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The effects of book club participation on reading comprehension in children with disabilities

Elizabeth Ann Kosmicki
University of Northern Iowa

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THE EFFECTS OF BOOK CLUB PARTICIPATION ON READING COMPREHENSION IN
CHILDREN WITH DISABILITIES

An Abstract of a Thesis
Submitted
in Partial Fulfillment
of the Requirement for the Degree
Master of Arts

Elizabeth Ann Kosmicki
University of Northern Iowa

May, 2018

ABSTRACT

Reading comprehension is a skill that effects future employment and income. However it is an ability that children with various disabilities struggle with. Researchers suggest that instruction in the use of reading comprehension strategies may improve understanding of texts. Furthermore, book clubs might serve as a vehicle to deliver this instruction in a natural setting. The purpose of this study was to examine the effects of book clubs on the reading comprehension strategy use of children with disabilities. Two third grade children, one male with ADHD and one female with Down syndrome, participated in a book club. As part of the club, participants received instruction on the use of seven reading comprehension strategies: connecting the story with prior knowledge, identifying the main idea, asking questions, creating mental images, making inferences, retelling, and using repair strategies. Although small growths in reading comprehension strategy use were observed, the instruction format used in the study cannot serve as a replacement for intensive intervention at this time.

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Entitled: The effects of book club participation on reading comprehension in children with disabilities

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Date

Dr. Jennifer Garrett, Chair, Thesis Committee

Date

Dr. Evette Edmister, Thesis Committee Member

Date

Dr. Amy Petersen, Thesis Committee Member

Date

Dr. Patrick Pease, Interim Dean, Graduate College

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CHAPTER I

INTRODUCTION

Reading comprehension, as a component of literacy, directly affects employment and earnings (Barton, 2000). From 1996-2006, the fastest growing jobs required the highest level of literacy, while the fastest declining jobs required below-average levels. Literacy proficiency is also correlated with income level (Barton, 2000). Children with various disabilities, including individuals with attention deficit/hyperactivity disorder (ADHD), Down syndrome, and autism spectrum disorder (ASD), often struggle with reading comprehension (H.M. Brown, Oram-Cardy, & Johnson, 2013; Cain & Bignell, 2014; Laws, Brown, & Main, 2016; Miller et al., 2013; Nash & Heath, 2011; Lombardino, Riccio, Hynd, & Pinheiro, 1997).¹ Book clubs, where books are read and discussed, may be one way to deliver intervention in a natural setting (Goatley, 1997; John, 2006; Kaufman, 2005; Littlejohn, 2011; McLellan, 2012; O'Donnell-Allen, 2006; Raphael & McMahon, 1994).

¹ The author wishes to acknowledge some prefer the term autistic people instead of individuals with ASD (L. Brown, 2011).

CHAPTER II

LITERATURE REVIEW

Reading

According to the National Literacy Act of 1991, literacy is defined as the, “ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one’s goals, and develop one’s knowledge and potential” (p. 333). The American Speech-Language Hearing Association describes reading, a component of literacy, as “the processes by which one constructs meaning from printed symbols” (2001). The National Reading Panel has identified five such processes: phonemic awareness, phonics, fluency, vocabulary knowledge, and reading comprehension. Phonemic awareness is the ability to recognize and manipulate sounds, whereas phonics is learning that letters represent sounds (T.L. Harris & Hodges, 1995; National Reading Panel, 2000). Reading fluency is the ability to read quickly, accurately, and with feeling, while vocabulary knowledge is understanding the meaning of words (Caldwell, 2010; National Reading Panel, 2000). Finally, reading comprehension is an intentional interaction between the reader and the text through which meaning is gained (Durkin, 1993). This final process is the ultimate goal of reading, because once reading comprehension takes place, the meaning gained can be put into memory and drawn upon later to help the reader in various situations (Kintsch, 1998; National Reading Panel, 2000).

Because reading comprehension is intentional and not automatic, it can be taught (National Reading Panel, 2000). In the book, *Mosaic of Thought*, authors Keene and Zimmermann (1997) suggest seven metacognitive strategies to aid typically developing children in acquiring reading comprehension: connecting the story with prior knowledge, identifying the main idea, asking questions, creating mental images, making inferences, retelling, and using repair strategies. These strategies often overlap, and improvement of one strategy sometimes results in improvement of another (Keene & Zimmermann, 1997; National Reading Panel, 2000).

Making connections using prior knowledge includes forming text-to-text (comparing to previously read material), text-to-self (comparing to personal experiences), and text-to-world connections (comparing to world events). It also involves drawing upon knowledge related to the author (comparing to other books written by the author and that author's own life) and text structure (comparing to general trends among expository texts, etc.; Keene & Zimmerman, 1997). Studied in grades first through ninth, researchers found accessing prior memory helps improve memory of the text. When examining instruction on story structure in particular for grades three through six, improvements in the ability to answer questions and remember were noted (National Reading Panel, 2000). Identifying the main idea means knowing where key ideas are found at the word, sentence, and text level. For example, the first and last sentences in a paragraph, as well as the last paragraph in a passage, typically contain important ideas.

Identifying the main idea also requires understanding the purpose for reading the particular text and recognizing that points repeated several times within the text, as well as those pointed out by other readers, may be important (Keene & Zimmerman, 1997). In one study, researchers compared eighth grade students who scored below the 50th percentile on a standardized reading comprehension test to students who scored above the 59th percentile. The researchers found that the students who scored higher identified main ideas in an article similar to those identified by adults attending college (Winograd, 1984). In another study, researchers described how to effectively teach main idea identification. Sixth grade students who received direct instruction on identifying main ideas were better at finding main ideas and supporting ideas in passages and paragraphs compared to a control group who only received vocabulary instruction (Baumann, 1984).

Asking questions occurs before, during, and after reading; questions are asked to predict; find an answer in the text; ponder ideas inspired while reading; and determine meaning and the author's intentions. This strategy also entails realizing the text will not answer all questions directly (Keene & Zimmerman, 1997). When students grades three through nine receive instruction in asking questions, results in improved memory, identification of main ideas, and ability to answer questions using the text. Improved reading comprehension scores on standardized tests might also occur. Learning to specifically answer questions once asked has been examined in grades three through eight. Benefits include improved

question answering and knowledge of how to find answers (National Reading Panel, 2000).

Creating mental images means using the five senses and emotions to create a detailed picture while reading in order to become more invested in the text. These images are adapted as the reader comes across new details. Mental images serve the purpose of helping readers make conclusions, make personal interpretations, and remember the text after reading (Keene & Zimmerman, 1997). In grades two through eight, instruction on creating mental images resulted in improved recall and attention to inconsistencies in the text (National Reading Panel, 2000).

Making inferences requires combining the text with prior knowledge to draw conclusions or to make predictions (Keene & Zimmerman, 1997). In one study, second graders with instruction in making predictions and answering inferential questions using prior knowledge outperformed the control group on standardized reading comprehension tests (Hansen, 1981). Retelling is often a culmination of all the strategies mentioned prior, in which the reader is able to identify and express the main ideas presented by the text (Keene & Zimmerman, 1997). Researchers examining retelling in grades three through six found retelling improved memory, answering questions, and identifying the main and supporting ideas (National Reading Panel, 2000).

