK had been receiving services under this disability

category since second grade. Kevin Jr.'s most recent evaluation indicates no abnormalities in physical medical history. AFK did present concerns with reaching typical developmental milestones. AFK and had some previous emotional trauma that does not currently impact him in any capacity. Classroom teacher observations indicated concerns in focus, sensory processing, and overall academics. Results of the Autism Spectrum Rating Scale (ASRS) indicated AFK demonstrated many behaviors related to Autism including stereotyped behaviors, atypical language, behavioral rigidity, and sensory sensitivity. Due to these scores, it was determined that AFK. would receive programming through the Autism Center Program through the local county public school system. AFK was given the Clinical Evaluation of Language Fundamentals, 5th Edition as a part of his last evaluation. Results of the Core Language Composite place Kevin Jr. in the average range for core language and receptive language but scored in the at-risk range for expressive language. As a result of these scores, AFK received speech and language services for expressive language. AFK was also given the Kaufmann Test of Academic Achievement (KTEA-3). AFK scored in the below average range, and below the 10th percentile, in all reading subtest areas. Per the results of the KTEA-3, AFK received academic support at the time of intervention. Evaluations indicated no behavior concerns at the time of completion.

In order to support AFK's needs, he received academic reading support from the ASD center program in a resource classroom for 150 minutes weekly by the special education teacher. At the time of research, AFK spent over 80% of his day in the general education classroom setting. AFK's IEP including the following IEP goal for reading comprehension: When presented with an instructional level text, AFK will be able to answer "wh" comprehension questions with 80% accuracy for 4 out of 5 consecutive trials as measured by bi-weekly progress monitoring probes. AFK also had a fluency and accuracy goal due to concerns in that area. His

IEP goal in fluency was: When give a grade level reading text, AFK will correctly be able to read 80 wpm with 85% accuracy for 4 out of 5 consecutive trials as measured by bi-weekly teacher progress monitoring. There were no major behavior concerns other than maintaining focus and on-task behaviors.

Table 1

Participant Information

Participant Name	Age/Grade	Ethnicity	Disability	Assessment/ Other Information	Reading Level
Kevin Jr.	11 years old, 5th Grade	White	Autism Spectrum Disorder	*CARS-2: Severe Symptoms *CELF-5 Composite Language: Low Range *KTEA Reading Comprehension: Grade Equivalency: 2.4	Below Grade Level, Level J (Level R-V is considered on Grade Level)
Cat	11 years old, 5th Grade	White	Autism Spectrum Disorder	*CASD: borderline *CELF-5 Composite Language: Moderate Range	Below Grade Level, Level E (Level R-V is considered on Grade Level)

AFK	11 years old, 5th Grade	White	Autism Spectrum Disorder	*ASRS: multiple symptoms *CELF-5 Composite Language: Moderate Range *KTEA Reading Comprehension: Grade Equivalency: 2.8	Below Grade Level, Level J (Level R-V is considered on Grade Level)

Interventionist

For this study the researcher also served as the interventionist. She was a certified teacher with 4.5 years of formal teaching experience. 3.5 of those years spent teaching students grades K-8 with disabilities in a special education classroom setting. She held licensure in general education, and special education with endorsements in learning disabilities and low-incidence disabilities. She was currently completing a Master's degree in Advanced Studies in Special Education, specifically low incidence disabilities and was trained in reading interventions.

Training

The researcher was trained in special education and reading interventions. The researcher had taught book-based reading lessons to students with disabilities for the past two years prior to this study. All members of the research team, including the interventionist and data collectors for IOA and PF, completed a training module on dialogic reading developed by the Division for Early Childhood Education of the Council for Exceptional Children (https://connectmodules.dec-

sped.org/connect-modules/instructor-community/dashboards/module-6/). The interventionist trained the secondary observer by using the training module on the CROWD and PEER techniques the researcher would be using. The researcher also trained the secondary observer on collecting IOA an PF data using specific data collection sheets.

Setting

All components of this study, including baseline, intervention, generalization, and maintenance phases took place in a special education classroom located in a public Title 1 school in the western United States which served 529 students in grades K-6. The school demographics were as follows: white- 17%, Hispanic- 74%, Asian- 5%, African American- 1%, American Indian- 1%. See Table for school demographics information (Retracted School, 2024). The school included one of 8 elementary level Autism Center Programs specializing in serving students with Autism Spectrum Disorder. The center program included a primary program serving students grades K-2, and an intermediate program serving students grades 3-6. The school also included a Dual Language Program where students received 50% of their daily instruction in English, and 50% of their instruction in Spanish. See Table 2 for school demographic information.

Table 2

School Demographics (website link retracted to preserve confidentiality of participants)

Race	**Percent**
White	17%
Hispanic	74%
Asian	5%
African American	1%

American Indian	1%
Two or More Races	2%
Other Information	
Free and Reduced Lunch	79%
Student Teacher Ratio	14:1
Multilingual Learners	41%
Special Education	22%
Reading Proficiency Average (Grades 3-6)	24%
Math Proficiency Average (Grades 3-6)	16%

Classroom Set-up

The special education classroom contained ten students grades 3-6 who received special education services in the special education and general education classroom setting. Students were served by one classroom teacher. The interventionist was also in her final semester of a Masters' Program in special education, and seven paraeducators with a range of 1-4 years of experience. Students in the classroom all received special education services under the disability category of Autism Spectrum Disorder and receive academic, mental health, and speech language services. All students spent at least 80 percent of their day in the general education classroom setting, while receiving direct support from staff to access the general education curriculum. The classroom consisted of multiple student workspaces, and a sensory room used for students who exhibited escalated behaviors. Student participants' daily reading instruction took place in the special education classroom, the same location as intervention sessions.

