THE EFFECTS OF SYSTEMATIC AND EXPLICIT INSTRUCTION WITH SHARED STORIES ON COMPREHENSION AND GENERALIZATION OF RESPONDING DURING BOOK CLUB FOR STUDENTS WITH SEVERE DISIBILITIES

by

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ABSTRACT

AMY KEMP-INMAN. The effects of systematic and explicit instruction with shared stories on comprehension and generalization of responding during book club for students with severe disabilities. (Under the direction of DR. FRED SPOONER)

The present study used a multiple probe across participants design to examine the effects of systematic and explicit instruction to teach students with severe disabilities (SD) to comprehend and discuss grade-aligned literature. The text was adapted and formatted as a read-aloud on an iPad2®. Using a modified system of least prompts, participants learned to answer literal comprehension questions that immediately followed the read-aloud. Explicit instruction was then used to highlight key character-event relationships and to teach responding to discussion questions. Following the read-aloud, participants joined peers without disabilities in a book club, where they generalized comprehension responses and discussed the text. Results indicated participants were able to demonstrate improved literal comprehension of the text and generalize their responses to the book club setting. Additionally, participants and peers demonstrated increased responding in book club discussions. Implications of the results of this study, as well as suggestions for future research and practice, are discussed.

DEDICATION

I dedicate this dissertation to my family. You have cheered for me, supported me in so many ways, and provided unconditional love throughout this entire process. To my children, Hayden and Brody: your hugs and laughter kept me going. Bob, I am so blessed to have a husband and best friend who values my dreams, even when they at times have seemed daunting. I also dedicate this dissertation to my Mom and Dad. You taught me to pursue knowledge alongside compassion for others, and you have always stood by me as I have continued this lifelong pursuit. I could not have done this without you all.

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CHAPTER ONE: INTRODUCTION

The ability to comprehend text is a pivotal skill needed to access all academic and socially-relevant content (Browder, Gibbs, et al., 2009; Keefe & Copeland, 2011) and is considered the primary purpose of literacy (Berkeley, Scruggs, & Mastropieri, 2010; Pearson & Gallagher, 1983; Vacca et al., 2012). Literacy is not an isolated activity, but instead is a shared experience among all people (Pennell, 2014; Pittman & Honchell, 2014). People engage with text in order to comprehend it and to ultimately evaluate its importance on their lives and the lives of others (Keefe & Copeland, 2011; Kliewer, 2008; Pitman & Honchell, 2014). In Vygotsky's socio-cultural learning theory (1978), he asserted that people learn from each other by collaborating and reflecting on shared knowledge and experiences of each other. As people discuss literature with each other through sharing their thoughts and opinions, they learn from each other, reflect, and often reshape their perspective in light of the ensuing discussion (Pitman & Honchell, 2014; Vygotsky, 1978). The many different ways people interact with literature, including how it relates to themselves, other people, and to other texts, creates deeper understanding of the literature (Keene & Zimmerman, 2007).

The importance of higher-order comprehension (e.g., inference, application) is reflected in current literacy standards, including the Common Core State Standards (Common Core State Standards [CCSS], National Governors Association Center for Best Practices & Council of Chief State School Officers [NGA & CCSSO], 2010), which

states that teaching these skills can lead to better "college, career, and citizenship" (p. 2, Appendix A, CCSS) preparation for all students. Consistent with this view, higher-order comprehension is necessary for effective problem solving and decision-making for the benefit of society in general (Lipman, 1998; Pennell, 2014).

A traditional view of literacy assumes reading ability as a prerequisite for accessing text. In contrast, many students with severe disabilities (SD), including those with autism and/or moderate to severe intellectual disability (ID), have little to no reading skills. Although students with SD have historically been excluded from most literacy instruction based on this traditional view of literacy, experts such as Keefe and Copeland (2011) have made a case that literacy is a right for everyone and to exclude a person is to deny them the power, including societal inclusion and informed decision-making, that comes from literacy (Keefe & Copeland, 2011; Kliewer, 2008). A more inclusive view of literacy includes traditional (e.g., reading, writing) and nontraditional methods for engaging with text (e.g., digital, audio recordings, adapted text, Keefe & Copeland, 2011). This expanded understanding of literacy also includes the goal of deeper, personal understanding of text that transcends mere reading, to encompass the various connections drawn to self and others (Keene & Zimmerman, 2007), as well as the social experience of literacy in which comprehension is mediated by interaction with others (Keefe & Copeland, 2011; Kliewer, 2008; Vygotsky, 1978).

Literacy for Students with SD

Despite the importance of including students with SD in literacy instruction that leads to comprehension, there has been limited focus in the literature on teaching higher-order comprehension for students with SD. Several research-based instructional methods

have emerged in recent years, however, which highlight strategies to optimally support these students as they demonstrate greater and greater abilities to acquire literacy skills and to access general curriculum content. These strategies include the use of shared story readings (Hudson & Test, 2011), portable technology (Mechling, 2011), and systematic instruction (Browder, Ahlgrim-Delzell, Spooner, Mims, & Baker, 2009; Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006; Spooner, Knight, Browder, & Smith, 2012) and explicit instruction (e.g., Flores & Ganz, 2007).

Shared story reading is an evidence-based practice with a moderate level of evidence for promoting access to the general curriculum for students with SD who are non-readers (Hudson & Test, 2011). Often using an adapted text, the instructor reads the text aloud and embeds engagement and responding opportunities for the student. These opportunities may include attending to the conventions of print (e.g., following text left-to-right, turning the page) and answering questions about key vocabulary words and details of the story (Browder, Trela, & Jimenez, 2007; Mims, Hudson, & Browder, 2012). Through shared story reading, students who do not yet read can access grade-appropriate literature and other academic content while also learning early literacy skills that can set the foundation for reading instruction.

Portable computer-based technology (e.g., tablet, smart phone) is another way in which teachers may increase access to literacy for students with SD, particularly by supporting communication, encouraging self-prompting, and increasing student motivation (Mechling, 2011). Recently, an iPad has been used to deliver grade-aligned shared stories to teach early literacy skills for students with autism (Spooner, Ahlgrim-Delzell, Kemp-Inman, & Wood, 2014) and to promote generalization of early literacy

skills for students with autism and developmental disabilities (Spooner, Kemp-Inman, Ahlgrim-Delzell, Wood, & Ley Davis, 2015). In both of these studies, a communication app (i.e., GoTalkNow®, Attainment Co.) was used to display elements of the shared story. Similarly, the use of e-text has been used in other studies as a part of a comprehensive literacy program (e.g., Coyne, Pisha, Dalton, Zeph, & Smith, 2012). These studies used embedded text-to-speech, picture-based response options, and highlighting features within the technology program to facilitate student engagement with the text and to deliver a text-based prompting system.

Although the use of these strategies has resulted in improved academic skills for students with SD, these students have demonstrated the most successful outcomes when provided systematic (Browder et al., 2006; Browder, Ahlgrim-Delzell, et al., 2009; Spooner et al., 2012) and explicit instruction (e.g., Ganz & Flores, 2007; Hicks, Bethune, Wood, Cooke, & Mims, 2011). Systematic instruction is the use of principles of applied behavior analysis such as systematic prompting and fading, reinforcement, and error correction to teach students to perform a skill independently (Collins, 2012; Snell, 1978), while explicit instruction is a type of systematic instruction in which the instructor provides highly structured opportunities for modeled, guided, and independent practice of skills, often called model-lead-test (Archer & Hughes, 2011; Engelmann & Carnine, 1991; Rupley, Blair, & Nichols, 2015). Explicit instruction is an evidence-based practice for teaching literacy to students with learning disabilities and mild intellectual disability (Gersten et al., 2009); emerging evidence also is lending support to its use for students with SD (Flores & Ganz, 2007; Hicks et al., 2011). In these studies, high levels of practice and immediate corrective feedback were presented in a model-lead-test format to

successfully teach literacy skills (e.g., identifying items made of specific materials, prepositions).

There is emerging evidence that supports the use of comprehension strategies based in systematic instruction for students with SD. A modified least-to-most prompting strategy, which includes rereads of text passages in addition to more tradition modeling and verbal prompts, has been used within shared stories to teach students to refer to the text when they do not know the answer to a comprehension question (Browder, Hudson, & Wood, 2013; Hudson & Browder, 2014; Mims et al., 2012). Students with SD also have demonstrated improved correct responding on comprehension questions when they have been taught *wh*-word definitions using time delay (Browder et al., 2013; Hudson & Browder, 2014; Mims et al., 2012). Although Hudson and Browder (2014) presented some inference questions, research on comprehension strategies for students with SD has primarily focused on literal recall (Browder et al., 2006).

Higher-Order Comprehension Strategies in General Education

The National Reading Panel (National Institute of Child Health and Human Development [NICHHD], 2000) identified several effective methods, including cooperative learning, for promoting deeper comprehension of text. Consistent with Vygotsky's socio-cultural learning theory (1978), students are able to learn from each other, and "more knowledgeable" (p. 125, Pittman & Honchell, 2014) peers can serve as models for struggling students. As previously discussed, students refine their understanding of text through discussion (Pittman & Honchell, 2014; Peterson & Taylor, 2012). Educators have capitalized on this enriching characteristic of discussion to deepen students' higher-order comprehension (e.g., inference, application) through literature

discussion groups, or book clubs (e.g., Berne & Clarke, 2008; Ferguson & Kern, 2012; Pitman & Honchell, 2014). Through these discussions, students are able to practice questioning, locating and synthesizing important information, and making connections to themselves and to others (Berne & Clark, 2008; Harvey & Goudvis, 2000; Keene & Zimmerman, 2007).

Research involving literature discussion groups, also called book clubs, has demonstrated improved student comprehension of text and enjoyment of reading (Ferguson & Kern, 2012; Pittman & Honchell, 2014). For example, Ferguson and Kern (2012) reported their results with using literature discussion groups among middle school students in an English language arts (ELA) classroom, placing no more than five students in a group. In this study, group members were assigned specific roles, such as *Discussion Director*, *Connector*, and *Vocabulary Builder*, and each student completed role sheets in preparation for the literature groups. The initial discussion groups did not result in improved comprehension of the text, and most students arrived to the groups unprepared. The researchers revised their approach to include explicit instruction of comprehension strategies into class lessons. They also changed the discussion group roles and corresponding discussion questions to align with a comprehension strategy. For example, because one strategy was to self-question before, during, and after reading, the student assigned to this strategy provided discussion answers based on questions he or she had before, during, and after the assigned reading. As a result of the revised literature discussion groups with comprehension strategies built in, the researchers noted improvement in the quality of the students' written and verbal responses, as well as better preparation ahead of time on the part of all group members. Ferguson and Kern attributed

this change to the necessity of reading the text in order to adequately prepare for the group discussions, as well as the deeper student perspectives that emerged from each comprehension strategy and built on each other to inform and promote further understanding of the text.