Finally, repair strategies are used when the reader has difficulty pronouncing a word, recognizing a word previously learned in a different form (e.g., the child knows the word 'understand' but not 'misunderstood'), or misreads a sentence.

They are also used when the reader does not understand what is happening in the text, cannot draw connections, or is reading without purpose. Examples of repair strategies include re-reading a sentence, reading ahead, and recalling the previous passage in order to understand what is happening (Keene & Zimmerman, 1997).

The National Reading Panel found instruction in this area can be taught to children in second through sixth grade and results in being able to better detect inconsistencies, remember, and perform on standardized reading comprehension tests (2000).

When readers improve their use of these seven strategies, they improve on measures of reading comprehension (Keene & Zimmerman, 1997). Students who scored well on *the Major Point Interview for Readers*, an assessment created by Keene to measure use of the above strategies, also demonstrated improvement on the *Flynt/Cooter Informal Reading Inventory*. Therefore, instruction of Keene and Zimmerman's seven proposed reading comprehension strategies seems an efficacious way to improve reading comprehension (Keene & Zimmerman, 1997).

These seven strategies can be taught through cooperative learning and by using multiple strategy instruction, further boosting reading comprehension (National Reading Panel, 2000). Cooperative learning consists of students discussing what they have read and teaching each other one or more reading comprehension strategies. Focusing on more than one strategy and how to use them in combination is known as multiple strategy instruction. Results from studies on cooperative learning in children from third to sixth grade include greater learning of strategies,

in-depth discussion, and scores on standardized reading comprehension tests (National Reading Panel, 2000).

Multiple strategy instruction can also be carried out through reciprocal teaching (National Reading Panel, 2000). In reciprocal teaching, the teacher first models the use of strategies (Palincsar & Brown, 1984). Gradually, students then begin sharing how they are using the strategies with their teacher, generating a back-and-forth discussion (Palincsar & Brown, 1984). The National Reading Panel found multiple strategy instruction through reciprocal teaching in grades first through sixth resulted in improved scores on standardized reading comprehension tests as well as on tests designed by experimenters (2000). In another study of reciprocal teaching by Rosenshine and Meister, students who learned through this method generally outperformed students who did not on standardized tests, but no difference in scores were noted for third graders (1994). Multiple strategy instruction carried out in other manners largely resulted in the strategies targeted being gained, but no standardized tests were used in these assessments (National Reading Panel, 2000). In conclusion, cooperative learning and multiple strategy instruction, or a combination of the two, can be used to teach the seven reading strategies presented by Keene and Zimmerman (1997).

In addition to the strategies named above, the National Reading Panel named one other efficacious area of instruction for improving reading comprehension in typically developing children: graphic organizers (2000). Graphic organizers, studied in grades four through eight, require students to visually organize ideas.

Evidence collected by researchers best supports improved memory as a result of instruction involving graphic organizers, but improved overall reading comprehension may also result from use of this strategy (National Reading Panel, 2000).

Disabilities and Reading

As stated earlier, the use of reading comprehension strategies has been shown to be beneficial for typically developing children in a variety of grades (Baumann, 1984; Hansen, 1981, Keene & Zimmerman, 1997; National Reading Panel, 2000; Winograd, 1984). A group of instruction methods also has evidence to support facilitating the learning of these strategies comprehension (National Reading Panel, 2000; Rosenshine & Meister, 1994). However, typical developing children are not the only population receiving instruction targeting literacy. Children with disabilities – such as ADHD, Down syndrome, and ASD – are known to have difficulty in the area of reading comprehension (H.M. Brown et al., 2013; Cain & Bignell, 2014; Laws et al., 2016; Lombardino et al., 1997; Miller et al., 2013; Nash & Heath, 2011). They too, must receive instruction.

Attention Deficit/Hyperactivity Disorder and Reading

According to the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V; American Psychiatric Association [APA], 2013), ADHD is a neurodevelopmental disorder characterized by inattention and/or hyperactivity and impulsivity. Examples of inattention symptoms include difficulty maintaining attention and concentrating, resulting in appearing not to listen or follow directions.

The individual might also have trouble with organization. An example of a symptom associated with hyperactivity would be difficulty sitting still, while a symptom associated with impulsivity would be frequently interrupting others. At least five symptoms of inattention and/or six symptoms of hyperactivity and impulsivity must be present for no less than six months. As a developmental disorder, the symptoms must also be present before the age of twelve. Furthermore, they must be noticed in two or more areas of life and interfere with one's quality of life. ADHD can be mild to severe, and symptoms may vary depending on the environment – for instance, receiving positive reinforcement of expected behavior, engaging in desired activities, or engaging with others one-on-one may result in fewer symptoms. Symptoms may also vary depending on a person's age, with hyperactivity most prominent in preschool and decreasing in adolescence (APA, 2013).

It is estimated that 5% of children and 2.5% of adults have ADHD, and males are more likely to have the disorder (APA, 2013). However, prevalence varies by area, as opinions on behavior vary by culture. Predisposing factors include temperament, environment (i.e. alcohol exposure in utero, exposure to lead, encephalitis), and genetics. A variety of disorders can co-occur with ADHD, with oppositional defiant disorder, or difficulty obeying authority, present in half of children with both inattention and hyperactivity/impulsivity symptoms and in a fourth with mainly inattentive symptoms. Conduct disorder, or repeatedly violating the rights of others or social norms, is present in a quarter of children with both

types of symptoms. Other co-occurring disorders include autism spectrum disorder, obsessive-compulsive disorder, and tic disorders (APA, 2013).

In a 1991 study by Dykman and Ackerman, 45% of children with ADHD also had a reading disability, as defined by receiving combined reading and spelling standard scores in the lowest quartile, which were no less than ten points below their IQ. Boys with ADHD were more likely to have a reading disability compared to girls, with a ratio of 9.2 to 1. This could not be explained by an imbalance in participants, with participants in the study 5.1 boys to 1.0 girls (Dykman & Ackerman, 1991). Even in children who only have ADHD however, deficits in reading comprehension exist in comparison to typically developing peers (Lombardino et al., 1997; Miller et al., 2013). In a study of children at-risk for ADHD as indicated by teacher ratings, children with higher ratings of inattention performed poorly in the area of reading comprehension, whereas children with only high ratings for hyperactivity did not (Cain & Bignell, 2014). All children at risk for ADHD scored higher on reading comprehension compared to listening comprehension, where they had a text that they could look over and re-read when experiencing difficulty. These two findings suggest executive function deficits may be to blame (Cain & Bignell, 2014). Executive functions (EF) are effortful processes used by the brain to control ones' own behavior (Diamond, 2013; Miyake et al., 2000). In another study, researchers found children with ADHD also had trouble identifying main ideas, and that this was largely tied to difficulty in working

memory, or the ability to manipulate multiple thoughts at the same time (Miller et al., 2013; Pribram, Miller, & Galanter, 1960).

Few studies have focused on reading comprehension strategy intervention in children with ADHD (Chavez, Martinez, & Pienta, 2015; Cullen, Alber-Morgan, Schnell, & Wheaton, 2014; Hedin, Mason, & Gaffney, 2011; Johnson, Reid, & Mason, 2012; Rogevich & Perin, 2008). In one study, researchers examined the effect of using story maps, or graphic organizer focused on elements of a story in combination with cooperative learning among third grade students with ADHD (Chavez et al., 2015). The study lasted five weeks, with a new story introduced every week. In addition to story maps and cooperative learning, students listened to or read the story for four days of the week. On the fifth day, two comprehension tests were administered. On average, score increases of 12.09% and 14.16% were noted, respectively (Chavez et al., 2015).