Intervention Instructional Area Set-up

Instructional and baseline trials were conducted during participants regularly scheduled special education service times for reading and ELA instruction in the special education classroom. Physical barriers were used to section off portion of the classroom for instructional trials to ensure that participants still in baseline phases could not observe students in intervention phases. Instructional trials with the independent variable were conducted by the classroom teacher, who also serves as the researcher for this study, in a one-on-one setting. During instructional trials, other students were instructed and monitored by classroom paraprofessionals.

Materials

Books were chosen for each instructional probe that were appropriate for each participant's current instructional level and grade level. Books chosen for instructional probes were chosen from the curriculum library set of Rigby leveled texts based on the general education curriculum used by the interventionist and participants. Texts were pre-leveled by the HMH Into Reading curriculum to ensure consistency in texts were present, and to reduce for book complexity becoming a confounding variable. The selection provided by the curriculum consists of randomized nonfiction and fiction texts to promote generalization of skills. The researcher used data from DIBELS 8 assessments, which she had access to as the participants classroom teacher, to determine instructional level of participants. The researcher used guided handouts from experimenter training to guidebook selection, as well as to prepare the books for the dialogic reading intervention. Out of the total number of books selected for this study, the researcher selected five texts from each level at random that were used for baseline probes. The researcher also randomly chose texts for intervention sessions in order to maintain randomization of text selections.

Table 3

Leveled Texts Used: Phase, Participant, Title, Rigby Level

Phase of Intervention	Participant	Title	F/NF	Rigby Level
Baseline	Kevin Jr./ AFK	The Princess and the Pea	F	J
Baseline	Kevin Jr./ AFK	Mystery of the Bay Monster	F	J
Baseline	Kevin Jr./ AFK	The Mystery of the Clever Cat	F	J
Baseline	Kevin Jr./ AFK	BMX Bikes	NF	J
Baseline	Kevin Jr./ AFK	Forest Fire!	NF	J
Baseline	Cat	Baby Animals	NF	E
Baseline	Cat	Small Animals that Hide	NF	E
Baseline	Cat	Joe's Bean Plants	F	E
Baseline	Cat	Barney Owl	F	E
Baseline	Cat	Hermit Crab	F	E
Probe/Intervention	Kevin Jr./ AFK	Gibbons, The Singing Apes	NF	J
Probe/Intervention	Kevin Jr./ AFK	Ice	F	J
Probe/Intervention	Kevin Jr./ AFK	Many Ways to Work	NF	J
Probe/Intervention	Kevin Jr./ AFK	Mr. Higgs Starts School	F	J
Probe/Intervention	Kevin Jr./ AFK	Our Day in the Big City	F	J
Probe/Intervention	Kevin Jr./ AFK	The Bags by the Gate	F	J
Intervention	Kevin Jr./ AFK	The Mystery of the Missing Berries	F	J
Intervention	Kevin Jr./ AFK	Apples for Sale!	F	J
Intervention	Kevin Jr./ AFK	Crabs	NF	J

Intervention	Kevin Jr./ AFK	Dad, the Bird Caller	F	J
Intervention	Kevin Jr./ AFK	Don't Stomp on That Bug	NF	J
Intervention	Kevin Jr./ AFK	Pulleys and Gears	NF	J
Intervention	Kevin Jr./ AFK	Tarantulas	NF	J
Intervention	Kevin Jr./ AFK	The Best Animal in the Forest	F	J
Intervention	Kevin Jr./ AFK	Water Sports	F	J
Intervention	Kevin Jr./AFK	Homes for Everyone	NF	
Intervention	Cat	Cold Day, Hot Chocolate	F	E
Intervention	Cat	Making a Little Raft	F	E
Intervention	Cat	My Caterpillar Report	F	E
Intervention	Cat	Buddy's Bath	F	E
Intervention	Cat	Everyone Says Sh-h-h!	F	E
Intervention	Cat	Fire! Fire!	F	E
Intervention	Cat	Looking at Insects	NF	E
Intervention	Cat	Monarch Mystery	F	E
Intervention	Cat	My Vacation Diary	NF	E
Intervention	Cat	Our Vegetable Garden	NF	E
Intervention	Cat	Planting and Growing	NF	E
Intervention	Cat	Stay Safe!	NF	E
Maintenance	Kevin Jr./ AFK	A Dictionary of Snake Facts	NF	J
Maintenance	Kevin Jr./ AFK	Dessert Life	NF	J
Maintenance	Kevin Jr./AFK	The Scooter Race	F	J
Maintenance	Cat	Josh's Scooter	F	E

Maintenance	Cat	Kitty Cat and the Frog	F	E
Maintenance	Cat	Looking at Snails	NF	E

Experimental Design and Data Analysis

This study used a multiple-probe across participants single-case research design (Ledford & Gast, 2018) to measure the effects of dialogic reading intervention on participant ability to answer "wh" comprehension questions. Single-case research design uses manipulation of at independent variable (IV), systematic comparison of two or more experimental phases, and the participants serve as their own control (Kratochwill et al., 2010; WWC, 2010). Five baseline probes occurred prior to the start of intervention for all participants. Following the demonstration of stable baseline data, the first participant, Kevin Jr. was introduced into intervention. Once the data of the first participant reached 80% correct responses for four out of five consecutive intervention sessions, the interventionist re-probed all other participants still in baseline phases. Once three stable and low baseline probes were reached, the researcher brought another participant into intervention. This continued until all students were brought into intervention.