Similarly, Pittman and Honchell (2014) examined the effects of literature discussion groups on middle school students' attitudes and comprehension of text. The participants were 16 students who struggled with reading, including six students who were identified with a reading disability. Each participant was placed in a small group with three other students who did not struggle with reading. Using an explicit instructional approach, groups engaged in a guided practice session led by the teacher, followed by independent practice sessions to learn the concepts of discussion within literature discussion groups. In each practice session, students read a story for 10 minutes, then paused to write down reflections on the story. This reflective time was followed by 10 minutes of group discussion. Once practice sessions were concluded, students engaged in discussion of a grade-aligned novel for three weeks. Audio recordings of discussions and writing prompt responses were analyzed, and participants completed a pre- and post-survey about their attitudes toward reading. Results indicated that participants increased in their enjoyment of reading literature, and participants adjusted their understanding of the text through discussion with peers in their group. Although the basic format of discussion groups is similar across studies, variations such as discussion prompts can be included to assist students who may be struggling with discussion and/or comprehension (Berne & Clarke, 2008).

Peer Interactions During Inclusion in General Education Settings

Students with SD also may benefit from literature discussion groups; however, they do not typically have opportunities to interact with peers without disabilities in school. These opportunities often must be orchestrated by the educator or other adult (Carter, Sisco, Chung, & Stanton-Chapman, 2010; Haring & Breen, 1992). By arranging and explicitly teaching students with SD to engage in conversation with peers without disabilities as a targeted intervention, researchers have demonstrated improved social interactions in general education settings. For example, Haring and Breen (1992) recruited four to five peers without disabilities to provide a network of support for two different middle school students with SD. The target students chose the peers based on several possible criteria, including having an expressed interest in meeting the peer and sharing a class or common interest with the peer. Target students and peers were assigned one particular time per day to meet up, but were not restricted on the amount of any additional interactions. Peers were taught to provide prompts for interactions, and they recorded number and quality of interactions during each meeting time. Results indicated a functional relation between peer network supports and overall target student interactions, even in nonstructured meeting contexts.

In a similar study, Carter, Cushing, Clark, and Kennedy (2005) taught six peers without disabilities to support three students with moderate intellectual disabilities and autism by adapting class activities, providing some instruction on IEP goals and behavior support plans, providing frequent feedback, and promoting communication between the target students and other students in the class. The researchers provided peers with two to four days of training as they began to work with target students, and then they continued

with monitoring and feedback as needed. They also trained teachers to coach peers. Overall, results indicated that, when supported by trained peers, target students displayed higher rates of social interaction with other classmates and they experienced more consistent engagement with general curriculum materials.

Though much of the work with peer interactions have primarily targeted non-academic skills, researchers have begun to examine the use of peer supports to facilitate acquisition of academic skills, including comprehension (e.g., Godsey, Schuster, Lingo, Collins, & Kleinert, 2008; Hudson & Browder, 2014; Miracle, Collins, Schuster, & Grisham-Brown, 2001). For instance, Hudson & Browder (2014) taught five elementary-aged peers without disabilities to teach *wh*-word rules and to deliver a least-to-most prompting system to determine the correct answers to comprehension questions, including some higher-order (i.e., making inferences) in the context of a shared story. Results indicated the peers were able to implement the procedure with fidelity, and target students demonstrated increased responding following rereads of selected text. Furthermore, peer ELA GPA was not affected by the time spent during the study.

Studies such as Hudson and Browder (2014) demonstrate the effectiveness of using peer supports to teach literacy skills for students with SD. In contrast, most of these studies have not examined more inclusive methods for supporting these students in discussing literature with peers in order to reach deeper levels of text comprehension. Inclusion of students with SD in general education settings has been associated with benefits such as increased opportunities for social interaction and communication, as well as higher academic expectations (Alquirani & Gut, 2012; Ryndak, Moore, Orlando, & Delano, 2008-2009). Inclusive settings, therefore, provide potentially ideal contexts for

students with SD to develop higher-order comprehension skills, including developing opinions and making meaningful connections to themselves, other people, and other texts (Keene & Zimmerman, 2007), through engaging in discussion of literature with same-aged peers without disabilities.

As students with SD are included in the general curriculum (CCSS, NGA & CCSSO, 2010; IDEA, 2004) and in general education settings, they need to be able to comprehend and discuss academic content in a way that impacts their lives in a meaningful way. It is likely that students with SD will benefit from systematic and explicit instruction, paired with other research-based methods such as read-alouds with adapted text (Hudson & Test, 2011), technology (Spooner et al., 2014, 2015), and systematic (Spooner et al., 2012) and explicit instruction (e.g., Flores & Ganz, 2007; Hicks et al., 2011) to engage in higher level comprehension during book club discussions. By equipping these students with a deeper understanding of content, perhaps they can make more meaningful connections between academic content and their own lives (Browder, Gibbs, et al., 2009; Pennell, 2014), as well as actively engage in conversation with general education peers about the content. The purpose of the present study is to use technology-based shared stories combined with systematic and explicit instruction to support students in participating in discussion groups with peers without disabilities. A secondary purpose is to teach literal as well as higher-order comprehension of content for students with SD.

Significance of the Study

Comprehension. This study may extend the literature on effective methods for teaching comprehension skills, including higher-order comprehension, to students with

SD. With adequate supports, these students may reap the social and academic benefits of participating in book club discussion groups. Consistent with the literature on discussion groups (e.g., Pittman & Honchell, 2014) and socio-cultural learning theory (Vygotsky, 1978), students may learn from their peers through discussion by reevaluating their understanding of the literature and through models of appropriate and on-topic discussion contributions. By making personal connections to text and evaluating the text, these students may experience more meaningful access to literature and other academic content, thereby meeting grade-aligned literacy standards for comprehension. These skills may ultimately improve post-school community, college, and/or career readiness (Appendix A, CCSS, NGA & CCSSO, 2010).

Inclusive practice. This study also may extend the research on peer collaborative groups as an inclusive practice for supporting students with SD (Alquirani & Gut, 2012; Carter et al., 2010) by addressing not only social outcomes but also measureable academic outcomes. The concept of inclusion has evolved from mere placement to the current expectation of quality instruction that reflects and values student differences (Mastropieri & Scruggs, 2007) and "shared educational experiences" (p. 60, Doyle & Giangreco, 2013) between students with and without disabilities. Schools are required to provide students with SD access to, and demonstrate progress in, the general curriculum (IDEA, 2004; NCLB, 2002, 2006). To fully access academics aligned with the general curriculum, some experts argue that students with SD must be included in general education settings with minimal time spent in segregated settings for targeted special education services (Doyle & Giangreco, 2013; Jackson et al., 2008-2009; Ryndak et al., 2014; Ryndak et al., 2008-2009).

Numerous benefits of inclusive education have been reported for students with SD, such as higher expectations (Downing & Peckham-Hardin, 2007), increased academic engagement (Kurth & Mastergeorge, 2012), with some evidence of better academic outcomes in inclusive settings (Dessemontet, Bless, & Morin, 2012) and good use of social, communication, and independent living skills post-school (Ryndak, Ward, Alper, Montgomery, & Storch, 2010). In addition, peers without disabilities have not been adversely affected academically by their participation in inclusive classrooms (Ryndak, 2014; Kurth & Mastergeorge, 2012).

Although students with SD experience greater access to the general curriculum in general education classrooms (Soukup, Wehmeyer, Baskinski, & Bouvaird, 2007), the instructional setting is not sufficient. Several common components have been identified as essential for successful inclusive education programs, including high-quality and evidence-based practices such as systematic and explicit instruction (Alquraini & Gut, 2012; Hudson, Browder, & Wood, 2013). Emerging evidence also supports the use of supports such as assistive technology (e.g., augmentative and alternative communication (AAC), switches, adapted keyboards; Knight, McKissick, & Saunders, 2014; Mechling, 2011) and curricular modifications such as adapted text (Hudson & Test, 2011) and graphic organizers (Knight & Sartini, 2015) when used in combination with high-quality instruction.

By using evidence-based practices to meaningfully include students with SD in literacy-based discussion with same-age peers, these students may experience not only higher academic expectations but also greater academic success in general education settings. Based on this rationale, the research questions for the present study included:

1. What is the effect of using systematic and explicit instruction with a shared story using grade-aligned text, formatted on an iPad2® (pre-instruction) on target participants' ability to answer comprehension questions about the text?

2. What is the effect of pre-instruction on generalization of correct comprehension responding during book club discussions by target participants?

3. What is the effect of pre-instruction on total discussion contributions during book club discussions by target participants?

4. What is the effect of the inclusive book club experience on total discussion contributions made by peers?

5. What are the perceptions of target participants, peers, and educators regarding the intervention?

Delimitations

This study used a multiple probe across participants design (R. D. Horner & Baer, 1978) to examine the effectiveness of pre-instruction, using systematic and explicit instruction, on students' ability to answer comprehension questions about grade-aligned literature, to generalize these responses to a book club setting, and to respond during discussion groups. It is important to delimit the boundaries of this investigation in order to accurately interpret the results and their impact on the field. The use of single-case research limited the generality of the study's findings due to the small number of participants. External validity can be strengthened by future replications of the study. Internal validity was strengthened through careful observance of R. H. Horner et al.

(2005) criteria for high-quality single- case designs. Because participants in this study were high school-aged, generalization of this study's results to other grade levels may be limited. Finally, participants in this study had verbal conversational ability; therefore, generalization to students with impaired communication remains unknown.

Definition of Terms

Book Club/Discussion Groups – Teacher-delegated small groups of students who meet for the purpose of peer-led literature discussion and comprehension (Berne & Clark, 2008; Pittman & Honchell, 2014).

Comprehension – The derivation of meaning from text (National Institute of Child Health and Human Development, Report of the National Reading Panel, 2000; Pearson & Gallagher, 1983).

Listening Comprehension - Meaning that is derived from spoken communication or from text that is read aloud (Browder, Gibbs, et al., 2009).

Higher-Order Comprehension - Deep comprehension of text, beyond literal recall, that reflects critical thinking and application of text to one's self, the world, and other texts (Anderson & Krathwohl, 2001; Keene & Zimmerman, 2007). Higher-order comprehension skills include making inferences and making judgements based on prior knowledge and personal background (Clymer, 1968; L. Wood, Browder, & Mraz, 2014).

Reading Comprehension – Meaning that is constructed from written communication through an interactive exchange of ideas between the text and the interpreter (Harris & Hodges, 1985).

Computer-Based Assistive Technology – The use of technology with a computer platform for the purpose of maintaining or improving a student's independence during, and access to, instruction (IDEA, 2004; Watson & Johnson, 2007).

Constant Time Delay – A response prompting procedure in which the time interval between the natural stimulus and the controlling prompt is systematically increased across sessions from zero seconds to a set interval of time in order to transfer stimulus control to the natural stimulus (Snell & Gast, 1981; Touchette, 1971; Wolery, Holcombe, et al., 1992).

Explicit Instruction - The use of highly structured opportunities for modeled, guided, and independent student practice along with specific and immediate feedback to help the student progress in a skill (Archer & Hughes, 2011; Engelmann & Carnine, 1991).

General Curriculum Access – Provision of general curriculum-based instruction for students with disabilities that is aligned with state academic curriculum content standards (Browder, Hudson, & Wood, 2014; Spooner, McKissick, Hudson, & Browder, 2014).