In three other studies, teenagers with ADHD received instruction modeled after a 2004 study by Mason (Hedin et al., 2011; Johnson et al., 2012; Rogevich & Perin, 2008). Mason combined self-regulated strategy development, or a program that featured independent instruction, monitoring, and enforcement with setting goals, with TWA (K.R. Harris & Graham, 1996; Mason, 2004). TWA stands for “Think before reading, think While reading, think After reading” (Mason, 2004, p. 284). The technique focused on asking questions, making connections, identifying the main idea, using repair strategies, and retelling. Although Mason included children with

ADHD in her study, she did not clarify whether the children belonged to the experimental or control groups (Mason, 2004).

The first study based off of Mason's research explored changes in reading comprehension among 63 teenage boys with behavioral disorders; 31 of these participants also had ADHD (Rogevich & Perin, 2008). Half of the participants were instructed using the TWA technique with a writing component and the other half received an alternative, non-specified instruction. Students read science texts, and instruction lasted five, 45 minute sessions. Students with ADHD in the TWA group outperformed matched peers immediately following instruction; however, they did poorer than students who only had behavioral disorders in generalization and maintenance (Rogevich & Perin, 2008).

The second study focused two male students with ADHD (Hedin et al., 2011). One was in fourth grade and also had a speech and language impairment. The other was in fifth grade and had a learning disability. Following ten individual instruction sessions, both students showed improvement in identifying main ideas and retelling; however, as in the previous study, improvement was not maintained (Hedin et al., 2011).

The third study included three teenage boys with ADHD and examined changes in naming main ideas and supporting details during retelling (Johnson et al., 2012). Two had hyperactivity/impulsivity symptoms and inattentive symptoms, and one was described as mildly mentally handicapped. The other had only inattentive symptoms and a speech and language impairment. Instruction lasted six

to seven sessions. All participants demonstrated growth in the target areas with maintenance (Johnson et al., 2012).

The final study on reading comprehension strategy instruction in children with ADHD involved the use of a computer program (Cullen et al., 2014). The program, Headsprout Comprehension, targeted asking and answering questions, identifying the main idea, and making inferences. It also included the use of graphic organizers. One of the participants in the research study was a fifth grader with ADHD. In addition to receiving general reading instruction, the participant learned via Headsprout Comprehension for nine 15 to 30 minute sessions. At the study's conclusion, the participant demonstrated gains in reading comprehension (Cullen, et al., 2014).

In conclusion, there is evidence to support the use of several reading comprehension strategies in children and teens with ADHD (Chavez et al., 2015; Cullen et al., 2014; Hedin et al., 2011; Johnson et al., 2012; Rogevich & Perin, 2008). These include asking questions, using repair strategies, making connections, identifying the main idea, inferring, and retelling. Graphic organizers, cooperative learning, multiple strategy instruction were all used as well (Cullen et al., 2014; Chavez et al., 2015; Hedin et al., 2011; Johnson et al., 2012; Rogevich & Perin, 2008). Of the efficacious strategies for typically developing children listed above, only creating mental images was not targeted.

Down Syndrome and Reading

Down syndrome occurs when an individual possess an additional chromosome 21 (Böök, Fraccaro, & Lindsten, 1959 as cited by Jarvik, Falek, & Pierson, 1964). Ninety-five percent of individuals with Down syndrome possess this additional chromosome in every cell in their body; this is known as complete trisomy 21 (Bull & the American Academy of Pediatrics Committee on Genetics, 2011). Four to five percent of individuals with Down syndrome have translocation chromosome 21, where in addition to having the standard pair of chromosome 21, part of chromosome 21 is attached to another chromosome. Finally one to two percent have mosaicism, where chromosome 21 is located in only some of their cells (Bull & the American Academy of Pediatrics Committee on Genetics, 2011).

According to the Center for Disease Control and Prevention, Down syndrome is the most common chromosomal disorder, affecting 1/691 children (Parker et al., 2010). Among individuals with Down syndrome, 6-8% have ADHD and an estimated 10% ASD (Coe et al., 1999; Gath & Gumbley, 1986; Myers & Pueshel, 1991; Pary & Hurley, 2002).

In addition to physical differences and a variety of health difficulties, individuals with Down syndrome also experience cognitive deficits (Bull & the American Academy of Pediatrics Committee on Genetics, 2011). Cognitive impairment ranges from mild to severe (Bull & the American Academy of Pediatrics Committee on Genetics, 2011). In particular, children with Down syndrome experience difficulty with memory and language (Carlesimo, Marotta, & Vicari, 1997; Dykens, Hodapp, & Evans, 2006; Marcell & Weeks, 1998; Vicari, Carlesimo, &

Caltagirone, 1995). Memory difficulty occurs in visual and verbal short-term memory, with visual being the stronger of the two (Marcell & Weeks, 1998; Vicari et al., 1995). Problems have been noted in long term memory as well (Carlesimo et al., 1997; Vicari et al., 1995). Starting at two years old, expressive language falls behind receptive language (Dykens et al., 2006). Between the ages of one and eleven, children also struggle with difficulty using and maintaining skills, instead favoring older, less effective strategies (Wishart, 1993).

Individuals with Down syndrome have been shown to struggle with reading comprehension compared to typically developing peers (Laws et al., 2016; Nash & Heath, 2011). In fact, one study suggested that reading comprehension in children with Down syndrome is two to three years behind decoding (Nash & Heath, 2011). The cause of this deficit has been hypothesized to be language-based. Vocabulary knowledge and verbal short-term memory were found to strongly predict reading comprehension in children with Down syndrome compared to typically developing peers matched in reading comprehension abilities (Nash & Heath, 2011). However, other researchers have suggested that while individuals with Down syndrome struggle with verbal short-term memory, this form of memory has little to do with reading comprehension (Roch, Florit, & Levorato, 2011). This is justified in higher reading comprehension scores compared to listening comprehension scores in individuals with Down syndrome (Roch et al., 2011).

No studies were found on reading comprehension instruction for children with Down syndrome, but one was found for a 19-year-old male with Down

syndrome (Morgan, Moni, & Jobling, 2004). This participant took part in a larger study consisting of six young adults with Down syndrome; however, the results of this larger study have not been published. Instruction consisted of 15 to 30 minute sessions for 15 weeks, with two participants attending a session together. The participants learned to use the following strategies: connecting the story with prior knowledge, asking questions, inferencing, and retelling. Following completion of the instruction period, comprehension increased from an age equivalency score of six years, nine months to seven years, nine months. This study therefore indicates that reading comprehension strategy instruction may hold benefits for individuals with Down syndrome (Morgan et al., 2004).