Following each intervention session, the researcher visually analyzed data collected to determine intervention effects on the DV. The researcher looked for changes in trend, level, and magnitude of effect in which the intervention elicited a change in the DV (Kratchowill et al., 2010). The researcher also conducted visual analysis. This visual analysis identified any overlapping data between phases, evaluated a change in DV across all three study participants, checked for variability, stability, and changes in trend within the data to determine if modifications for the intervention package were needed. Percentage of Nonoverlapping Data were also calculated as a measure of effect size (Tarlow & Penland, 2016a).

Dependent Variable

For this study, the primary dependent variable (DV) was the percent independent correct "wh" comprehension questions answered during a dialogic reading based instructional lesson. Data on the number of independent questions answered were collected during each instructional session. The secondary DV was student active participation during dialogic reading based instructional lessons. Active participation during a session included that participants attempted to answer questions using their preferred communication modes, sat or remained positioned in an appropriate learning position, and attended to the interventionist visually and by listening. Data on the secondary DV were collected every three instructional sessions.

Independent Variable

The independent variable for this study was dialogic reading intervention strategies. Dialogic reading involved prompting and questioning strategies to target comprehension skills. The interventionist asked students a variety of questions during a close reading of a text. Questions asked by the interventionist include the following: simple completion questions, recall questions, "wh" questions, open ended questions, and expansion questions. These questions were derived using the CROWD acronym seen in Figure 1. During intervention, the interventionist buillt upon student responses with verbal prompting using the PEER strategy, which stands for (P) prompt, (E) evaluate, (E) expand, (R) repeat (Morgan & Meier 2008). Dialogic reading strategies also included interventionist use of continued and repeated praise of student responses to promote active participation and student engagement.

Figure 1

CROWD Dialogic Reading Question Guide (CEC Training Module)

Question Type	**What the Interventionist will do**	**What the participant will do**	**Question Example**
C: Completion	The interventionist creates an incomplete sentence to prompt participants to come up with appropriate response.	Participants complete the sentence by filling in the blank	On page 3, the BMX bike had _____ wheels.
R: Recall	The interventionist asks a question to prompt students to recall basic events.	Participants recall basic events and details from the book.	What color shirt is the main character wearing on page 4?
O: Open-Ended	The interventionist asks a question that prompts the student to answer a question beyond yes or no.	Participants will describe part of the story.	Explain to me the event that is happening to the characters on page 5.
W: WH questions	The interventionist asks students to answer a who, what, when, where, and why question.	Participants will answer questions asked by the interventionist	Where are the characters going on page 1?
D: Distancing	The interventionist asks students questions that help them make connections between the story and their personal lives.	Participants will make connections between the story and their own personal life.	In this story, we are learning about BMX bikes. How is a BMX bike and the bike you have at home different?

Data Collection and Analysis

Each intervention session contained five "wh" questions with a total of five possible points for each session. Participants received one point per independent correct response. This point scale was used in baseline and intervention phases. The total number of points the

participant received during an intervention session was divided by the total number of possible points (5) and multiplied by 100 to obtain a percent correct score. Data were also collected on partial or no responses for "wh" questions to assist the interventionist in monitoring overall progress but were not graphed with DV data. To meet pre-determined mastery performance criterion in intervention, participants needed to receive at least four out of the five possible points, or 80% correct per session for four out of five consecutive trials. Repeated trial data sheets were used to collect data and can be shown in Figure 2 and 3Event recording of student active participation was conducted for the secondary DV every three intervention sessions with participants receiving a check for active participation components that was totaled at the end of the session. Participants received a check for participation components described above and a "-" for no participation. The number of checked responses was divided by the total number of components (4) and multiplied by 100 to obtain a percent score for participant active participation. This scoring and data collection method was used in both baseline and intervention phases. The interventionist collected data using a repeated trial data sheet shown in Figure 3. The interventionist then analyzed the data, calculated a percentage score for each DV, and graphed the data following each data collection session.

Figure 2

Data Collection Table for DV

Participant:		**Session Number:**	Date:
	Independent Correct Response	No Response	**Partial Response
Question 1:			
Question 2:			
Question 3:			

Question 4:			
Question 5:			

Figure 3

Data Collection for Secondary DV

Participant:					
	Attempt to answer questions	*Appropriate listening positioning*	*Visual attention*	*Active listening*	**Total score for session:**
Session Number: Date:					

Social Validity

To establish social validity within the study, the researcher met with stakeholders, including participants, throughout the research process to gather social validity data, as well as provide information regarding the study. Parents or guardians of participants were invited to two informational meeting sessions. During meeting one, the researcher discussed the research, including the purpose of the study and how the study was to be conducted. The researcher also answered any parent or guardian questions during the session. The results of the study were discussed in the second meeting. Participant progress updates were given to stakeholders bi-

weekly once intervention began. Following the study, parent or guardian stakeholders completed a four-question survey, indicating their agreement or disagreement using a five-point Likert scale. Stakeholders will rate their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions: (a) After participating in this study, my child has been more interested in reading; (b) after participating in this study, my child actively participates during reading time; (c) I feel this study was beneficial to my child; (d) I would like my child to continue reading with the intervention methods from this study.