Inclusive Education – A school-wide practice in which students with disabilities (a) receive education aligned to the general education curriculum, (b) are primarily educated in the general education classroom alongside same-age peers without disabilities, (c) are considered members of the school community, and (d) are provided opportunity and supports for social interaction with peers with a variety of abilities and backgrounds (Artiles, Kozleski, Dorn, & Christensen, 2007; McDonnell & Hunt, 2014).

Literacy – Engaging with text (e.g., reading, writing, speaking, listening) to derive meaning (Keefe & Copeland, 2011; Berkeley, Scruggs, & Mastropieri, 2010; Vacca et al., 2012)

Read-Alouds – The evidence-based practice of reading text aloud, often using adapted versions of the text, using embedded responding opportunities to increase student engagement and comprehension. This practice is also referred to as shared stories or story-based lessons (Browder & Hudson, 2011).

Students with Severe Disabilities – An umbrella term that generally refers to individuals with moderate to severe developmental disability (Browder, Spooner, & Meier, 2011; Handleman, 1986). This term includes individuals who have a moderate or severe intellectual disability (i.e., IQ of 55 or below and significant limitations in adaptive behavior that manifests prior to age 18, American Association on Intellectual Developmental Disabilities, 2010), autism and/or multiple disabilities.

Systematic Instruction – The evidence-based practice of using principles derived from applied behavior analysis to teach socially-relevant skills and using performance data to guide educational decisions (Snell, 1978; Spooner, Knight, Browder, & Smith, 2012).

Task Analysis – A series of discrete steps or skills that are needed to complete a chained response (Collins, 2012; Spooner, 1984).

CHAPTER 2: REVIEW OF LITERATURE

Literacy has been broadly defined as the ability to access and comprehend text (Berkeley et al., 2010; Browder et al., 2009; Vacca et al., 2012). Because literacy skills are needed to access all content areas, there has been a national educational focus on literacy instruction (CCSS, NGA & CCSSO, 2010; National Institute for Literacy, 2001). Federal legislation mandates that students with SD receive instruction aligned with the general curriculum (Individuals with Disabilities Education Improvement Act, IDEA, 2004), and many experts have espoused the benefits of inclusive education in general education settings on behalf of these students (Alquirani & Gut, 2012; Ryndak et al., 2008-2009). Research has indicated a need for specialized instruction (e.g., systematic instruction, Spooner et al., 2012; explicit instruction, Flores & Ganz, 2007) and modifications (e.g., read-alouds, adapted text, technology, Browder, Gibbs, et al., 2009; Hudson & Test, 2011; Spooner et al., 2014, 2015) for students with SD to access and comprehend literature. This chapter will therefore present the literature base for the present study by first providing a review of research on literacy and specifically, comprehension, followed by a discussion of the use of systematic and explicit instruction to teach students with SD, as well as the application of these strategies to promote peer interaction in social and academic contexts. These components were used in the present study to teach students with SD to comprehend text and to promote a deeper understanding of the text through a shared experience of literature with general education

peers within an inclusive book club setting. Figure 1 provides a graphic representation of the logic model for this chapter.

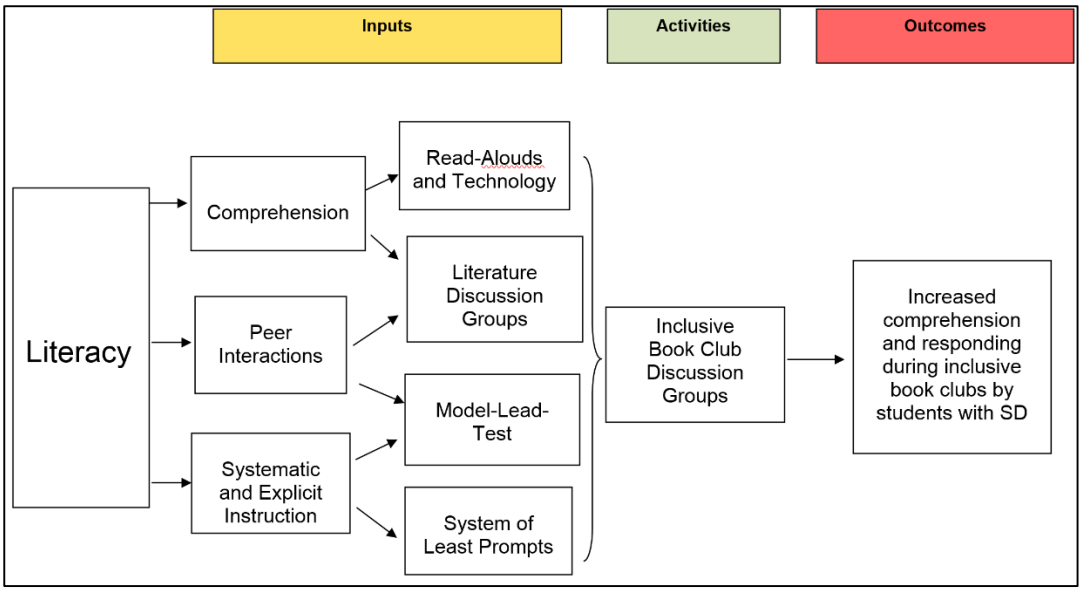

Figure 1: Logic model

Literacy

The current emphasis of literacy in society underscores the importance it carries as a shared experience among all people. People read text in order to comprehend it and to ultimately evaluate its importance on their lives (Keefe & Copeland, 2011; Kliewer, 2008; Pittman & Honchell, 2014). Vygotsky (1978) proposed a sociocultural learning theory in which he asserted that an essential component of learning is social interaction, through which information is then internalized, combined with prior knowledge, and then processed as one's own knowledge. This type of interaction with others, particularly with an adult or "more capable peers" (p. 86, Vygotsky, 1978), can provide an avenue for modeling and collaborative learning. Through such socially-mediated learning, a struggling student begins to reflect on and modify their own thoughts in relation to what

others are saying (Pittman & Honchell, 2014; Vygotsky, 1978). In terms of literacy, comprehension of meaning is refined as text is discussed (Pittman & Honchell, 2014).

Most scholars agree that the primary purpose of literacy is comprehension of text (Berkeley et al., 2010; Keefe & Copeland, 2011; Mastropieri & Scruggs, 1997; Pearson & Gallagher, 1983; Vacca et al., 2012). As posited by Vygotsky (1978) and others (e.g., Harris & Hodges, 1995; Henderson & Buskist, 2011; Pittman & Honchell, 2014; L. Wood, Browder, & Mraz, 2014), higher-level comprehension of text is an active and dynamic process that can take readers beyond a literal understanding of literature to a deeper level of comprehension that impacts their lives (Keefe & Copeland, 2011; Keene & Zimmerman, 2007; Pennell, 2014; Rasinski & Padak, 2008). Through engaging with and asking questions of the text, as well as considering multiple points of view (Henderson & Buskist, 2011), readers can be guided to make connections between the text and themselves, others, other texts, and the world (Harvey & Goudvis, 2000; Keene & Zimmerman, 2007; Rasinski & Padak, 2008). By making text-to-self connections, readers activate prior knowledge as they read the text, and continually adjust their understanding of the text and of themselves. Ultimately, readers should be able to apply meaning to their own lives (Pennell, 2014). Through mutual discussion of the text, readers pose and defend opinions as well as consider other perspectives. This discussion leads to a more complex understanding of literature (Pittman & Honchell, 2014). Taking the concept of comprehension further, readers also can improve comprehension by making connections to other texts (Harvey & Goudvis, 2000; Keene & Zimmerman, 2007). Recurring themes can begin to influence thought and interpretation of newly-read text. Finally, the continual refining of readers' comprehension, readers can make

connections to the world around them. Through activating prior knowledge of current and historical events, readers' interpretation of literature is influenced (L. Wood et al., 2014), and likewise, readers' experience with text can influence their understanding of the world (Harvey & Goudvis, 2000; Keene & Zimmerman, 2007).

Higher-order comprehension, or the ability to make deeper connections with text and apply this understanding (Anderson & Krathwohl, 2001), is an important skill for success in education and beyond. Literacy, and ultimately comprehension of text, is needed to access all educational content areas, and is an essential skill for successfully navigating post-school life including vocation, leisure opportunities, and independent living (Browder, Gibbs, et al., 2009; Keefe & Copeland, 2011). This increased emphasis on teaching higher-order comprehension skills is reflected in Common Core State Standards (NGA & CCSSO, 2010), which include standards on higher-order comprehension across content areas, including the ability to make inferences and formulate opinions about text. Through higher-order comprehension, students begin to link content to their own lives and the world around them, leading to more informed decisions in college, career, and societal living (Lipman, 1998; Pennell, 2014).

Although a traditional view of literacy is accompanied by the assumption that basic reading ability is necessary to access text, many individuals with extensive needs for support are not yet fluent readers (Browder, Gibbs, et al., 2009; Keefe & Copeland, 2011). Based on this traditional view of literacy, students with MSD have been excluded from meaningful literacy instruction. In contrast, Keefe and Copeland (2011) asserted that literacy is a right for everyone regardless of reading ability, as it leads to an increased view of self and the world that translates into power in the form of societal inclusion,

informed decision-making, and ultimately, citizenship. Scholars (Browder, Gibbs, et al., 2009; Keefe & Copeland, 2011; Kliewer, 2008) have recently proposed an expanded view of literacy that includes both traditional (e.g., reading, writing) and nontraditional methods for engaging with text (e.g., digital, audio recordings, adapted text, read-alouds). This more inclusive understanding of literacy is consistent with the pursuit of higher-order comprehension of text that transcends reading ability (Rapp, Van den Broek, McMaster, Kendeou, & Espin, 2007), paving the way for educators to promote the social nature of literacy for all students, including struggling readers and non-readers (Keefe & Copeland, 2011; Kliewer, 2008; Vygotsky, 1978).

Literacy for Students with Severe Disabilities

Despite the increasing educational emphasis on teaching higher-order comprehension skills (CCSS, NGA & CCSSO, 2010), there is little research on teaching these skills to students with SD (Browder et al., 2006). Traditionally, instruction that tangentially taught literacy skills for this population focused on more functional uses of sight words (e.g., Barbetta, Heward, & Bradley, 1993; Moseley, Flynt, & Morton, 1997) or picture/symbol identification (Worrall & Singh, 1983). These early studies rarely taught comprehension. More recently, researchers have found strategies for supporting these students in emergent literacy skills and comprehension that have resulted in improvements in access to and comprehension of literature for students with SD. These strategies include the use of read-alouds (Hudson & Test, 2011) paired with systematic (Browder et al., 2006; Browder, Ahlgrim-Delzell, et al., 2009) and explicit instruction (e.g., Flores & Ganz, 2007) of literacy skills.

The use of read-alouds, or shared story reading, is a practice derived from early childhood literacy instruction (Justice, 2002; Pullen & Justice, 2003) and is designed to expose learners to the conventions of text (e.g., concepts of print, print knowledge, vocabulary acquisition (National Early Literacy Panel [NELP], 2008) and to provide access to literature for nonreaders. Gormley and Ruhl (2005) recommended the use of interactive book reading, using explicit modeling and practice opportunities to discuss aspects of the book, over verbatim reading with no reader/student interaction in order to expose students to rich oral language and vocabulary as well as to provide associations with prior knowledge. This approach encompasses a social interaction that is consistent with Vygotsky's (1978) sociocultural learning theory.