Autism Spectrum Disorder and Reading

The DSM-V defines autism spectrum disorder (ASD) as a neurodevelopmental disorder with two distinct characteristics: difficulty with social communication and interaction, and narrow, repeating actions or areas of interest (APA, 2013). Because of this, individuals diagnosed with ASD must demonstrate impairments in areas such as social-emotional reciprocity; knowledge or use of nonverbal communication; and knowledge, formation, and maintenance of relationships. They also must present with a minimum of two repetitive and restrictive actions or interests, such as experiencing difficulty with change; over- and/or -under reacting to various sensory input; showing intense, specific interests; and moving their body, using objects, and talking repetitively. A person must demonstrate these characteristics before beginning elementary school, and these

characteristics must significantly impair their life. In addition, these characteristics must not be due to an intellectual disability, defined as difficulty with thinking and adapting, or global developmental delay, defined as a diagnosis given to children unable to complete an assessment for intellectual disability. It is important to note that two people with the same diagnosis of ASD will likely not demonstrate the same characteristics. According to the American Psychiatric Association, “Manifestations of the disorder vary greatly depending on the severity of the autism condition, developmental level, and chronological age; hence, the term *spectrum*” (APA, 2013).

The American Psychiatric Association estimates that 70% of individuals with ASD have one additional mental disorder and 40% have at least two. Examples include attention deficit hyperactivity disorder and intellectual disability. Individuals with ASD may also experience difficulty with language and engage in disruptive and/or self-injurious behaviors (APA, 2013).

The prevalence of ASD appears to be increasing (Maenner et al., 2014). In a 2012 study, the Center for CDC estimates one in 68 eight-year-olds has ASD (Christensen et al., 2016). In comparison, in 2000, the CDC estimated one in 150 eight-year-olds had ASD (Center for Disease Control and Prevention, 2016). Even considering the 2012 findings, having been published prior to the DSM-V’s revised criteria, may be an over-estimate, with an ever-increasing awareness and improving diagnostic process, the overall prevalence may well continue to grow (Maenner et al., 2014). For example, in the 2012 study mentioned earlier, the prevalence of ASD among non-Hispanic white children was 50% higher than among Hispanic children

(Christensen et al., 2016) However, this disparity may be due to language barriers, lack of awareness and access to healthcare, and the stigma of the diagnosis, rather than a difference in genetic predisposition for ASD (Zuckerman et al., 2013; Zuckerman et al., 2014). Therefore, if awareness and access are increased and the stigma and barriers decreased, the overall prevalence of ASD among eight-year-olds may increase (Maenner et al., 2014). At this time, there is no known single cause for ASD. The disorder is most likely due to a combination of environmental factors and genetics. (APA, 2013).

Individuals with ASD have long been thought to experience difficulty reading (Kanner, 1943). In a metaanalysis of 36 studies measuring the reading abilities of individuals with ASD, researchers found that individuals with ASD, when compared to typically developing peers, scored below average in reading comprehension (H.M. Brown et al., 2013). On further examination, individuals with ASD matched peers in decoding and performance IQ, or visual-spatial processing and the ability to synthesize parts into a whole, but scored moderately lower on vocabulary knowledge and much lower on comprehension of texts requiring social knowledge (H.M. Brown et al., 2013; Stothers & Klein, 2010). However, in every area outliers existed, scoring both above and below typically developing peers (H.M. Brown et al., 2013).

Potential explanations for this lower reading comprehension include experiencing weak central coherence as well as with problems with executive functions and theory of mind. (Williamson, Carnahan, & Jacobs, 2012). Weak central

coherence is thought to be the tendency for individuals with ASD to focus on details instead of larger, main ideas – in other words, to over-rely on local processing instead of global processing (Happé & Frith, 2006). Weak central coherence may result in difficulty identifying main ideas (Frith, 2003).

In individuals with ASD, difficulty with EF can cause unnecessarily long answers to comprehension questions and a tendency to talk only about how a text relates to their personal interests (Williamson et al., 2012). It might also cause difficulty with self-monitoring while reading, without which repair strategies cannot be initiated (Carnahan & Williamson, 2010). In addition, difficulty with EF may result in attempts to aid comprehension by asking pre-reading questions in order to prime background knowledge backfiring. In one study, when asked pre-reading questions, several participants with ASD activated the wrong prior knowledge and perseverated on it during and after reading (O'Connor & Klein, 2004). Difficulty with EF or weak central coherence may result in problems inferencing, either because the person becomes distracted and cannot pull the required information together or only focuses on half of the information needed (Joliffe & Baren-Cohen, 1999; Norbury & Bishop, 2002).

Finally, theory of mind is the capability to recognize people have separate thoughts, and that these thoughts influence behavior (Premack & Woodruff, 1978). Problems with theory of mind can result in trouble forming predictions, understanding characters' feelings, and interpreting figurative language (Happé, 1994; Hundert, 2009; Myles et al., 2002 as cited in Carnahan & Williamson, 2010).

Difficulty with theory of mind and executive functions can result in struggling to recognize pronouns' referents (O'Connor & Klein, 2004). It is important to note that these difficulties can vary in each individual (Williamson et al., 2012).

Despite knowing that individuals with ASD often struggle with reading comprehension, "reading comprehension intervention research in ASD currently lags 30 years behind mainstream reading comprehension instruction" (Koppenhaver, 2010). Out of the six known studies examining reading comprehension intervention, four studies focused on cooperative learning for children with and without ASD. In the first study, researchers followed three males with high-functioning autism, ages eight and nine, and their peers, which included typically developing students, students with learning disabilities, and one student with a behavior disorder (Kamps, Barbetta, Leonard, & Delquadri, 1994). In addition to whole-class reading instruction by the classroom teacher, the participants were paired with a peer to engage in peer tutoring. Peer tutoring entailed thirty minutes in which students took turns reading passages and scoring each other on fluency and comprehension questions, along with providing feedback; the teacher provided bonus points for following correct behavior. Following tutoring, the students reported the scores to the teacher, who wrote the class total on the board. All three students with ASD improved in answering reading comprehension questions. Prior to the experiment, their accuracy ranged from 24-67%; during the second set of peer tutoring, their accuracy ranged from 85-100%. Only one student showed maintenance during a return to baseline. Eleven of the 13 classroom peers showed

improvement during the second set of peer tutoring; four were able to maintain scores during baseline, and one remained the same (scoring 80-100%) during both the baseline and peer tutoring. Despite this, only one student with ASD reported noticing improvement in reading comprehension, while classroom peers generally reported improvement (Kamps et al., 1994).

In a second study, researchers followed a third grade male with high functioning ASD and his peers, consisting of typically developing students and students with learning disabilities, reading difficulties, and behavioral disorders (Kamps, Leonard, Potucek, & Garrison-Harrell, 1995). Following an hour of whole-class lectures, student-teacher discussions, and peer work, students formed randomized, rotating cooperative learning groups of four. These groups worked on vocabulary, asked each other comprehension questions, and played a game involving characters and facts from their reading. During baseline, the student with ASD showed improvements on post-tests measuring vocabulary, comprehension questions (factual and inferential), and sequencing by 4 points and during the second set of cooperative learning, by 8.7 points. Maintenance did not occur during a return to baseline. Peers showed improvements during baseline ranging from 1-4.5 points and during the second set of cooperative learning by 9-13 points. During a return to baseline, scores were higher than the original baseline but not as high as during cooperative learning groups (Kamps et al., 1995).