In addition to meeting with parent and guardian stakeholders, the researcher met with classroom staff three times throughout the research process. Session one included discussion on the purpose of the study, the intervention to be used, as well as the methods in which the study will be conducted. During this session, the researcher explained the pertinence of paraprofessionals not using any intervention methods similar to dialogic reading outside of intervention sessions with the researcher to prevent confounding variables from occurring. Session two discussed participant progress in the study. Session three occurred after the study was fully conducted and discussed results and effectiveness of the intervention. Following the study, classroom staff completed a four-question survey, indicating their agreement or disagreement using a five-point Likert scale. Paraprofessionals rated their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions: (a) after participating in this study, the student has been more interested in reading and actively participating in reading activities; (b) student active participation increased after the use of this intervention; (c) the outcomes and goals addressed during this intervention

are important for overall student success; (d) I feel that students would benefit from a continued use of this intervention.

The researcher met with the secondary observer after completion of the study to evaluate the social validity, feasibility, and efficiency of dialogic reading for practitioners in the classroom setting. The secondary observer rated their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions: (a) I feel this intervention was successful at improving student reading comprehension skills; (b) I feel that this intervention was successful at maintaining student engagement and active participation; (c) I feel that this intervention can be easily implemented into a variety of classrooms with various student needs.

The researcher also collected data from participants after each intervention session. Students marked their response with a yes or no answer, or thumb up/thumb down icon, to the following questions: (a) did you like the book we read today; (b) would you want to read this book again; (c) did you like the process we used to learn about and read the book; (d) would you want to read and talk about another book tomorrow? (see Figure 4).

Figure 4

Participant Social Validity Survey

Did you like the book we read today?	Yes No	
Would you want to read this book again?	Yes No	

Did you like the process we used to learn about and read the book?	Yes No	
Would you want to read and talk about another book tomorrow?	Yes No	

Interobserver Agreement

To obtain Interobserver Agreement (IOA) data, a trained secondary observer randomly observed at least 25% of sessions across all phases. IOA data can be found in Table 4. IOA was calculated by taking the number of agreements and dividing it by the number of agreements + disagreements and dividing it by 100. The second observer had a total agreement of 97% (range of 94-100) across all phases, 98% (range of 97-100) agreement in baseline across all participants, 96% agreement in intervention across all participants (range 94-100), and 97% agreement in maintenance and generalization phases across all participants. The secondary observer obtained a total IOA of 97% was obtained from a total of 27% of trials (see Table 4).

Procedural Fidelity

A trained secondary observer collected data on the fidelity of the implementation of the procedures for at least 25% of all sessions across phases. PF was set at 90% or higher. Observers used a point system to determine agreement, providing a check or blank for each step of the intervention to be implemented. The number of correctly implemented steps will be divided by the total number of steps to be implemented, then multiplied by 100 to calculate the percentage of procedural fidelity. An overall PF of 99% was obtained from a total of 26% of trials.

Procedures

Baseline

Prior to the start of the study, the researcher determined that the participant who showed the lowest and most stable baseline data was brought into intervention sessions first. This criterion was used for all intervention assignments throughout the study.

During the baseline phase, the participant read from a pre-selected book. They read the whole book with no stopping and or discussion. After reading, the interventionist asked participants 5 pre-determined "wh" questions. The interventionist did not use any prompting or reinforcers for correct answers, or any error correction strategies. Participants were be reinforced for attentive behaviors such as sitting quietly or attentive listening. Following the probe, participants were given a preferred reinforcer. Preferred reinforcers included the following: free time in the special education classroom, a snack, time on the playground, or time spent using sensory items of their choice.

Intervention

During the intervention phase, the participants read a predetermined and randomly selected book using dialogic reading interventions. The interventionist stopped at predetermined points during the reading of the story, directed participant attention to a specific portion of the story and asked predetermined questions. Stopping points were guided by the story content and related questions. The predetermined questions were created using the CROWD strategy, further explained in Figure 1 above. The interventionist verbally presented the question to participants with a 5 second time delay before providing additional prompting. Additional prompted strategies included verbal prompts (e.g. repeating the question, giving indirect prompts toward the answer) or physical prompts (e.g. pointing at specific portions of the page regarding the

question asked). During intervention sessions when secondary DV data was collected, participants received a check or "-" for each question asked based on active participation, and data was analyzed and graphed. Student participation and student correct responses were verbally reinforced by the interventionist, other predetermined student-specific reinforcers were used as needed. At the conclusion of the dialogic reading intervention lesson, students were asked five pre-determined "wh" comprehension questions. Student answers were scored on a three-point scale discussed previously. After completing the "wh" questions, a social validity survey was answered by participants. Due to time constraints and unstable baseline data, AFK did not reach intervention trials during this study.

Generalization

Generalization of participant ability to independently answer "wh" questions was evaluated during intervention sessions. Each intervention session contained a new leveled text. In this phase, dialogic reading interventions were used with various types of texts to evaluate the effect on the IV across different text types. Intervention sessions included fiction texts and non-fiction texts.

Maintenance

In order to demonstrate maintenance of participant skills obtained during intervention, participants completed three instructional probes with new book selections to assess if participants were still able to answer "wh" comprehension questions. In the maintenance phase, data was collected at three points post intervention: 1 week, 2 weeks, and one month. One probe at one-week post-intervention was taken for Kevin Jr. using a new leveled text. Procedures for the instructional probes matched those in the baseline phase of this study. Due to time constraints and non-stable or low baseline data, maintenance data were not completed AFK.