Read-alouds have been used to support students with SD in literacy instruction and is an evidence-based practice with a moderate level of evidence for promoting access to the literature for students with SD who do not read (Hudson & Test, 2011). Educators often use an adapted text to narrow the focus of information, and they embed student engagement and responding opportunities as they read the text aloud (Hudson & Test, 2011) that focus student attention to the conventions of print (e.g., following text left-to-right, turning the page). Some methods of read-alouds also teach students to answer questions about key vocabulary words and details of the story (Browder et al., 2007; Mims et al., 2012).

In an early application of read-alouds to increase access to and comprehension of text for children with developmental disabilities, Skotko, Koppenhaver, and Erickson (2004) taught the mothers of four children with Rett Syndrome who have emerging literacy skills to implement read-alouds. The mothers were instructed to ask their children

to make predictions and inferences about the stories, and they pointed out relationships between story elements and their children's lives. Because the participants had impaired communication, they were each given an augmentative and alternative communication (AAC) device with which to make responses. Results indicated all students improved in their appropriate use of AAC to answer questions and label items from the books. By the last phase of the study, the children's use of AAC also reflected a more conversational interaction with their mothers, supporting the idea of literacy as a shared experience (Pittman & Honchell, 2014) and the social experience of learning (Vygotsky, 1978). Although the participants demonstrated increased engagement and communicative efforts, participants were not explicitly or systematically taught to use their AAC devices to respond or to comprehend elements of the books, resulting in frequently indiscriminate AAC use by the participants with little to no accuracy in comprehension or emergent literacy skill demonstration.

More recently, emergent literacy skills, including vocabulary identification and listening comprehension, have been taught using systematic instruction within read-aloud formats. Systematic instruction, based on the principles of behavior analysis, is the use of prompting and fading of prompts, along with positive reinforcement and clearly-defined behaviors (Snell, 1978), and is an evidence-based practice for teaching academic skills for students with SD (Spooner et al., 2012). For example, in a multiple probe across participants design, Browder et al. (2007) taught three special education teachers to follow the steps of a task analysis to implement read-alouds for six middle school students with SD who were nonreaders. Eight books from the middle school's reading list were selected and adapted using story summaries written at a 2nd to 3rd grade listening

comprehension level and supplemented key vocabulary with pictures. Repeated storylines that represented each chapter's main idea were included for each story. Copies of each book were laminated and placed in 3-ring binders. If needed, students used AAC devices to respond. Steps of the task analysis embedded opportunities for students engagement and responding, including opening the book, turning pages, text pointing from left to right, identifying key vocabulary words, anticipating the repeated storyline, and answering prediction and listening comprehension questions. The teacher's role was to follow these steps while reading the text aloud, and to provide prompting and feedback when necessary. The results indicated a functional relation between the teacher training to a read-aloud task analysis and the accuracy with which they implemented the read-aloud. All teachers were able to implement all steps with fidelity during intervention. All students increased in their independent responding during read-alouds from baseline to intervention. Because teachers implemented the read-alouds in small groups, each student was limited in the number of responses he or she could provide.

To analyze the effects of the read-aloud intervention on student learning, Mucchetti (2013) used a multiple probe across participants design with embedded alternating treatment to examine student responding as the primary dependent variable. As in Browder et al. (2007), Mucchetti trained three special education teachers to implement shared stories in a one-on-one format with four elementary-aged students with SD (i.e., autism and ID). The students demonstrated low expressive language. Similar to Browder et al. (2007), the author embedded responding opportunities related to concepts of print and listening comprehension/vocabulary into the task analysis. Students used picture symbols and objects on a Velcro board to indicate responses. Three grade-

appropriate books were used throughout the study. All of the books were unadapted during baseline; however, during intervention, two of the books were adapted with the addition of simplified text, picture symbols, and objects. The remaining book remained unadapted and served as a continuing baseline measure, alternated with presentation of the adapted books, during intervention. Results indicated that all participants benefitted from the read-aloud intervention, as demonstrated by increases in independent correct responding and engagement on the task analysis from baseline to intervention. Although systematic instruction was used in the intervention, the baseline conditions did not use either systematic instruction or adapted materials; therefore, it is not clear whether the adapted materials alone may have produced the change in student responding.

In a similar study, Browder, Mims, Spooner, Ahlgrim-Delzell, and Lee (2008) used systematic prompting and feedback within a multiple probe across participants design to teach three elementary-aged students with SD and unclear intentionality in responding to engage with grade-appropriate books. Using a similar task analysis to Browder et al. (2007) and Mucchetti (2013), the books also were adapted to further increase engagement by including each student's name and by incorporating surprise elements relevant to the storyline. Objects were used to represent key vocabulary and to provide response options for listening comprehension questions. Results indicated a functional relation between the systematic prompting and student responding, as each student demonstrated immediate growth from baseline to intervention and all maintained high levels of responding for the duration of the intervention.

Mims et al. (2012) extended the read-aloud intervention to middle school students with SD. In a multiple probe across students design, researchers taught four students with

SNN (i.e., autism and severe ID) to respond correctly to listening comprehension questions during read-alouds of grade-aligned biographies. Least to most prompting, with the additions of text rereads and insertion of rules for answering "Wh" questions, was used to teach students to answer questions about the text on each page. A graphic organizer (GO; i.e., diagram for organization of information) was used to organize responses to sequencing questions. Results of this study indicated that all students demonstrated improvement in unprompted correct responses to comprehension questions from baseline to intervention. Three of the four participants were able to generalize skills somewhat to new, untrained biographies.

Although read-alouds are an effective way to provide access to general curriculum literature, only one study has examined the practice in the context of a general curriculum setting. Courtade, Lingo, and Whitney (2013) taught special educators and general education teachers in an elementary school to adapt books and implement a read-aloud within general education reading instruction for students with SD. Using a multiple probe across participants design, Courtade et al. trained three teacher pairs (i.e., one general and one special educator) to adapt grade-aligned books according to a 10-step task analysis and to use a read-aloud task analysis with a system of least prompts to support students during the read-aloud. Results indicated a functional relation between the teacher training and their ability to adapt books and implement read-alouds with fidelity. The teachers quickly met mastery criteria (i.e., 80% independent correct steps for three consecutive days), maintained this performance for the remainder of the intervention, and students demonstrated variable but increased academic engagement from baseline to intervention.

Technology and read-alouds. In considering the use of read-alouds to promote access to text for students with SD who do not read, researchers have begun to streamline the variety of materials (e.g., response boards, GOs) into a computer-based platform (e.g., Coyne et al., 2012; Spooner et al., 2014, 2015). The computer-based format has the advantage of increasing student independence by using features such as text-to-speech, highlighting, and embedded videos and pictures to increase students' access to, and comprehension of, text (Coyne et al., 2012; Spooner et al., 2014, 2015). Through portable technology (e.g., tablets), one can combine a variety of supports into one device and may be less stigmatizing than traditional AAC or tangible adapted books (Douglas et al., 2012; Kagohara et al., 2013). Portable technology has the added benefits of being user-friendly (e.g., touch screen operation) and available for use in any setting (Ayres, Mechling, & Sansosti, 2013; Mechling, 2011).

Examining the use of an iPad to deliver read-alouds, Spooner et al. (2014) used a multiple probe across participants design to teach emergent literacy skills for 3 elementary-aged students with SD. The researchers read aloud a grade-aligned book and followed a task analysis modeled after Browder et al. (2007), including activating a surprise anticipatory set, identifying title and author, turning the pages, text pointing, identifying key vocabulary words, and answering comprehension questions. Each book was repeated for approximately one week (e.g. five school days), after which a new book was introduced. A rotation of 4 books was used throughout intervention. Responding opportunities within the task analysis were embedded into the iPad2® with the exception of turning the page, which was completed in the book itself. All students met the mastery criterion, indicating a functional relation between the intervention and participant

responding on the task analysis. One student received a mass trial training for identifying the title and author, after which he also was able to meet the mastery criterion.

In an extension of the Spooner et al. (2014) study, Spooner et al. (2015) used an iPad2® paired with explicit instruction, including providing examples and nonexamples in a model-lead-test format, to promote generalization of emergent literacy skills and access to grade-aligned literature for five elementary aged students with SD. In a multiple probe across participants design, Spooner et al. (2015) taught specific emergent literacy skills that emphasized awareness of text (i.e., text-pointing, pressing iPad button for repeated storyline, turning page from left to right), book format (i.e., locating the title and author name), and listening comprehension (i.e., identifying correct vocabulary definition, answering listening comprehension questions based on connected text). When students received the explicit instruction, they were provided opportunities to demonstrate the emergent literacy skills in the context of a shared story, also delivered on an iPad2®. The shared story consisted of different chapters of adapted text from a grade-aligned upper elementary novel (i.e., *Charlotte's Web* by E. B. White). The researchers demonstrated a functional relation between the intervention package and student independent correct responses on emergent literacy skills embedded in the shared stories.

The literature on read-alouds demonstrates the practice's effectiveness for promoting access to grade-appropriate text for students who have limited reading ability, even for older students. Read-alouds can be embedded with opportunities to systematically teach foundational literacy skills (e.g., concepts of print) and more in-depth structural elements of text, and may be effective in the context of inclusive settings. The use of portable technology may provide more motivating and socially-acceptable

ways to present text modification and supports through read-alouds. Most studies on read-alouds addressed literal listening comprehension and key vocabulary; however, there has been little to no focus on instructional methods for teaching higher-order comprehension for students with SD.

One study to date, Hudson and Browder (2014), did include some higher-order comprehension measures as a part of an overall read-aloud treatment package. In this study, the researchers used a multiple probe across participants design to teach three elementary-aged students with SD respond correctly to inferential and literal recall *Wh* - comprehension questions (i.e., who, what, when, where) during read-alouds of a grade-aligned novel. Inferential questions asked students to determine an answer from text that did not explicitly state the answer (e.g., "Why did [action from the story]?"). The novel was adapted using simplified text summaries, and the text was enlarged, placed in page protectors and three-ring binders. Different response boards and accompanying picture symbols were also created for each chapter, and these boards were organized by *Wh* - question type. Researchers pretaught rules to *Wh* questions and trained them to request help and to self-monitor using a picture symbol-based checklist. A researcher implemented baseline procedures, and then trained peers without disabilities to deliver the read-alouds and to systematically prompt students when needed. There were three sets of questions per chapter, which were randomly chosen by participants using a game spinner. Prompts did not provide the answers to the questions but instead reminded students to ask for a reread of the text. Results indicated an increase in prompted correct responses for all students and an increase in independent correct responses for one student from baseline to intervention. Two of the three participants also demonstrated

generalization of prompted correct responses and independent correct responses for questions about an untrained book chapter during literacy class.