In a third study, a 12-year-old girl with ASD and lower-functioning mental disability, a 13-year-old girl with ASD and moderate-functioning mental disability,

and their fifth grade peers, some of which had learning disabilities and/or received outside reading instruction (Kamps et al., 1995). Baseline consisted of class-wide lecture and discussion, as well as oral reading. This instruction continued during the experiment in addition to 30 to 40 minutes of cooperative learning, where students wrote out sentences using vocabulary from the reading, in addition to tutoring each other on vocabulary and answers to comprehension questions. Students received positive reinforcement for good behavior. Following the first set of cooperative learning groups, the two students with autism did independent work during a return to baseline and were given basal readers instead of novels. In addition, pre-tests were modified from targeting vocabulary and comprehension questions to focusing on filling in the blank. Five other students received supplemental reading instruction. Despite these changes, the student with low-functioning mental abilities showed no improvement from baseline to cooperative learning groups. The student with moderate-functioning mental abilities made no improvement on baseline post-tests, but improved by 5 points during the final set of cooperative learning groups. This student also demonstrated an increase in 2.5 points on post-tests during a return to baseline. Classroom peers improved by 4-6 points on post-tests during baseline, and during the final set of cooperative learning groups by an average of 8.4. It is important to note that no growth was noticed in the classroom peers during the first set of cooperative groups (Kamps et al., 1995).

In the fourth and final study on cooperative learning groups, researchers followed three males with ASD ranging from seven to eight years old and their

typically developing classroom peers (Whalon & Hanline, 2008). In groups of four, participants were instructed on story structure as well as proper group behavior then learned about asking questions. Researchers provided explicit instruction, modeling, and prompting, and each participant received a storyboard, cards with question words and events, a copy of the story, and a checklist for reading and asking questions as a group. All three students with ASD increased the number of questions they asked and answered unprompted; two of the students also showed an increase in the type of questions asked. In a follow-up interview, the students reported they still asked questions. Though no data was taken on their classroom peers' productions, three out of nine peers reported learning to ask questions, and six out of nine said they still asked questions. The mothers of the three participants of ASD were shown videos of the experiment and noted improved question formation and a decrease in needed prompts when asking questions (Whalon & Hanline, 2008)

Two additional studies examined other forms of treatment for reading comprehension in children with ASD. In one study, researchers used drawing and writing, prior knowledge, inferencing, and question answering (Colasent & Griffith 1998). Three participants with ASD took part: a 14-year-old female, a 13-year-old male, and a 14-year-old, Spanish-English bilingual male. All three were described as "essentially nonreaders" on their individualized education plans, which also included no reading goals (Colasent & Griffith, 1998, p. 415). Researchers read three stories about rabbits to the participants. Prior to the first reading, researchers

instructed participants on rabbits, and during readings the participants made predictions. Afterwards, researchers asked participants questions about story structure, main ideas, and how they personally felt about the story. Participants then drew or wrote about the story and were asked the questions again. All participants correctly answered four questions across the three stories. Following the third story, at least one participant correctly answered nine questions, and following drawing and writing, at least one participant correctly answered eleven questions. Before the study began, the participants did not appear to respond when listening to stories in the classroom; however, during the studies, the participants reacted both verbally and physically in the form of emotional facial expressions (Colasent & Griffith, 1998).

In the other study, researchers targeted anaphoric cuing (recognizing referents), pre-reading questions, and cloze-sentences (O'Connor & Klein, 2004). There were 20 participants with an average age of 15 and the following diagnoses: ASD, Asperger syndrome, or Pervasive Developmental. Only one participant was female. Each participant read five short stories, one for each targeted area and two as controls. Prior to reading each story, researchers provided brief instruction on the corresponding targeted area. For anaphoric cuing, participants circled corresponding referents for pre-selected anaphoric devices from a field of three while reading; for pre-reading questions, the instructor asked questions prior to the student reading. Finally, for cloze-sentences, participants filled in blanks left in the story by the researcher while reading. Prompts were provided. After reading,

researchers asked questions about main ideas, factual and inferential questions, and incongruous sentences. They also requested that participants retell the story. Only anaphoric cuing resulted in statistically significant gains in reading comprehension (O'Connor & Klein, 2004).

Taken together, these six studies show reading comprehension may be successfully targeted in children with ASD (Colasent & Griffith, 1998; Kamps et al., 1994; Kamps et al, 1995; O'Connor & Klein, 2004; Whalon & Hanline, 2008). The first four studies suggest cooperative learning groups composed of peers with and without autism together with targeting question asking and answering, story structure, and vocabulary are beneficial in improving reading comprehension for most students (Kamps et al., 1994; Kamps et al, 1995; Whalon & Hanline, 2008). However, some students may require more instruction time than others or different reading material, and cooperative learning groups have not been shown to benefit students with low-functioning mental disabilities (Kamps et al., 1995). The second group of studies suggest additional beneficial strategies in the form of drawing and writing, prior knowledge, inferencing, question answering, and anaphoric cuing (Colasent & Griffith, 1998; O'Connor & Klein, 2004).

Reading and Book Clubs

As a place where books are read and discussed – a naturally occurring collaborative learning group - book clubs could be an ideal environment for improving reading comprehension (John, 2006; Littlejohn, 2011; McLellan, 2012; O'Donnell-Allen, 2006). Researchers in one study demonstrated the benefits of book

clubs for typically developing children in the classroom (Raphael & McMahon, 1994). In addition to taking part in book clubs, students engaged in reading, writing, whole-class discussion, and instruction. These extra activities targeted fluency, understanding of story structure, question asking, sequencing, vocabulary knowledge, main ideas, prior knowledge, graphic organizers, and inferencing. Three to five students made up each book club (Raphael & McMahon, 1994). Participants in the book clubs received standardized test scores similar to students in more commonly occurring reading programs, and when asked about book club the next year, could name and discuss at least nine of the sixteen books read. Students who received other instruction could not remember any stories covered the previous year (McMahon, Raphael, & Goatley as cited in Raphael & McMahon, 1994).

This same book club format was provided for children with special needs (Goatley, 1997). Researchers observed ten children, all with special needs and in upper-elementary. Five took part in a book club located in their self-contained classroom; the other five participated in the general classroom's book clubs. The students in the self-contained classroom also received scaffolding and a chart listing how and what to discuss. Initially, all of the students with special needs struggled with answering questions, understanding there may not be one right answer, forming inferences that were not literal, and using prior knowledge in the form of other media. However, over time for both the children in the self-contained and general classrooms, improvements occurred in both the elaboration of answers and the use of prior knowledge (Goatley, 1997).

In 2016, a researcher studied the participation of older students with intellectual disabilities in book clubs. (Kemp-Inman, 2016). One student also had a hearing impairment. The participants ranged in age from 16 to 18 years old. Two participants were at the first grade reading level, and one was a pre-reader. Each session, the researcher read a chapter of an adapted, age-appropriate book to one-on-one to the participants. Two participants also received additional summaries after each page. Following the read-aloud, the researcher asked a series of literal questions. Each participant then joined a book club with two typically developing students, where the literal questions were asked again and inferential questions were added. Models, explanations of thought processes, and cues were provided. All three participants' correct responses increased during treatment, with one participant achieving mastery; all participants also increased in their number of contributions made to the discussion (Kemp-Inman, 2016).

Only one study specifically involved the participation of children with ASD (Kaufmann, 2005). Researchers followed three males between the ages of 12 and 14 with Asperger syndrome with additional diagnoses of attention-deficit/hyperactivity disorder, obsessive-compulsive disorder, and anxiety. Participants attended a book club together one hour for eight weeks, and answered comprehension questions, filled out graphic organizers, and received cues to locate page numbers during discussion. Two participants showed improvement on scores measuring comprehension following oral reading, increasing from grade levels of 5.2 to 6.0 and 3.7 to 6.4 (Kaufman, 2005).