Chapter 4. Results

Participant One: Kevin Jr.

Acquisition

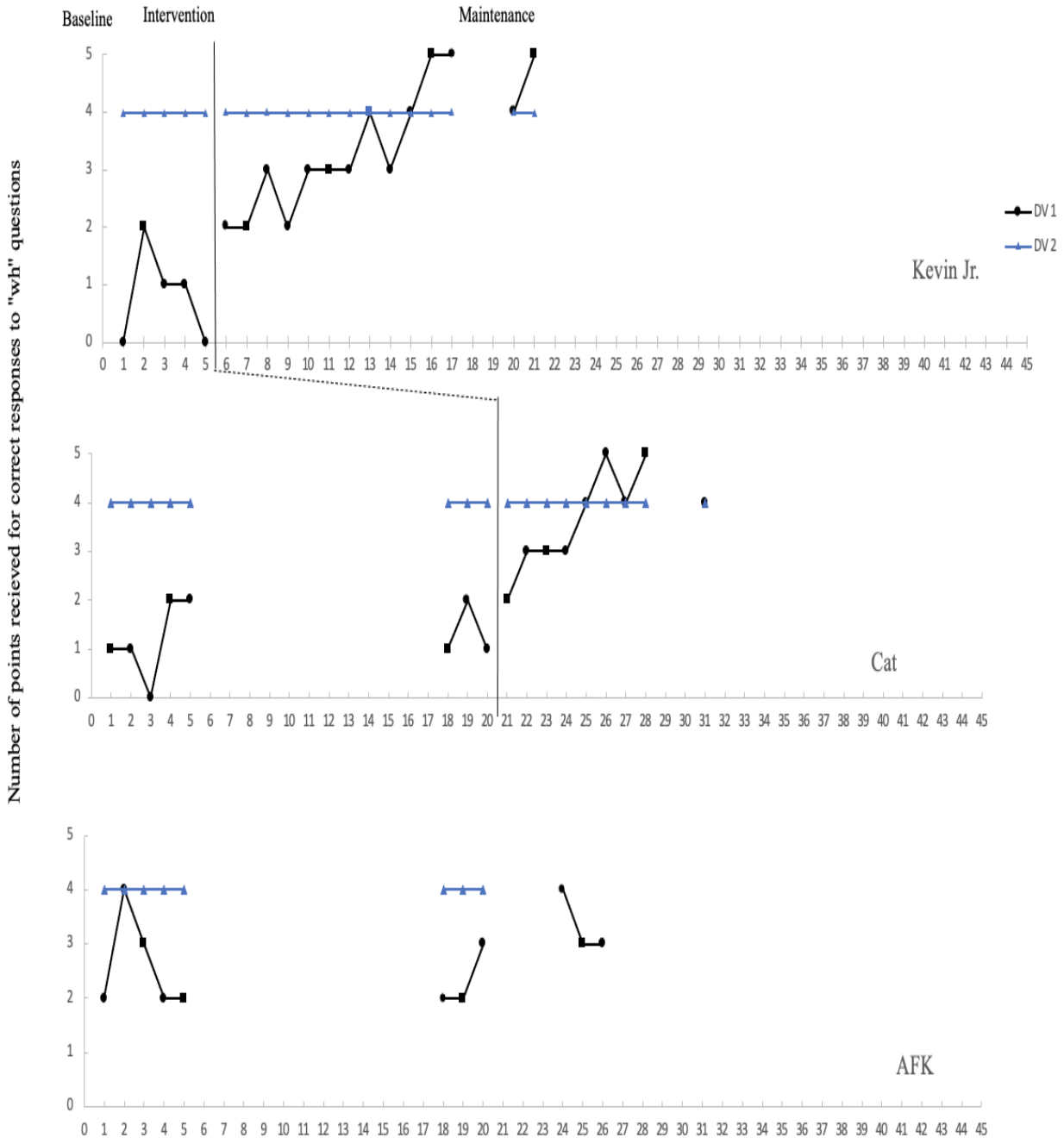
Five baseline probes were conducted with Kevin Jr.. Kevin Jr. had a mean baseline score of 16% with a range of 0% to 40%. (See Figure 5). Once Kevin Jr. was brought into the intervention phase, there was a steady increase in level. Analysis of intervention data suggest a therapeutic trend for Kevin Jr.. Kevin Jr. achieved criterion during session 17 by consistently scoring at least 80% for four out of five consecutive sessions. Kevin had a mean intervention score of 65% with a range of 40% to 100%, which was an increase of 49% from baseline. Kevin demonstrated regressions in scores during session 9 (40%) and session 14 (60%). Kevin Jr. had a PND score of 75% across baseline and intervention phases (Tarlow & Penland, 2016b). Active participation of Kevin Jr. was also conducted during baseline and intervention phases. These data remained constant at 100% throughout baseline, intervention, and maintenance phases. Baseline data for Kevin Jr. were consistently low and stable, during intervention, data for Kevin Jr. suggest an immediate increase in trend and level. This change in trend and level across phases indicated mastery of the research question in Kevin Jr.'s ability to answer "wh" questions using the IV (see Figure 5).

Maintenance

One maintenance probe was conducted with Kevin Jr. one week after intervention. On his first probe, he received a score of 80%. Due to time constraints, another data point was collected early, two weeks after intervention. Kevin Jr. scored 100% on this second probe indicating effectiveness over a two-week period post intervention. Using this maintenance probe, data indicated growth of 74% over baseline (See Figure 5).