Another study examined some higher-order comprehension skills as a part of a Direct Instruction program rather than in a read-aloud format. In a single-case multiple probe across behaviors design, Flores and Ganz (2007) examined the effects of a reading comprehension component of the *Corrective Reading* program (Engelmann, Haddox, Hanner, & Osborn, 2002) on comprehension skills in four elementary-aged students with autism and intellectual disability. Using explicit instruction (i.e., modeling, scripts, choral responding), participants were taught to answer inference questions, factually-based questions, and analogies. In this study, inference questions asked students to provide answers when given statements that do not contain the answer (given a statement, e.g., "The noisy car drove past the school," participants answer the question "When did the noisy car drive past the school?"). In factually-based questions, participants determine which fact explained the scenario (given a series of facts, e.g., "Wet floors are slippery," "Driving fast causes accidents," and a scenario, "He slipped in the hallway"). Analogies required participants to complete a statement based on a pattern of relationship for two items (e.g., "A rake is to leaves as a shovel is to what?"). The intervention was implemented in a small group format for 20 min per day for 5 days per week until participants attained the master criterion of three consecutive probes at 100% accuracy for each question type. The intervention lasted approximately 4 to 6 weeks. All participants met the mastery criterion for each type of question, and a functional relation was found between the explicit instruction and participant correct responses. Participants also maintained a high level of correct responding for all question types one month after

instruction was discontinued. Despite these positive outcomes, this study did not address higher-order comprehension of literature.

Overall, literacy instruction research for students with SD has not targeted skills for higher-order comprehension of grade-appropriate literature. Because this is an educational goal for all students (e.g., CCSS, NGA, & CCSSO, 2010), and because these skills can lead to a higher quality of life (Lipman, 1998; Pennell, 2014), further investigation is warranted for strategies to teach higher-order comprehension for students with SD.

Higher-Order Comprehension Strategies in General Education

Several approaches are currently used in general education to address higher-order comprehension, which may be applicable to teaching students with SD. The National Reading Panel (NICHHD, 2000) recommends discussion as a practice for teaching deeper levels of comprehension as a part of a multi-strategy approach for active reading and interpretation of text. Comprehension involves the interaction of a person's background knowledge with the text while using strategies for problem-solving (NICHHD, 2000; Rapp et al., 2007). Students who have limited background knowledge or ability to apply comprehension strategies often struggle with comprehension. Consistent with Vygotsky's sociocultural learning theory (1978), struggling learners can improve their background knowledge and use of comprehension strategies when they interact with students who are more proficient readers (Henderson & Buskist, 2011; Pittman & Honchell, 2014).

One way teachers and researchers have addressed this need is through the use of literature discussion groups, or book clubs. Literature discussion groups (LDGs) are

student-led small groups, often using popular literature to promote interest, for the purpose of co-constructing text meaning and for identifying and practicing comprehension strategies (Berne & Clark, 2008; Pennell, 2014). Although the responsibility for discussion is on students, teachers typically model and guide the process (Berne & Clark, 2008; Ferguson & Kern, 2012; Henderson & Buskist, 2011). The term *book club* is often used interchangeably with LDGs but tends to evoke more of the enjoyment and social connotations of reading (Berkeley, 2007; Raphael, Florio-Ruane, & George, 2004). Both formats are characterized by student-led discussions, which tend to have more personal meaning and encourage students to develop their own ideas, thereby increasing student ownership of the task (Berne & Clark, 2006; Ferguson & Kern, 2012). The benefits of LDGs and book clubs include increased engagement in and enjoyment of literature, improved oral language development and confidence in talking about text, and ultimately, deeper critical thinking and comprehension (Berne & Clark, 2008; Ferguson & Kern, 2012; Pittman & Honchell, 2014).

Several studies have been conducted to evaluate and describe student-led LDGs. Berne & Clark (2006) examined the use of comprehension strategies within LDGs. In a qualitative design, the researcher recorded, transcribed, and coded the proceedings of LDGs in a ninth grade general education literature class. A total of 29 students participated, with four to five students per group. Students were grouped heterogeneously by reading ability and gender. Though there were six LDGs, only four groups were used in the analysis because recordings for two of the groups were inaudible. Through repeated readings of the transcripts, the researchers identified and categorized comprehension strategies, including: (a) comparing/contrasting, (b) contextualizing, (c)

questioning, (d) searching for meaning, (e) interpreting, (f) engaging in retrospection, (g) summarizing, (h) stating a confusion, (i) noting author's craft (i.e., discussing the author's intentions), and (j) inserting oneself in the text. A majority of the discussion (47% to 71% across groups) was related to comprehension strategy. In addition to using comprehension strategies, the students engaged in discussion that was explicitly stated in the text, as well as discussion that was implied or inferred from the text. Because the researchers did not set any parameters for the LDGs, the students were not using the comprehension strategies intentionally or collaboratively, discussion moved quickly from one topic to another without delving deeper into the each other's ideas, and at least one group member per group did not contribute substantially to the discussion. The researchers concluded that, for LDGs to be most effective, students should be explicitly taught comprehension strategies and ways to use them collaboratively to create meaning from the text. Additionally, students need to be taught how to actively listen and respond to each other, and they need to be held accountable for contributing to the group's collective conversation.

Consistent with conclusions posited by Berne and Clark (2006), Ferguson and Kern (2012) qualitatively described the use of explicit comprehension strategy instruction to improve student participation and comprehension in LDGs. One of the author's, also a middle school ELA teacher, assigned student roles that were directly related to seven common comprehension strategies (i.e., activating background knowledge and/or making connections, self-questioning, making inferences, determining important information, employing fix-up strategies, visualizing, and synthesizing and extending thinking). The LDG roles were Sensory Image Maker, Inference Maker, Questioner, Connector, and

Importance Determiner/Synthesizer. The teacher used modeling, guided practice, and think-alouds (i.e., out-loud demonstrations of the thought processes involved in a task) to teach comprehension strategy use. Students were placed in small groups of three to five students each according to book interest, interaction styles, and learning needs. Each student took turns fulfilling a LDG role. Prior to discussion group meetings, each student read the assigned book individually and answered reading prompts designed specifically for his or her respective LDG role. Students then came together in the LDG to talk about the book. Compared to the teacher's observations of LDGs before adding the explicit comprehension strategy instruction and corresponding group roles, students came to the LDGs more prepared, were more engaged in group discussions, and they were able to contribute discussion ideas using examples from the book to support their responses.

To assess the effectiveness of LDGs on struggling readers, Pittman and Honchell (2014) observed and guided 45 middle school students in two English language arts classes. Using a qualitative research design, the researchers, who were also the class teachers, assigned students into small LDGs (four to five students per group) with the intention of including a diverse range of reading and social abilities. Data collection focused on the 16 group members who were struggling readers. The researchers used student input to establish protocols for behavior and discussion topics and then provided three days of guided practice and two days of independent practice in LDGs. Students individually read the assigned novel and used small booklets in which they wrote down thoughts and any questions they had. Groups then used the previously-developed discussion protocols to discuss the text. One group asked the researchers to read the book aloud to them due to difficulty in reading, which resulted in limited time to discuss the book. Students

completed a feedback survey at the end of the study. Using data from the surveys, student booklets, and audio recordings of conversations, the researchers identified several themes: (a) Students enjoyed reading more in LDGs, (b) students felt they gained more understanding about the novels through discussing them with their peers, (c) students benefitted from working together to make connections to prior knowledge and to discover new meaning.

Book Clubs for Students with Disabilities

Only one study to date examined the use of book club discussion groups for students with disabilities. Goatley and Raphael (1992) used a qualitative design to implement a book club for four elementary-aged students, three with learning disabilities and one with a label of *Educable Mental Impairment*, in a resource room setting. Meeting twice per week for four months, the book club consisted of the four participants and one of the researchers. The researchers used elements of the Book Club reading program (a part of a local university's Early Literacy Project), which included reading literature, writing in logbooks and mapping out story elements, student-led discussion group, and whole-class teacher-led discussion. During Phase 1, the teacher provided explicit instruction on content and discussion strategies and initially guided the book club; however, students were gradually given more responsibility for leading the discussions as the study progressed. During the second phase of the study, the participants observed and asked questions of fifth grade general education peers who also were participating in the Book Club reading program in their general education classes. Data were collected from pre-intervention and intervention observations, recordings of book club discussions, student interviews, and a pre-post measure of participants' use of the text to formulate

opinions about the text. Pre-test measures revealed that students could use the text and their written responses to share ideas in the book club, but they needed specific instruction to use the literature to support their responses, as well as how to interact with and respond to other group members. During Phase 1, participants improved in their ability to interact with each other to answer questions and to support their responses with examples from the text, but they did not include all members in discussions and they provided primarily literal text references. During Phase 2 (i.e., observing and questioning general education peers in book club discussions), participants began to include all members of the group in a conversational-style discussion, and they were able to relate the text to personal experiences. The results of this study indicate that students with disabilities can benefit from a book club structure to expand their ability to discuss and glean deeper meaning from text. Outcomes also indicate that general education peers can serve as a model for appropriate book club discussion.

Overall, the research on LDGs found that struggling readers exhibited more enjoyment of reading and more confidence in their comprehension of the texts through discussion with their peers. Limited evidence also exists for the use of discussion groups to promote conversation and personal connection with text for students with SD.

Summary of the Current Research on Literacy

Given the importance of literacy and especially comprehension of text in education and post-educational life, there has been an increased focus on identifying the most effective ways to teach these skills (e.g., Berkeley et al., 2010; Browder, Gibbs, et al., 2009; NICHHD, 2000; Vacca et al., 2012). Though many students with SD have

limited reading ability, they are able to access and engage with grade-appropriate text through the use of read-alouds (Hudson & Test, 2011).

Despite some focus on comprehension through read-alouds for this population, there is little research examining strategies for teaching higher-order comprehension. This deeper, more personal understanding of text is important for making connections with the world and with other individuals (Pennell, 2014; Keene & Zimmerman, 2007) and can be achieved through discussion of literature paired with explicit instruction of comprehension strategies (e.g., Berne & Clark, 2006; Pittman & Honchell, 2014). This social exchange of knowledge and perspective (Vygotsky, 1978), particularly between struggling and proficient readers, has been effectively channeled into LDGs (Berne & Clark, 2008; Ferguson & Kern, 2012; Pittman & Honchell, 2014).

Although LDGs have been beneficial for teaching higher-order comprehension to students in general education, and to a limited extent, students with disabilities (Goatley & Raphael; 1992), no studies have examined the use of student-led discussion of literature with students with SD and their general education peers. The practice, in combination with the use of read-alouds, holds potential for promoting higher-level comprehension for this population; however, students with SD may need additional support to learn these skills. The evidence base for teaching students with SD indicates systematic and explicit instruction may provide the support needed for teaching higher-order comprehension (Browder et al., 2006; Spooner et al., 2012).

Systematic and Explicit Instruction

Systematic (Collins, 2012; Snell, 1978) and explicit instruction (Archer & Hughes, 2011; Engelmann & Carnine, 1991; Rupley et al., 2015) have been used

effectively to teach students with SD. Stemming from principles of behavior analysis, systematic and explicit instruction both involve the teaching of clearly-defined, socially-relevant target behaviors for which instructional decisions are made based on the collection and analysis of performance data (Cooper, Heron, & Heward, 2007). The National Reading Panel (NICHHD, 2000) recommends the use of systematic and explicit instruction for teaching literacy for all students, including those who struggle with reading.