Summary

Individuals with ADHD, Down syndrome, and ASD may experience difficulty with reading comprehension, or a purposeful interaction between the reader and the text through which meaning is obtained (H.M. Brown et al., 2013; Cain & Bignell, 2014; Durkin, 1993; Laws et al., 2016; Lombardino et al., 1997; Miller et al., 2013; Nash & Heath, 2011). Efficacious methods to improve reading comprehension in typically developing children include connecting the story with prior knowledge, identifying the main idea, asking questions, creating mental images, making inferences, retelling, using repair strategies, cooperative learning, multiple strategy instruction, and graphic organizers (Baumann, 1984; Hansen, 1981; Keene & Zimmerman, 1997; National Reading Panel, 2000; Rosenshine & Meister, 1994; Winograd, 1984). Researchers from 12 studies examining these methods in individuals with ADHD, Down syndrome, and ASD suggest some are efficacious for this population as well (Chavez et al., 2015; Colasent & Griffith, 1998; Cullen et al., 2014; Hedin et al., 2011; Johnson et al., 2012; Kamps et al., 1994; Kamps et al, 1995; Morgan et al., 2004; O'Connor & Klein, 2004; Rogevich & Perin, 2008; Whalon & Hanline, 2008). Because book clubs are a place where books are read and discussed, they may be an ideal environment for improving reading comprehension (John, 2006; Littlejohn, 2011; McLellan, 2012; O'Donnell-Allen, 2006). Indeed, several studies suggest they are beneficial for children with and without ASD (Goatley, 1997; Kaufman, 2005; Raphael & McMahon, 1994).

CHAPTER III

RESEARCH QUESTION

How does a book club affect the reading comprehension strategy use of children with varying disabilities?

CHAPTER IV

METHODS

Four speech-language pathology graduate students carried out the research. All researchers underwent training in Human Subjects Protection and received approval from the Institutional Review Board at the University of Northern Iowa.

Participants

In order to qualify, participants were required to be in third through fifth grade and read near or at grade level. Participants from the Midwest were recruited through fliers distributed among speech-language pathologists working in a schools as well as student clinicians and supervisors at a university speech and hearing clinic. Fliers were also posted at the clinic, area schools, and local libraries. Parents of past research participants and of children in an inclusive extracurricular activity were also notified of the study via email and handouts.

Two participants signed up for the research study. Per parental report, both participants were in third grade, attended the general classroom, and enjoyed reading. One participant, Mary, had Down syndrome. The other participant, Ethan, had ADHD and struggled interacting socially with peers. Ethan also had difficulty with sensory processing and disliked loud noises and crowded areas. He would repeat sounds until asked by his parents to stop.

Procedures

Pre-Testing

The week before the book club began, participants arrived at a university clinic for pre-testing of decoding and reading comprehension strategy use.

Participants and their parents were required to sign consent forms before beginning testing. The participants were also asked if they preferred their parents to be with them for testing, and if they said yes, parents were seated in a corner of the testing room. Parents were also given a questionnaire regarding the participant's potential diagnoses; participant's reading level and preferences; and parent's expectations for the book club.

To test decoding, participants were given the word recognition test from the *Critical Reading Inventory*, 2nd edition (A.J. Applegate, Quinn, & Applegate, 2008). A list of 20 words matching the participant's grade level was given first, and a score of 70% accuracy was needed to advance to the next highest grade level's list. If the participant scored below 70%, they would take the next lowest grade level's list and so on until receiving a score at or above 70%. Testing was discontinued at the second and fifth grade levels.² These parameters were decided based on the requirement that book club participants be in grades third through fifth.

² Had participants scored below 70% at the second grade level, further testing would have been conducted to determine listening comprehension grade level using narrative reading passages and corresponding comprehension questions from the *Qualitative Reading Inventory*, 5th edition (Leslie & Caldwell, 2010). All further testing would have been then conducted aurally, with passages matched to listening comprehension grade level.

Participants were then given a reading passage from the *Critical Reading Inventory* matching their reading level as determined by the word recognition test (M.D. Applegate, Quinn, & Applegate, 2004). The *Major Point Interview for Readers* was given in conjunction with the reading passage in order to test reading comprehension strategy use (Keene & Zimmerman, 1997). The *Major Point Interview for Readers* can be paired with any reading passage and scores participants on seven reading comprehension strategies based on their responses to open-ended questions using a five point rubric. The strategies scored were as follows: connecting the story with prior knowledge (in the test, this is described as, “Uses Schema”), identifying the main idea (“Determines what is important”), asking questions (“Questions”), creating mental images (“Visualizes”), making inferences (“Infers”), retelling (“Synthesizes” and “Retelling”), and using repair strategies (“Monitors Comprehension”). Additional opportunities for examinees to demonstrate use of these strategies is offered in “Thinks Aloud” sections, where the examinee is encouraged to share anything they were thinking during reading. The test was modified slightly to add a scoring component for the “Think Aloud” following the second reading by copying the scoring assigned to the first “Think Aloud” (Keene & Zimmerman, 1997). This was done in order to create a scoring component for every portion of the test procedure. Pre-testing sessions concluded with a discussion of what participants could expect from the book club.

Book Club

The book club was held at a university library's youth section in order to increase naturalness. Initially, it had been created to foster learning in children with and without ASD. However, no participants with ASD or typically developing children enrolled. Eight meetings, lasting 65 minutes each, were held across four months. In general, meetings were two weeks apart. Due to the limited number of participants, researchers both facilitated club meetings and acted as fellow book club members. Four books were chosen based on visual support and grade level: *Flat Stanley* by Jeff Brown, *Temple Did It, and I Can, Too! Seven Simple Life Rules* by Jennifer Gilpin Yacio, *Zita the Spacegirl* by Ben Hatke, and *Frindle* by Andrew Clements (J. Brown, 1964; Clements, 2003; Hatke, 2010; Yacio, 2015). These books were chosen based on grade level, relevancy, notoriety, and levels of visual support (Kosmicki, 2016). Each book had third grade in the range of reading levels reported on Amazon.com.

During the first meeting, participants were familiarized with each other and how book clubs work. In order to illustrate how book club discussion worked, the first two chapters of the book were read prior to participants watching researchers model discussion and then join in. With an exception of also reading a portion of *Zita the Spacegirl* to familiarize participants with reading graphic novels, participants were expected to read books outside of meetings.

The rest of the sessions began by participants summarizing the assigned reading's plot. During the second session, this was followed by 15 minutes of

reading comprehension strategy instruction on connecting the story with prior knowledge. All other sessions included 30 minutes of reading comprehension strategy instruction. Fifteen minutes were devoted to connecting the story with prior knowledge, and the other 15 minutes featured a different strategy each time: identifying the main idea, asking questions, creating mental images, making inferences, retelling, and using repair strategies. Instruction utilized a mix of reciprocal testing and graphic organizers and was modified from *Mosaic of Thought* and the 1984 study by Baumann cited by the National Reading Panel on identifying main ideas (Keene & Zimmerman, 1997; National Reading Panel, 2000). Remaining time was used for free discussion of the book, related art projects, and/or introducing the next session's reading. During the last session, some of the remaining time was used to discuss favorite books as part of an "end of book club party." A more detailed description of each book club session can be seen in Table A1.