Figure 5

Graphed Results



Interobserver Agreement

IOA data was collected for all participants across all phases of the study and can be seen below in Table 4. IOA data were collected for 25% of Kevin Jr.'s total sessions across phases. The secondary observer scored an agreement of 97% across all phases (range 94-100), with 100% agreement in baseline, 96% agreement in intervention, and 97% agreement in maintenance.

Kevin showed interest in every intervention session and was an active participant across all probes. His interest could be related to receiving one on one intervention time with the interventionist, who also served as his teacher. Kevin Jr. displayed active participation throughout baseline, intervention, and maintenance probes. Error analysis indicated that Kevin Jr.'s most common error could be found when asked open ended questions. For example, "Where would you go if you could go on vacation?"

Table 4

Interobserver Agreement

Participant	Time Collected	Minimum	Maximum	Mean
Kevin Jr.	25%	94%	100%	97%
Cat	25%	95%	100%	98%
AFK	33%	97%	99%	98%
All	27%	96%	100%	97%

Participant Two: Cat

Acquisition

Cat's data remained low and stable during baseline conditions. Cat had a mean baseline score of 24% for all baseline probes with a range of 0% to 40%. During continued baseline probing, Cat continued to show low and stable data with slight variability. Cat was brought into intervention during session 21. Cat achieved criterion during session 29 by consistently scoring at least 80% for four out of five consecutive sessions. Cat had a mean intervention score of 72% with a range of 40% to 100%, which is an increase of 60% from baseline. Cat had a PND score of 11% across baseline and intervention phases (Tarlow & Penland, 2016b). Secondary DV data remained constant at 100% throughout baseline, intervention, and maintenance phases. Baseline data for Cat were low and stable, during intervention, data for Cat increased and suggest an immediate increase in trend and level. This change in trend and level across phases indicated mastery of the research question in Cat's ability to answer "wh" questions using the IV (see Figure 5).

Maintenance

Due to time constraints Cat only received one maintenance probe two days after intervention completion. Cat received a score of 100% on this maintenance probe, indicating short term effectiveness of this intervention.

Interobserver Agreement

IOA data was collected for all participants across all phases of the study and can be seen below in Table 4. IOA data were collected for 25% of Cat's total sessions across phases. The secondary observer scored an agreement of 98% across all phases (range 95-100), 99% agreement in baseline and 95% agreement in intervention.

Cat often shows behaviors consistent with dysregulation seen by those with ASD, especially when asked to complete tasks independently. When Cat was engaging in intervention sessions, the interventionist observed a decrease in these undesired behaviors. Error analysis of responses indicated that cat's most common error across baseline and intervention phases was seen in response to open ended questions.

Participant Three: AFK

Acquisition

AFK's initial baseline data demonstrated variability across probes with a mean baseline score of 52% with a range of 40% to 80%. After continued baseline probes, data for AFK was still variable and high with data point 24 meeting mastery standards. AFK had a mean baseline score of 54% for all baseline probes with a range of 40% to 80%. AFK did not demonstrate low and stable baseline data during each of the baseline probes, and therefore was not brought into intervention before the completion of this study.

Maintenance

Due to time constraints and AFK not entering the intervention phase at the time of conclusion of this study, no maintenance data was collected.

Interobserver Agreement

IOA data was collected for all participants across all phases of the study and can be seen below in Table 4. IOA data were collected for 33% of AFK's total sessions across phases. The interventionist scored an agreement of 98% across baseline phases (range 97-100).

Interobserver Agreement

IOA data were collected for 26% of all instructional trials. There was 99% (range of 99-100) agreement in baseline across all participants, 96% agreement in intervention across all participants (range 94-100), and 97% agreement in maintenance and generalization phases across all participants. An overall IOA of 97% was scored from a total of 26% of trials (see Table 4).

Procedural Fidelity

Measures of PF were taken for all participants across 25% of the total study sessions with a mean of 99% reported by the second observer.

Social Validity

Social validity data were collected from parent/guardian stakeholders, classroom staff (paraprofessionals), and participants. Results are as follows:

Parent/Guardian Results

Following completion of the study, parent and guardian stakeholders answered four questions using a five-point Likert scale rating their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions: (a) After participating in this study, my child has been more interested in reading; (b) after participating in this study, my child actively participates during reading time; (c) I feel this study was beneficial to my child; (d) I would like my child to continue reading with the intervention methods from this study. Parents indicated 100% agreement that they would like their child to continue receiving dialogic reading interventions upon completion of the study. Data were only collected from two stakeholders as one participant had not yet entered intervention. It should be noted that at the time of data collection, one participant was still in intervention phases. See Table 5 for specific data means and ranges.

Table 5

Social Validity Results: Parents/Guardians

	Mean	Range
Question 1	1	0-2
Question 2	2	1-3
Question 3	3.5	3-5
Question 4	5	5

Paraprofessional Results

Paraprofessionals in the classroom answered four questions after the completion of the study using a five-point Likert scale rating their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions rating on a Likert scale: (a) after participating in this study, the student has been more interested in reading and actively participating in reading activities; (b) student active participation increased after the use of this intervention; (c) the outcomes and goals addressed during this intervention are important for overall student success; (d) I feel that students would benefit from a continued use of this intervention. It should be noted that this data only reflects participant one and two as participant three was not in intervention at this time. All paraprofessionals, 100%, marked that they strongly agree with questions 3 and 4 regarding goals and outcomes, student success, and student benefit from continued use of the intervention. Overall results can be seen below in Table 6.