Systematic Instruction

Systematic instruction is a set of teaching procedures based on behavioral principles (Collins, 2012; Spooner & Browder, 2015). First extending the principles of behavior to a human participant, Fuller (1949) taught a teenage boy with extremely limited movement and little to no communication skills to raise his arm. Fuller used differential reinforcement, likely with successive approximations, to transfer stimulus control from prompts provided by the researcher to the natural cue (i.e., instructive statement to raise his arm). From this point, applied behavior analysts used principles of learning to teach individuals with disabilities to carry out a variety of functional skills (e.g., toothbrushing, R. D. Horner & Keilitz, 1975; dressing, Azrin, Schaeffer, & Wesolowski, 1976; washing clothes, Cuvo, Jacobi, & Sipko, 1981).

Snell (1978) used the term *systematic instruction* to refer to the use of techniques such as systematic prompting and fading, reinforcement, and error correction to teach students with disabilities to perform a skill independently. Response prompts are effective and efficient systematic instructional procedures that are used to elicit and teach a response and are then are faded in order to transfer stimulus control to the naturally-

occurring cue (Ault, Wolery, Doyle, & Gast, 1989). Response prompting systems are used to teach discrete or chained (i.e., multi-step) tasks. Chained tasks are analyzed and broken down into specific steps, called a task analysis, representing the sequence of behaviors needed to complete the task (Collins, 2012; Spooner, 1984). Initially used primarily for teaching functional skills, systematic instruction also is an evidence-based practice for teaching academics (Spooner et al., 2012). The effectiveness of systematic instruction has served as the major avenue for promoting academic learning for students with SD (Spooner & Browder, 2015).

Several literature reviews have determined that systematic instruction is an evidence-based practice for teaching academics for students with SD. These reviews applied the R. H. Horner et al. (2005) criteria for single-case design, including quality indicators for the design and quantity and dispersion requirements (i.e., a minimum of five high-quality studies with at least 20 participants across the studies, conducted by at least three different researchers and across three different geographical locations) and/or the Gersten et al. (2005) criteria for group designs. In a review of the literature on systematic instructional techniques used to teach academic skills for students with SD, Spooner et al. (2012) looked specifically at the use of task analytic instruction with systematic prompting and feedback, teaching discrete responses, and using time delay to teach academic responses. Examining 18 studies, results indicated that task analytic instruction and instruction of discrete responses met the criteria for an evidence-based practice across math, science, and literacy. The authors also found strong evidence for using time delay to teach discrete and chained responses, though most studies used time delay as a part of an overall treatment package. Although a component analysis is needed

to determine the precise impact of time delay on academic responding, the studies indicated that response prompting systems are effective when accompanied by other systematic elements including reinforcement and error correction.

Investigating the evidence base for effective instructional strategies for teaching literacy skills, Browder et al. (2006) conducted a comprehensive review of studies that promoted literacy learning for students with SD. In their analysis of 128 experiments within 119 articles, the authors found that systematic prompting is effective for teaching discrete literacy skills, primarily sight words and picture/symbol identification. Extending this review, Browder, Ahlgrim-Delzell, et al. (2009) examined the literature specifically for the use of time delay to teach literacy skills (i.e., picture and word recognition) for students with SD. Examining a total of 30 experiments from 29 articles, results indicated there is sufficient evidence for the use of time delay (both constant and progressive) to teach sight word recognition and limited evidence for the use of time delay to teach picture recognition.

Overall, the research on systematic instruction indicates it is an essential component for teaching academics, including literacy, for students with SD. The following section will discuss the use of systematic instruction in combination with read-alouds to teach literacy skills, including comprehension.

Systematic instruction to teach literacy skills during read-alouds. As previously noted, the use of read-alouds for teaching emergent literacy skills is an evidence-based practice when paired with systematic instruction (Hudson & Test, 2011). Read-alouds have effectively incorporated task analyses to teach embedded engagement and skill-demonstration opportunities, and each step is taught using response prompting

such as time delay or least-to-most prompting. Time delay is in which the instructor varies the time interval between the natural stimulus and delivery of the response prompt to promote near errorless learning (Snell & Gast, 1981; Touchette, 1971; Wolery, Holcombe, et al., 1992). Constant time delay involves the use of a 0s delay interval, in which the correct response is modeled immediately during or after the natural stimulus is presented, followed by another specified time interval (e.g., 4s; the correct response is modeled 4s after presentation of the natural stimulus). In contrast, progressive time delay involves the use of a 0s delay followed by a progressively longer delay (e.g., 2s, then 4s).

Listening comprehension also has been taught systematically, using a modified system of least prompts (e.g., Browder et al., 2013; Hudson & Browder, 2014; Mims et al., 2012). In a traditional system of least prompts (Wolery, Ault, & Doyle, 1992), a hierarchy of prompting is used, beginning with the least intrusive prompt (e.g., a verbal prompt) and moving to more intrusive prompting as needed (e.g., model and then physical prompt). In the modified system of least prompts, the least intrusive prompt is a re-read of a portion of the text and/or reminders of rules for answering questions, followed by more typical prompts such as a model or physical prompt.

As previously discussed, several studies have paired read-alouds with systematic instruction to teach emergent literacy skills for students with SD (Browder et al., 2007, 2008; Mucchetti, 2013). In these studies, systematic prompting systems were used to teach discrete emergent literacy skills formatted into a task analysis. Not only were students able to learn the skills, but teachers were able to use the task analysis with high procedural fidelity (Browder et al., 2007).

Other studies have used the modified system of least prompts to focus on comprehension of text. Mims et al. (2012) used a read-aloud format with biographies to promote text-dependent listening comprehension. Throughout each story, the experimenter posed a question to the student. Waiting 4s between prompts, the experimenter began using the modified system of least prompts if the student provided an incorrect response or no response. The first prompt was a statement of the "Wh" question that was being asked while also pointing to the corresponding rule on a T-chart (e.g., "When you hear *who*, listen for a person's name). The paragraph containing the answer was then reread. If needed, the second prompt was a reread of the sentence containing the answer with a model of the correct answer (e.g., pointing to the correct answer on the response board), followed by rereading the question and waiting for the student's response. The third and final prompt was a model prompt and a verbal instruction for the student also to point to the answer. The authors also measured generalization to new, untrained biographies. All students demonstrated a functional relation between the intervention and independent correct responses.

Similarly, Hudson and Browder (2014) used a modified system of least prompts to teach listening comprehension of a grade-aligned novel during a read-aloud. This study, however, used general education peers to implement the systematic instruction during intervention. Prior to the intervention, the participants were systematically pre-taught the rules for answering "Wh" questions using examples and non-examples (e.g., "Who tells about a person. This is a person, this is not a person."). The modified system of least prompts varied slightly to that from Mims et al. (2012). In this study, the first prompt was a statement of the type of "Wh" question and the corresponding rule, along

with a reread of the paragraph that contained the answer. Instead of referring participants to a T-chart (as in Mims et al., 2012), they were provided with a response board for each "Wh"-type question with corresponding response options from the book. The second prompt was a reread of the sentence containing the answer. In the third prompt, the peer stated the correct answer. In a fourth prompt, the peer said the correct answer while pointing to the answer on the response board. Error correction consisted of reminding the student to ask for help, along with saying and pointing to the correct answer. Because the first two prompts in this study did not reveal the answer to the question, the authors measured prompted correct responses (i.e., correct answer following the first or second prompt) as the primary dependent variable. With the support provided through the modified system of least prompts, the participants were able to demonstrate growth from baseline to intervention on the number of correct responses provided for listening comprehension questions.

The use of systematic instruction to teach students with SD has a solid research foundation. This evidence has recently been extended to academics, including literacy (Browder, Ahlgrim-Delzell, et al., 2009; Browder et al., 2006). Although the use of read-alouds to promote access to general curriculum content and to teach literacy skills, including comprehension, is an evidence-based practice when working with students with SD (Hudson & Test, 2011), the overwhelming majority of studies on read-alouds incorporated systematic instruction to teach skills. Based on this evidence base, systematic instruction should be used to adequately support students with SD in learning comprehension and other literacy skills.

Explicit Instruction

Similar to systematic instruction, there is emerging evidence that students with SD may be more successful in learning new skills when they are provided with explicit instruction. Explicit instruction, an instructional approach prevalent in research for teaching students with minimal support needs, has been defined as the use of highly structured opportunities for guided and supported student practice along with specific and immediate feedback to help the student progress in a skill (Blair, Rupley, & Nichols, 2007; Nelson-Walker et al., 2013; Rosenshine, 1995). Explicit instruction also has been referred to in the literature and in practice as *direct instruction* because of the clear, efficient, and controlled nature of its instruction, particularly through the use of scripts to guide teachers in implementing the program consistently and accurately for all students (Engelmann, Becker, Carnine, & Gersten, 1988; Engelmann & Carnine, 1991). This type of instruction also is characterized by intensive, frequent instructional time, often delivered in small groups, and it capitalizes on the behavioral principles of reinforcement and corrective feedback to promote active, efficient learning (Engelmann et al., 1988; Rupley et al., 2015).

Explicit or direct instruction often is presented in a model-lead-test format (Engelmann & Carnine, 1991), which describes three phases of instruction, including modeling, guided practice, and independent practice (Goeke, 2009; Rupley et al., 2015). Modeling is teacher demonstration of the target skill in a way that clearly shows students how to apply what they are learning. Modeling also may include an out-loud demonstration, sometimes called a *think-aloud,* of the cognitive process needed to accomplish the task (Goeke, 2009). For example, in teaching comprehension, the teacher

would model not only the correct answer but also would talk through the steps for deducing the answer. After the task expectations are modeled, the teacher provides guided practice, in which students practice the skill and the teacher guides the students with corrective feedback. Using the same comprehension example, the student would be given a new question; the teacher would guide the student as needed as the student practices using comprehension strategies and would provide affirmation (e.g., "That's right.") or corrective feedback (e.g., "This answer is *Charlotte*. Point to *Charlotte.*"). Finally, as students become more proficient with the skill, they are given the opportunity for independent practice that requires minimal teacher's support. In a literacy lesson, students would be expected to answer multiple comprehension questions with little to no teacher interaction. During independent practice, teachers also may provide opportunities for students to apply their knowledge to different contexts and scenarios (Goeke, 2009). Student performance on independent practice opportunities provides teachers with an understanding of what the student knows and what, if any, further instruction is needed. Throughout the model-lead-test process, students are given numerous practice opportunities, and teacher support is gradually faded as students begin to independently demonstrate and generalize the skill (Goeke, 2009).

In the following sections, research for using explicit instruction to teach literacy skills, and particularly comprehension, for beginning and/or struggling readers will be discussed. Next, studies that have applied explicit instructional strategies to literacy instruction for students with SD will be reviewed.