Post-Testing

Post-testing occurred at a university clinic the week following the book club's conclusion. Parents were interviewed in a separate room while participants were given the same reading passage from pre-testing. Word recognition tests were not re-administered because treatment did not target decoding, nor was a different reading passage matched for grade level word recognition needed as passages were re-used to control for independent variables. The *Major Point Interview for Readers* was re-administered. Participants were also asked to specifically make one text-to-

self, text-to-text, and text-to-world connection based on the reading passage. This addition was made because while the *Major Point Interview for Readers* includes testing on connecting the story with prior knowledge, the language used in the test was not that of the language used in the club during direct instruction.

Inter-rater Reliability

A second researcher watched recordings of the pre- and post-tests and scored use of reading comprehension strategies. Results were compared, and agreement was 18%. Tests were then rescored by consensus, with agreement at 100%.

Because the *Major Point Interview for Readers* has limited protocol and there are no known studies using this test, additional protocol was created following the initially low inter-rater reliability. Two areas of the test were identified as negatively affecting reliability: the use of additional prompts and the rubric's wording. It was determined that, although additional prompts had been given during testing, participants' responses to them would not be considered in scoring. Participants were scored solely on their initial responses to the test's questions.

Regarding the rubric's wording, for each score, a corresponding description often listed several behaviors. For example, a score of four on "Thinks Aloud" was given if the participant, "generates questions, identifies problems, infers, elaborates text events with own experience, may make predictions about overall book meaning" (Keene & Zimmerman, 1997, p. 231). There were questions over whether or not participants needed to demonstrate all behaviors or only one. It was

determined that participants' responses needed to only match one of the corresponding rubric's descriptions unless otherwise specified. Using the example above, participants only need to generate questions to receive a score of four. However, to receive a score of four on "Infers," participants must completely fulfill the description: "Draws conclusions and/or makes predictions and can explain the source of the conclusion or prediction" (Keene & Zimmerman, 1997, p. 232). The "and" specifies a conclusion or prediction without an explanation would not receive a score of four.

There was also complication regarding the specific words used in corresponding descriptions. Specifically, researchers disagreed over what was considered an irrelevant question in comparison to a question that clarified meaning – a difference between a score of one and three on "Asks Questions" (Keene & Zimmerman, 1997). This disagreement arose over Ethan questioning what the main character looked like during the post-test, when the character's appearance did not affect the plot. It was decided that if a question was about the text, but did not lend itself toward determining the main idea, it was irrelevant. Ethan's question was therefore given a score of one.

CHAPTER V

RESULTS

Pre-Testing

Both Mary and Ethan decoded at the fifth grade level, as determined by the word recognition test. Mary read the corresponding passage orally while Ethan read it silently. In answering questions on the *Major Point Interview for Readers*, Mary would often read directly from the text and tended to perseverate on the last few sentences of the reading. Inaccurate yes/no responses were also noted when discussing what to expect in the book club, with Mary's mother correcting Mary's answer of yes to the question of whether or not she had read some of the club's books. Mary received a score of 22 and Ethan 32 on the *Major Point Interview for Readers*. Detailed results of pre-testing are listed in Tables 1 and 2.

Book Club

Mary was unable to attend sessions five and six. Due to Mary's absences, summary notes were put at the end of each chapter in *Frindle* to ensure she did not fall behind with the story. Mary's mother reported Mary struggled with *Zita the Spacegirl* in particular due to the graphic novel's use of onomatopoeia.

Ethan attended all sessions. His mother reported him reading *Zita the Spacegirl* multiple times; he was also reading several free-reading books. Prior to introducing text-to-self, text-to-text, and text-to-world connections, Ethan was able to independently make one text-to-text connection during discussion.

Post-Testing

Mary received a score of 23 and Ethan 33 on the *Major Point Interview for Readers*. Therefore, both participants showed an increase of one point on the *Major Point Interview for Readers*. Ethan was also able to create the three types of connections when asked following testing, while Mary was unable to. Detailed results post-testing can be found in Tables 1 and 2.

Table 1: Mary's Scores on the *Major Point Interview for Readers*

Area	Pre-Test Score	Post-Test Score
Thinks Aloud 1	3	3
Uses Schema	1	1
Infers	2	3
Questions	1	1
Determines What is Important in Text	3	3
Thinks Aloud 2	3	3
Monitors Comprehension	1	1
Visualizes	2	2
Synthesizes	4	3
Retelling	2	3
Total	22/55	23/55

Table 2: Ethan's Scores on the *Major Point Interview for Readers*

Area	Pre-Test Score	Post-Test Score
Thinks Aloud 1	3	4
Uses Schema	3	3
Infers	3	5
Questions	3	1
Determines What is Important in Text	3	3
Thinks Aloud 2	4	4
Monitors Comprehension	3	2
Visualizes	3	3
Synthesizes	3	4
Retelling	4	4
Total	32/55	33/55

CHAPTER VI

DISCUSSION

Both Mary and Ethan showed improvement in the area of inference. Ethan also improved in the area of “Thinks Aloud 1,” where he demonstrated the use of question asking, which he had not during the pre-test “Thinks Aloud 1.” However, Ethan’s scores decreased in the areas of using repair strategies and specifically asking questions. While Ethan’s scores did not indicate increases in the ability to make connections, he was able to supply all three types of connections when prompted. Mary’s scores increased in the area of retelling, but decreased in synthesizing.

Post-testing supports past research stating that children with ADHD and Down syndrome possess difficulty with reading comprehension (Cain & Bignell, 2014; Durkin, 1993; Laws et al., 2016; Lombardino, et al.,1997; Miller et al., 2013; Nash & Heath, 2011). Due to past studies indicating positive results from six of the seven strategies targeting reading comprehension in children with ADHD, Ethan should have shown greater improvement in post-testing (Chavez et al., 2015; Cullen et al., 2014; Hedin et al., 2011; Johnson et al., 2012; Rogevich & Perin, 2008). One possible explanation for lower results include lower treatment intensity. In the study by Chavez et al., participants were in third grade but received treatment four out of five days for five weeks. That is 20 treatment sessions compared to seven (2015). Another possible explanation might be age. In the other studies showing benefits for individuals with ASD, participants were in fourth and fifth grade or

teenagers (Cullen et al., 2014; Hedin et al., 2011; Johnson et al., 2012; Rogevich & Perin, 2008). With only one study on reading comprehension instruction in individuals with Down syndrome, it is difficult to compare Mary's results. However, treatment intensity and age could also play a factor as well (Morgan et al., 2004). In addition, given the fact that children with Down syndrome between one and eleven years old often struggle to gain new skills, small improvement in reading comprehensions strategy use might be expected (Wishart, 1993).