Table 6.

Social Validity Results: Paraprofessionals

	Mean	Range
Question 1	3	2-4
Question 2	3	3
Question 3	5	5
Question 4	5	5

Secondary Observer Results

The secondary observer rated their agreement on a scale of 0-5 with zero being strongly disagree and 5 being strongly agree. The survey included the following questions: (a) I feel this intervention was successful at improving student reading comprehension skills; (b) I feel that this intervention was successful at maintaining student engagement and active participation; (c) I feel that this intervention can be easily implemented into a variety of classrooms with various student needs. See table 7 for results. The secondary observer indicated that the intervention could be difficult to use in a variety of classrooms as many classroom teachers do not have time to work one on one with students throughout the day.

Table 7

Social Validity Results: Secondary Observer

	Score
Question 1	4
Question 2	3
Question 3	2

Participant Results

Participants were asked three questions after each intervention session (Figure 6). It should be noted, social validity data were only collected from two participants as the third participant had not yet been brought into intervention at the end of this study. Kevin Jr. selected yes for every intervention session on all three questions. Cat selected yes for question 1 for 75% of sessions. Student B also selected yes for 50% of sessions when asked question 2. Student B selected yes for 100% of sessions for question 3. Participants selected yes for question 1 on average of 87.5% of the time. Participants selected yes for question 2 on average of 75% of the time, and yes for question 3 100% of the time.

Chapter 5. Discussion

The current study had three purposes: (1) to determine the effect of Dialogic Reading on upper elementary-age transitional readers with moderate ID's ability to correctly answer "wh" comprehension questions, (2) to determine the difference in active participation prior to dialogic reading interventions versus after exposure to dialogic reading interventions, (3) to determine difference in participants' interest in reading prior to dialogic reading interventions versus after exposure to dialogic reading interventions. Upon analyzation of the intervention's effects when implemented with three fifth grade students with ASD's using a multiple probe across participants single-case research design, results indicate positive increases in trend and level between dialogic reading (IV) on participant ability to answer "wh" comprehension questions (DV) for two out of three participants. Visual analysis of the data indicated that there was slight consistency of level, trend, immediacy of effect, and variability for participants one and two, indicating positive correlation. Visual analysis also established a causal relation for Kevin Jr. and Cat between the intervention (IV), dialogic reading interventions, and the DV, or participant ability to answer "wh" comprehension questions. This is demonstrated in the results graph found in Figure 5 where data shows an increase in trend and level. Kevin Jr. demonstrated slight variability throughout intervention and baseline phases, with regression during data points 9 and 14, each regression was after the student had multiple absences. Cat demonstrated a consistent and immediate change in trend and level while reaching mastery in session 28 with no regressions and a small amount of PND. AFK demonstrated a high level of variability in data, including two data points on session 2 and 24 meeting criterion for mastery. Ledford and Gast (2018) define the Hawthorne effect as the idea that participants in an experimental study can demonstrate a change or improvement in behavior because they know they are being observed by

the researcher. The variability and high baseline data could be a possible demonstration of the Hawthorne effect. Horner et al. (2015) require three replications at different points throughout the course of the study to demonstrate a therapeutic effect and a functional relation. At the time of completion of this study, only two participants were brought into intervention, therefore, three replications were not seen and a functional relation between the IV and DV could not be determined. For the secondary dependent variable, active participation in dialogic reading-based lessons there was no increase in trend or level with all students meeting criterion in baseline, intervention, and maintenance phases, indicating no correlation between the IV and the secondary DV.

Social validity results indicated that classroom staff and parents/guardians indicated that the intervention was beneficial and agree that they would like to see continued use of this intervention. Social validity data were collected on two out of the three participants, with only three data points collected for participant 2. Participants indicated that they wanted to continue engaging in dialogic reading lessons 100% of the time. Throughout the course of the study, Kevin Jr. gave 100% positive responses to all questions and was eager to participate in lessons and this can be interpreted as a desire to engage in sessions. Participants indicated excitement with success in answering questions correctly across sessions based on interventionist observations. Cat, who often demonstrated dysregulated behavior with unpreferred tasks throughout the school day, did not demonstrate dysregulated behavior while engaging in dialogic reading, an informal observation of social validity throughout the study. AFK was willing to engage in baseline probes, however, no formal social validity data wa taken from him or his parent/guardian as he had not been brought into intervention stages at the conclusion of this study. At the time of conclusion, this study was lacking in social validity data and no formal

conclusions can be made at this time. However, based on data collected and participant informal behaviors and responses, dialogic reading can be determined as socially valid.

Current literature exists on the use of dialogic reading interventions to support students with complex support needs (Coogle et al., 2020; Fluery & Schwartz, 2017; Rahn et al. 2016). These studies specifically evaluate the effectiveness of dialogic reading with pre-school age students, but there is a lack of research on the effectiveness of dialogic reading with upper-elementary age participants. The current study added to the literature by extended research into a upper-age elementary age students with ASD.

Limitations

There were several limitations throughout the course of this study. First, due to school scheduling and outside teaching responsibilities of the interventionist, spring break did occur during the study, causing a large gap in intervention. Throughout the course of the study, the school system also had a total of three snow days, causing pauses through the course of this study. Intervention sessions were completed with Kevin Jr. and two maintenance probes were collected at the time of completion, with the second probe being taken two weeks after completion of intervention instead of one month after intervention. Cat was quickly brought into intervention and no maintenance data were collected for Cat at the completion of the study.