Explicit instruction and literacy for struggling readers. Given the importance of literacy skills across content areas, much research has been conducted to examine

strategies for best promoting these skills for all students. Explicit instruction is recommended as an effective way to teach literacy skills for all beginning readers, including students with reading difficulties and those at risk for developing disabilities in reading (National Reading Panel, NICHHD, 2000; Snow, Burns, & Griffin, 1998). Based on the more recent evidence incorporating explicit instruction into literacy programs, the Institute of Education Sciences (IES) promotes explicit instruction as an evidence-based practice with a strong level of evidence for supporting struggling readers (Gersten et al., 2009).

Research clearly supports the use of explicit instruction, including modeling, guidance, and opportunities for student practice across all five areas of literacy, and specifically for comprehension. Denton, Fletcher, Taylor, Barth, and Vaughn (2014) applied explicit instruction to a comprehensive reading approach with resulting improvement for teaching a combination of reading skills. In a study comparing explicit instruction (EX) with guided reading (GR) and traditional instruction to teach first graders at risk for reading failure, Denton et al. used scripts, repeated reading opportunities, teacher modeling of skills, and corrective feedback. Explicit comprehension procedures included teacher-provided think-alouds of comprehension strategies such as activating background knowledge and self-monitoring misunderstandings. Students in the EX and GR groups received the instruction four times per week in 45min sessions. Denton et al. found the EX group outperformed the GR and traditional instruction groups in word identification, decoding, and one measure of comprehension; furthermore, the EX group demonstrated faster growth in decoding, fluency, and reading comprehension over the guided reading group.

Looking specifically at comprehension, Cuillo, Falcomata, and Vaughn (2015) taught seven upper-elementary students with an identified learning disability in reading to comprehend informational text. Using a single-case multiple probe across participants design, teachers discussed each item of a graphic organizer with students (i.e., a diagram that organized big ideas, people, vocabulary, and events from the text) and engaged them in guided and independent practice of answering literal, inferential, and evaluative (i.e., opinion with supporting detail from the text) comprehension questions. At the end of each session, students were given a comprehension quiz. Results indicated a functional relation between the intervention and students' correct responding on comprehension questions.

Much of the research on LDGs used explicit instruction to teach students to use comprehension strategies as well as to appropriately engage in discussion about text with their peers. Pittman and Honchell (2014) pretaught students, using three days of guided and one day of independent practice, to write down thoughts and to discuss these thoughts using appropriate conversational behavior in the context of LDGs. Similarly, Berne and Clark (2006) modeled the process of LDGs, giving examples of appropriate questions and comments to contribute and roleplaying examples and nonexamples of productive conversations, followed by a discussion with students of what they saw. Though students in both studies (Berne & Clark, 2006; Pittman & Honchell, 2014) were able to successfully engage in student-led discussion about the text, linking the content to prior knowledge and inferring meaning. Berne and Clark noted that students may have exhibited even deeper, co-constructed comprehension of the text if they had been explicitly taught comprehension strategies.

Focusing on comprehension strategies, Ferguson and Kern (2012) used a think-aloud approach to explicitly link student roles in the LDGs to specific comprehension strategies. The authors accomplished this by discussing the purpose of the roles and by providing them with guiding questions to answer as they read the text. Goatley and Raphael (1992) also used explicit instruction, in the form of modeling of appropriate conversational behavior and instruction on analyzing the text (e.g., story-mapping, sequencing, making predictions) to teach students with mild disabilities to engage in peer-led discussion of text during book clubs. Overall, these studies indicate explicit instruction of the process for engaging in book clubs, and especially for comprehension strategies, have led to improved higher-order comprehension for struggling readers.

Although interventions such as comprehension strategies and student-led literature discussion can be useful tools for supplementing literacy instruction, many at-risk or struggling readers do not make gains in reading skills with the use of these supports alone (e.g., Berne & Clark, 2006; Cuillo et al., 2015; Denton et al., 2014). Research suggests the addition of explicit instruction can considerably boost student performance across all areas of literacy for at-risk and struggling readers (Cuillo et al., 2015, Denton et al., 2014).

Explicit instruction for students with SD. Although the use of explicit instruction has been demonstrated as an evidence-based practice for supporting beginning and struggling readers (Gersten et al., 2009), many students with SD are emerging readers who need significant instructional supports in order to access content and acquire literacy skills. Emerging evidence indicates explicit instruction may be effective for not only providing a way for students with SD to access grade-aligned academic content but

also allowing them to engage with, comprehend, and demonstrate skill acquisition and generalization of literacy skills (e.g., Flores & Ganz, 2007; Ganz & Flores, 2009; Hicks et al., 2011; Knight, Smith, Spooner, & Browder, 2012).

Ganz and Flores (2009) used explicit instruction to improve the acquisition of language skills for students with SD. Using a single-case changing criterion design, the authors examined the effectiveness of the Direct Instruction program *Language for Learning* (Engelmann & Osborn, 1999) on the oral language skills of three elementary students with autism spectrum disorder (ASD). Instruction occurred in small groups for 20 min per day, 3-4 days per week for approximately 3 months. Ganz and Flores described Direct Instruction (DI) as a curricular approach that incorporates explicit instruction throughout each program using model-lead-test, immediate corrective feedback, and repeated practice. *Language for Learning* also provided scripts to explicitly prescribe teacher behaviors. In their study, the authors measured student oral language performance through their ability to correctly name two items that are made from the material presented in each lesson (e.g., wood, paper). Results indicated a functional relation between the Direct Instruction program and student gains on oral language measures for all students.

In another examination of explicit instruction to teach literacy skills, Hicks et al. (2011) explicitly taught two students with multiple disabilities to correctly identify prepositions. Using a multiple probe across behaviors design with concurrent replication across participants, the authors presented examples and nonexamples of preposition (e.g., on, under) in a model-lead-test format. The authors modeled examples and nonexamples of prepositions by varying the position of items on/under a box. Across four phases, they

used a wider variety of example objects and positioned them increasingly further from the box in order to refine the students' concept formation of each preposition. Through explicit instruction of multiple examples and nonexamples with model-lead-test delivery, students learned the targeted prepositions as demonstrated through a functional relation between the explicit instruction and prepositions the students identified. These skills also generalized to new, real-world settings (i.e., use of prepositions to describe objects placed in a library). Although the intervention was presented in a one-to-one format, the authors suggested future research investigates the efficacy of the procedure in a group format.

Extending literacy skill instruction to other content areas, Schenning, Knight, and Spooner (2013) used explicit instruction and a graphic organizer to teach comprehension of social studies content for three middle school students with autism and intellectual disability. The researchers presented students with adapted text from typical middle school social studies lessons. Students were explicitly taught through a model-lead-test format to complete a graphic organizer that followed an inquiry process for analyzing text. Using a multiple probe across participants design, comprehension questions were provided to lead students through this inquiry process. Results indicated that the graphic organizer alone did not result in increases in students' correct responding to comprehension questions, and once explicit instruction was conducted, students showed improvement in their correct responses. The results of this study indicate a functional relation between the explicit instruction and student comprehension of social studies content.

Knight and colleagues (2012, 2013) examined the effectiveness of explicit instruction paired with graphic organizers to teach literacy skills in the context of science.

Using a multiple probe across behaviors with concurrent replication across participants design, Knight, Smith, et al. (2012) used examples and nonexamples of objects to teach science descriptors (e.g., heavy, light, hot, cold) to three elementary-aged students with autism. General education peers assisted participants as needed during science inquiry experiments, which measured generalization of skills, by providing physical support or assistance to help participants in completing the prediction and confirmation statements in the inquiry assignments. All participants made gains once explicit instruction was employed to teach the science descriptors and graphic organizer use, indicating a functional relation between the explicit instruction and students' correct responses. Similarly, Knight, Spooner, Browder, Smith, and Wood (2013) used explicit and systematic instruction in combination with graphic organizers to teach acquisition of science vocabulary for three middle school students with ASD. The researchers used examples and nonexamples, constant time delay, and a task analysis in a model-lead-test format to teach the components of a science concept (i.e., convection) and to use a graphic organizer to demonstrate understanding of how each component fits into the overall concept. These authors found a functional relation between the explicit and systematic instruction and student performance on the task analysis. Additionally, students' independent application of vocabulary terms to the graphic organizer indicated their increased comprehension of the overall science concept (i.e., *convection*). The authors noted that graphic organizers would need to be used in combination with explicit and/or systematic instructional procedures to improve skills for most participants.

Despite emerging evidence supporting the use of explicit instruction to teach literacy skills, less is known about its effectiveness for teaching higher-level

comprehension skills. Even though some experts recommend a more relaxed, less explicit approach to teaching this type of higher level cognitive processing skills for most students (Blair et al., 2007; Rupley et al., 2015); the literature supports the continued use of highly structured explicit instruction wherever possible to best promote academic success for students with LID (e.g., Ganz & Flores, 2009; Hicks et al., 2011; Schenning et al., 2013). Based on the recommended instruction for teaching students with LID, it would seem logical to incorporate explicit instruction in teaching these students higher level comprehension strategies that extend beyond literal recall. To attain a deeper understanding of these facts, students would need to acquire skills such as interpreting, comparing, and inferring (Bloom's Revised Taxonomy, Anderson & Krathwohl, 2001).

Only one study to date has used explicit instruction to teach higher level comprehension strategies for answering inference questions and completing analogies for students with SD. As a part of the Direct Instruction program *Corrective Reading*, Flores and Ganz (2007) used explicit instruction to answer some higher order comprehension questions. The explicit instruction included following a script, modeling, choral student responding using a signal to elicit student responding, and correction procedures. All participants met the mastery criterion for each type of question, and a functional relation was found between the explicit instruction and participant correct responses. Participants also maintained a high level of correct responding for all question types one month after instruction was discontinued.

Emerging evidence exists for the use of explicit instruction to teach skills, including literacy and comprehension, for students with SD. Though most of these studies focused on literal comprehension, one study (Flores & Ganz, 2007) successfully

taught students to demonstrate higher-order comprehension. Flores and Ganz, however, did not teach students to demonstrate these skills in the context of literature. Furthermore, none of these studies examined the use of student-led discussions with peers without disabilities to promote a deeper level of comprehension.

Summary of the Literature on Systematic and Explicit Instruction to Teach Literacy Skills

Systematic and explicit instruction both have a considerable evidence base for teaching literacy skills to students who are at risk for reading difficulties, and systematic instruction is an evidence-based practice for teaching academics to students with SD (Spooner et al., 2012). Support for the use of explicit instruction to teach students with SD is also growing. Even though strategies and supports such as read-alouds and LDGs are useful for delivering instruction aligned with the general curriculum for these students, systematic (Hudson & Test, 2011) and explicit instruction (e.g., Flores & Ganz, 2007; Hicks et al., 2011) provide the impetus for true change in student performance on literacy skill measures. Although students also improved in their ability to correctly answer literal comprehension questions (e.g., Browder et al., 2007; Mims et al., 2012; Schenning et al., 2013) and some isolated higher-order questions (Flores & Ganz, 2007; Hudson & Browder, 2014) through the support of systematic and explicit instruction, the studies examined above did not address discussion of text to promote higher-level comprehension that students will need to more fully progress in the general curriculum and to meet expectations for CCSS (NGA & CCSSO, 2010) and other rigorous state standards. More research is needed on strategies to promote higher level comprehension skills for students with SD. Based on the existing research, systematic and explicit

instruction may hold promise as effective strategies for teaching these more complex cognitive skills.