In terms of the benefits of book clubs in general, Goatley (1997) found improvements in the use of prior knowledge. This was seen in Ethan's ability to make the three types of connections during post-testing compared to one text-to-text connection prior to instruction. These gains were not observed in Mary. In addition, although Goatley (1997) also noted gains in elaboration of answers, both Mary and Ethan showed both increased and decreased elaboration depending on the strategy. Benefits seen in the other studies could not be confirmed in the current study due to differences in measuring growth – for example, accuracy answering literal and inferential questions (Kaufman, 2005; Kemp-Inman, 2016; McMahon, Raphael, & Goatley as cited in Raphael & McMahon, 1994)

There are many confounding factors when considering these results. First, the small sample size makes drawing strong conclusions difficult. It is also hard to determine whether these increases and decreases might be due to the book club or natural variability in test performance. In addition, although the reading comprehension passages were read four months apart, it is hard to know if areas of

decrease were due to participants having previously stated information during the first testing and saw no need to repeat themselves. Finally, because Mary and Ethan were in school for much of this time, how much of the changes in test results can be contributed to the book club and how much to classroom instruction? These three areas of difficulty could have been resolved by using a multiple baseline with a control group design and utilizing two different passages matched for grade level at the pre- and post-tests.

It is unknown whether Mary might have received a higher score or been able to name more connections had she been present for all seven sessions. It is also interesting to consider if any changes would have occurred if there had been more participants, lending itself perhaps towards more participant-led discussion and cooperative learning. Furthermore, is any instruction necessary for reading comprehension strategy growth in a book club setting? Despite attempts to create a naturalistic experience, with few participants and instruction on reading comprehension strategies, the book club setting was atypical. It is also possible that increasing instruction time might have resulted in greater improvements.

In conclusion, book clubs featuring instruction on reading comprehension strategies may lead to small growths in overall use of said strategies. However, as indicated by the literature review, the study at this time is no replacement for intensive intervention. Future research might explore repeating the study with a single subject multiple baseline, control group design, providing participants with different reading passages for pre- and post- testing, and increasing the number and

type of participants. Length of instruction time might also be explored, as well as focusing on instruction of several strategies instead of all seven. Testing could be varied to include measurements used in past book club studies. Finally, another area could be comparing three groups: children not partaking in any book club, children partaking in a book club without instruction, and children partaking in the book club described in this study.

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APPENDIX
BOOK CLUB SCHEDULE

Table A1: Schedule for Book Club Sessions

Session Number & Book Discussed	General Schedule	Description of Strategy Instruction
1 : <i>Flat Stanley</i>	<ul style="list-style-type: none"> - Create nametags - Members share what they are good at and what they like - Popcorn read first two chapters - Observe mock book club discussion carried out by three researchers - Based on mock discussion, create list of book club rules - All members take part in discussion, following book club rules - Art project 	N/A
2 : <i>Flat Stanley</i>	<ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior knowledge - General Discussion - Introduce <i>Temple Did It, and I Can, Too!</i> <ul style="list-style-type: none"> - Video of Temple Grandin - Look at pictures 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Define 3 types of connections: text-to-self, text-to-text, text-to-world - Give examples using book - Ask participants if they are able to provide their own examples

<p>3 : <i>Temple Did It, and I Can, Too!</i></p>	<p>- Read author bio</p> <ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior knowledge - 15 min. reading strategy instruction on using repair strategies - General Discussion - Art Project - Introduce <i>Zita</i> <ul style="list-style-type: none"> - Look at pictures and introductory quote - Practice reading first few pages to familiarize with how to read graphic novels 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Practice making text-to-self connections <ul style="list-style-type: none"> - Participants draw slips of paper. Each slip lists something from the book - for example, "Temple loves cows." It also lists a prompt for the member to make a connection, such as "I love..." <p>Using Repair Strategies</p> <ul style="list-style-type: none"> - Model difficulties participants might have with reading and repair strategies - Example: trouble understanding meaning of word – see if know a word that is similar, re-read what is around the word, look at pictures, etc. - Ask participants what difficulties they had, and work through how to solve them
	<ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior knowledge - 15 min. reading strategy instruction on making inferences - General Discussion - Introduce <i>Frindle</i> 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Practice making text-to-self connections <ul style="list-style-type: none"> - Members draw slips of paper. Each slip lists something from the book. However, there is no prompt for the reader to make a connection. <p>Making Inferences</p> <ul style="list-style-type: none"> - Define inferences

		<ul style="list-style-type: none"> - Model inferencing - Ask participants to infer what will happen in sequel to <i>Zita</i> and in <i>Frindle</i>
5 : <i>Zita</i>	<ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior knowledge - General Discussion - 15 min. reading strategy instruction on asking questions - Art Project - Introduce <i>Frindle</i> 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Practice making text-to-text connections <ul style="list-style-type: none"> - Participants are shown a graphic organizer that has boxes labeled with different topics such as "Being Bullied." Members then glue slips of paper with statements about <i>Flat Stanley</i>; <i>Temple Did It</i>, and <i>I Can, Too!</i>; and <i>Zita</i> into the corresponding boxes. There are at statements from at least two of the books for each topic. Members are asked if they can make any other text-to-text connections for the graphic organizer. <p>Asking Questions</p> <ul style="list-style-type: none"> - Questions can be asked before, during, or after reading. Provide examples specific to book - Ask participants to provide their own questions - Clarify that there are often no right or wrong answers - Discuss how questions help with comprehension
6 : <i>Frindle</i>	<ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Practice making text-to-text

	<p>story with prior knowledge</p> <ul style="list-style-type: none"> - 15 min. reading strategy instruction on identifying the main idea - General Discussion - Art Project 	<p>and text-to-self connections</p> <ul style="list-style-type: none"> - Participants glue slips of paper with statements about <i>Frindle</i> to the graphic organizer. Members are again asked if they can make any more text-to-text connections. Finally, members are asked to make their own corresponding text-to-self connections to go with the text-to-text connections. <p>Identifying the Main Idea</p> <ul style="list-style-type: none"> - Finding the main idea means identifying the topic, finding details, and then synthesizing details to find what's most important <ul style="list-style-type: none"> - Participants practiced using two main characters - Topic = Main Character - Details = Descriptions of character - Synthesizing = Main aspect of character - Other ways to identify the main idea: bold or italicized words, the first or last sentence in a paragraph, statement that appears many times, ask self, "What does the author want me to know or think?"
7 : <i>Frindle</i>	<ul style="list-style-type: none"> - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Participants watch a video of a real child similar to the

	<p>knowledge</p> <ul style="list-style-type: none"> - 15 min. reading strategy instruction on creating mental images - General Discussion - Art Project 	<p>main character of Frindle and are asked to make text-to-world connections</p> <p>Creating Mental Images</p> <ul style="list-style-type: none"> - Describe what mental images are, how use five senses - Give two examples of using mental images - Participants are read a passage in <i>Frindle</i> where visualization is key to inferencing - Participants then asked to draw scene from passage - Participants asked to make inference and discuss how visualization helped them come to that conclusion
8 : <i>Frindle</i>	<p>End-of-Club Party</p> <ul style="list-style-type: none"> - Get food - Summarize assigned reading - 15 min. reading strategy instruction on connecting the story with prior knowledge - 15 min. reading strategy instruction on retelling - General Discussion - Guess each other's favorite books and share own 	<p>Connecting the Story with Prior Knowledge</p> <ul style="list-style-type: none"> - Participants asked to name 3 types of connections - Participants asked to make 3 types of connections with <i>Frindle</i> and later with their favorite book <p>Retelling</p> <ul style="list-style-type: none"> - Participants given worksheet to fill out with the following areas for <i>Frindle</i>: characters, setting, problem, three events, solution, and main idea - Participants then asked to summarize <i>Frindle</i> using their worksheet - Participants later asked to summarize their favorite book