A second limitation noted during the study was that the interventionist also served as the participants classroom teacher. The participants were not often able to engage in one-on-one learning with the teacher during their typical classroom settings due to large caseloads and service requirements. This opportunity could have increased students' active participation, as well as impacted participants desire to participate in continued intervention sessions. This could

have resulted in confounding social validity results from participants and should be taken into consideration when interpreting results.

The classroom environment during the course of the study was also another limitation in this study. Intervention sessions took place during participants literacy intervention time according to their IEP and other students were present during sessions. Typical classroom interruptions, such as other students asking questions, students coming into the classroom to retrieve items, students exhibiting dysregulated behaviors, and other adults needing to address pertinent situations, did occur across multiple sessions. This did cause pauses in delivery of instructional sessions and cause for repeated reading of pages and repeated asking of questions. Study results were not compromised due to these interruptions.

Another limitation of this student that could have had an outside effect on the results from Cat, was the time of year the study was completed. This study was completed in the later part of the spring semester, which coincides with state testing. Many general education classrooms at this time of the year are reviewing multiple instructional strategies in order to refresh and prepare students for testing, which could have impacted Cat's ability to answer "wh" questions throughout intervention and maintenance sessions.

While two of the above limitations did not have a direct impact on the results of the study, the first limitation of incomplete data collections prohibits the ability to determine overall effectiveness across multiple participants and a functional relation between the IV and the DV.

Recommendations for Future Research

The results from two participants demonstrate that students with ASD are able to improve upon reading comprehension skills using dialogic reading interventions. Data collected also demonstrated efficacy of the implementation dialogic reading interventions with upper-

elementary age students and improve student outcomes. While this research attempts to extend literature by addressing limitations of the previously aforementioned research conducted by others, specifically the age of participants, this study comes with limitations. Initial suggestions for future researchers include addressing the limitations of this study. Future research should continue to evaluate modifications of dialogic reading to determine if dialogic reading is successful across a variety of participants. This study was conducted in a separate special education classroom setting, in order to evaluate generalization across environments for the interventions, future research should also investigate the effects of the intervention in inclusive settings.

In order to increase feasibility of implementation in a classroom setting, a second recommendation for future research includes evaluating the intervention given to multiple participants in small groups. Most students with ASD receive special education services in the public-school setting receive educational services, which are often delivered in small groups of students with similar age and skill level. Future researchers should evaluate the effects of dialogic reading with upper age elementary school students in small groups rather than one-on-one.

Moreover, future research should address long term maintenance and generalization of skills across various text types. Future researchers should also continue to alter selection criteria to promote overall generalization of dialogic reading as an effective intervention strategy. Error analyses revealed that all participants across all phases demonstrated errors on open-ended questions during intervention sessions. It should be noted that all participants in this study were also diagnosed with ASD and this error is consistent with difficulty with abstract concepts and questions.

In additions to the previous recommendations for future research, this study only addresses one level of dialogic reading, "wh" questions; researchers should continue to evaluate the different levels of dialogic reading with various participant groups. Future research should continue to evaluate throughout the CROWD questions, as well as higher levels of Bloom's Taxonomy as students enter into upper elementary grade levels.

Implications for Practice

The current study, as well as national legislation (IDEA, 2004; NCLB, 2002), support the inclusion, access to the general education curriculum, and school accountability for students with ID in all areas of reading. Current research provide evidence to support the use of systematic and explicit instruction, along with evidence-based practices, can improve student reading comprehension skills. This also indicates that reading comprehension instruction should be a part of daily instruction for all students.

In contrast to this study, which was conducted with one participant at a time, teachers should consider using dialogic reading interventions across a small group or in an inclusive setting. By doing so, the needs of multiple students would be met by the teacher, with or without disabilities within one lesson, and provide more response opportunities for students across environments.

Given the variety of student abilities and needs, practitioners should consider alternative ways to answer questions and interact with texts including the use of AAC devices, adapting the physical attributes of texts, as well as the setting where instructional sessions are delivered. Teachers of students with extensive support needs are encouraged to consider appropriate response methods to meet students' individual needs at the time of intervention. Because each student has specific needs that go outside the realm of just academics, it is important that

practitioner's partner with related service providers when determining if dialogic reading is an appropriate intervention for students. This includes the ability for classroom teachers to alter the time delay procedures used to allow for student self-error correction throughout instructional trials. In this study, there was possibility that participants would have self-corrected their answers and scores could have been improved.

Finally, educators should explore how this intervention can be embedded across multiple content areas and settings. For example, they might choose to use dialogic reading strategies when reading texts in science and social studies lessons.

Conclusion

There is a wealth of information surrounding evidence-based practices for teaching reading comprehension to students with ASD. Moving forward, researchers are looking for strategies that are socially valid, easy to implement, efficient and effective for students with varying and extensive support needs across a variety of texts. The current study demonstrates how dialogic reading can be an effective intervention for students with complex support needs if implemented with fidelity for improving participant ability to answer "wh" comprehension questions. Suggestions for future research, as well as implications for practice, were discussed. The classroom setting comes with a variety of skills and support needs of students; the researcher also offered suggestions for implementation in order to better help educators meet the needs of the diverse students. Finally, recognizing the key role that reading and reading comprehension play in daily life, social communication, and inclusion across all environments, the researcher demonstrated the importance of high-quality evidence-based instruction for all students, including those with extensive support needs.

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