Peer Interactions

Though evidence can be found on the use of effective strategies (e.g., systematic [Browder et al., 2006; Spooner et al., 2012] and explicit instruction [Flores & Ganz, 2007; Hicks et al., 2011], read-alouds [Hudson & Test, 2011]) for teaching comprehension of literature for students with SD, no studies to date have examined the extent to which literature discussions with peers without disabilities will promote higher-order comprehension. In addition, peer interaction in high school settings in particular becomes particularly important for participating academically and socially; however, there is limited research on interactions between peers with and without SD at the high school level (Carter et al., 2010; Hughes et al., 2012). Because students with SD may not have many opportunities to engage with peers without disabilities, these opportunities often must be facilitated and supported by the educator or other adult (Carter et al., 2010; Haring & Breen, 1992; Rossetti, 2012). In fact, the use of peers to support learning for students with SD has been identified in the literature as a necessary component for inclusion in the general education curriculum and setting (Alquraini & Gut, 2012).

Peer interactions between students with and without SD have been strategically arranged and facilitated by a researcher, teacher, or other adult; these arrangements are often called peer supports (Carter et al., 2005; Haring & Breen, 1992). In peer support interventions, peers without disabilities are typically trained to facilitate social interaction with students with SD using systematic and/or explicit instruction (e.g., response prompting, cueing, reinforcement through social praise; Carter et al., 2010). In contrast,

peer tutoring interventions are more specific types of peer supports focusing on the use of peers without disabilities to implement instructional strategies with students with SD for the purposes of teaching an academic skill. In both cases, students with SD have demonstrated the targeted learning outcomes and were able to learn from their peers, and the peers without disabilities expressed increased expectations for students with SD and were not adversely affected academically by their participation in the peer support intervention (Carter, Moss, Hoffman, Chung, & Sisco, 2011; Hudson & Browder, 2014; Jimenez, Browder, Spooner, & DiBiase, 2012; McDonnell, Mathot-Buckner, Thorson, & Fister, 2001). This section will further explore the research on facilitating peer interactions through peer support strategies, followed by a discussion of peer interventions that have focused on academic instruction, particularly in the area of literacy.

Peer Support Interventions

Several studies have investigated the effects of peer supports to facilitate social interactions among peers with and without SD. In an early study demonstrating the effectiveness of teaching peer interactions, Haring and Breen (1992) established peer support networks among two middle school students with SD and peers without disabilities. The authors used a multiple baseline across participants to teach peers without disabilities to prompt social interactions for two middle school students with SD. Each peer network consisted of four or five peers without disabilities who were chosen by the target students based on criteria such as sharing common interests and/or sharing a class. In the first phase, target students and peers were assigned to meet up at least one time per day to meet up, often during lunch or during transitional times (e.g., class

changes) but were not restricted on the amount of any additional interactions. In the second phase, peers were taught, through discussion and role-play, to systematically address social skill needs through response prompting, to reinforce social participation through verbal praise, and to ignore inappropriate social interactions. Peers also were taught to record the number and quality of interactions during each meeting. In the third phase, researchers used modeling to teach the target students appropriate responding based on common discussion topics (as reported by their assigned peers). Results indicated a functional relation between peer support networks and overall target student interactions, even in non-assigned meeting contexts.

In another study on peer supports, Carter et al. (2005) taught six peers without disabilities to support three students with moderate intellectual disabilities and autism by adapting class activities, providing some instruction on IEP goals and behavior support plans, providing frequent feedback, and promoting communication between the target students and other students in the class. Using an ABAB and BABA design (one per target student), the researchers compared the effects of one peer versus two peers to support each student. The researchers provided peers with two to four days of training as they began to work with target students, and then they continued with monitoring and feedback as needed. They also trained teachers to coach peers. Overall, results indicated that, when supported by trained peers, target students displayed higher rates of social interaction with other classmates and they experienced more consistent engagement with general curriculum materials.

More recently, Hughes et al. (2011, 2013) addressed the unique needs of high school students for using conversational and social skills as the primary means of self-

advocacy and participation in school. Hughes et al. (2011) implanted a social skills intervention between high school students with and without SD (including communication impairment). Using a multiple baseline across settings and participants, students with SD were trained to use communication books to initiate social interaction with peer partners. Training consisted of explicit instruction (i.e., script, modeling, prompting, repeated practice, corrective feedback). The communication books were laminated and bound notecards with picture symbols and text representing conversation starters. Two of the participants could read the text; the other two used the picture symbols while their peer partners read the conversation starter before responding. Peer partners were taught to prompt social interaction and to expand on conversations. Results indicated that all participants with SD were able to increase their quality of interactions with their peers, though the amount of reciprocity in the interactions varied. In a similar study, Hughes et al. (2013) taught five students with autism, who also had verbal ability but impaired social skills, to use communication books to initiate social interactions. The communication books consisted of typed conversation openers. Two of the participants, who had limited reading ability, used books with picture symbols to supplement the text, and one participant with visual impairment used a book supplemented with Braille. Using a multiple probe across participants design with a similar procedure to that of Hughes et al. (2011), the authors found that, when the students with autism used their communication books, their rate of initiating interaction with peer partners increased to levels typical of students without disabilities, and their peer partner initiations and responses also were increased from baseline levels. These results indicated students with

and without disabilities were able to engage in reciprocal conversations when students during intervention as compared to limited interaction during baseline.

Peer interactions to promote comprehension. Although the research focusing on peer interactions have not directly measured academic growth for students with SD, there is a long history of evidence for the use of peer tutors in which peer interaction is strategically used to facilitate acquisition of academic skills aligned with the general curriculum, including comprehension of material (Godsey et al., 2008; Hudson & Browder, 2014; Jameson, McDonnell, Polychronis, & Riesen, 2008; Kamps, Locke, Delquadri, & Hall, 1989; Miracle et al., 2001; Smith, Spooner, & Wood, 2013). For example, Godsey et al. (2008) taught peers without disabilities to use constant time delay to teach a chained task for preparing food in a one-to-one format with students with SD. Researchers used modeling and role-playing to teach the time delay procedures. Using a multiple probe across participants design, four high school students with SD demonstrated acquisition and maintenance of the chained tasks. Similarly, Jameson et al. (2008) taught three middle school peers without disabilities to implement constant time delay to teach skills related to IEP goals throughout the school day in inclusive general education settings (i.e., art and physical education). Using a multiple probe across participants design, researchers assessed peer tutor behavior and consequent learning for students with SD. Results indicated peer tutors were able to implement the procedures with a high rate of fidelity, though they had some difficulty identifying appropriate moments to use the time delay procedures. The students with SD, however, did demonstrate skill acquisition that generalized to unprompted settings.

More directly measuring academic skills, Miracle et al. (2001) used an alternating treatment design to demonstrate that peers were able to learn to implement systematic instruction (i.e., constant time delay) with similar target student outcomes to that of a teacher-implemented intervention. Smith et al. (2013) also incorporated peer support in their intervention package for teaching comprehension of science concepts for three students with SD. In this study, however, the instruction was delivered through slide show presentations on an iPad tablet, with systematic prompting built in. Though peers did not directly implement the instruction, they were trained to provide one-to-one feedback and support to target students on using the iPad and participating appropriately (e.g., not rushing through the slide shows) during generalization measures in the general education science classroom. The results of these studies indicate peer tutoring may be an efficient way to support academic learning in an intensive, one-on-one format for students with SD.

Related specifically to comprehension of literature, Hudson and Browder (2014) taught five elementary-aged peers without disabilities to implement a shared story with students with SD using systematic prompting. As previously discussed, the target students in this study demonstrated learning via comprehension measures, and fidelity measures indicated peers without disabilities were able to implement the procedures correctly. Though the shared story training and implementation required some extra time outside class for the peers, peer GPA was not affected.

Studies on peer tutoring (e.g., Godsey et al., 2008; Hudson & Browder, 2014; Smith et al., 2013) have demonstrated that peers without disabilities can interact with students with SD to support them in acquiring academic content. In addition to one peer

directly supporting a student with SD, researchers have examined ways to facilitate peer interactions that support learning for students with SD in more inclusive, equal learning environments (Dugan et al., 1995; Jimenez et al., 2012).

Cooperative learning groups. Cooperative learning groups are small group arrangements of students with and without disabilities to support learning for students with disabilities while also promoting collaboration and interdependent learning among the group (Carter et al., 2010; Dugan et al., 1995; Jimenez et al., 2012; Kamps, Leonard, Potucek, & Garrison-Harrell, 1995). Through the use of cooperative learning group arrangements, three studies to date have demonstrated improvement on targeted academic skills for students with SD, as well as benefits for peers without disabilities. In an early examination of cooperative learning groups, Dugan et al. (1995) assessed the effects of the intervention on student comprehension of social studies content for students with and without SD. A reversal design was used to compare student learning during traditional lectures (baseline condition) with a cooperative learning approach. All students were assigned roles (e.g., manager, organizer, recorder) and were taught appropriate social skills and team behaviors. Assigned to groups of four (including one student with SD), two fourth-grade students with autism and 16 fourth-grade peers without disabilities, discussed key words and facts related to the day's topic, and they engaged in a team activity designed to apply their content knowledge. Weekly pre-posttest measures of social studies text comprehension were given for all group members, though students with SD received a test with modifications. Academic engagement and student interactions were also measured through observation during weekly 5-min probes (engagement) and 10-min probes (student interactions). Results indicated all target

students (baseline *M* = 0 to 2; intervention *M* = 5 to 8.6) and most peers (baseline *M* = 3.2 to 4.7; intervention *M* = 9.5 to 10.5) made more gains on pre-posttest scores during intervention as compared to baseline conditions. Academic engagement and student interaction also were greater for all students during cooperative learning groups.

Similarly, Kamps et al. (1995) examined the use of cooperative learning groups in addition to teacher-led instruction for third-grade students with SD. Using a reversal design and a similar instructional format to that of Dugan et al. (1995), two students with SD were grouped with peers without disabilities in the context of a fifth grade general education classroom during language arts. In all conditions, students read typical fifth-grade novels and received two weeks of teacher lecture. During intervention phases, students participated in cooperative learning groups, in which they first discussed key social behaviors and then engaged in group activities related to vocabulary and comprehension practice. Results indicated both students with SD demonstrated increases in correct responding on weekly posttests relative to pretests (baseline *M* = 0 to 2; intervention *M* = 2.5 to 5). Peers without disabilities also demonstrated pre- to posttest gains on average, and all students demonstrated increased academic engagement and student interaction during conditions using cooperative learning groups.

Extending the use of cooperative learning groups to promote comprehension of science content, Jimenez et al. (2012) taught six peers without disabilities to implement time delay during a general education science class in a one-to-one format with five middle school students with SD. In this study, the general education teacher taught a lesson using the science textbook, a science experiment, and an inquiry process in which the teacher guided students to think critically about the concepts presented and to reach

for deeper comprehension by relating the content to prior knowledge to interpret experiment results. During these lessons, four to five peers without disabilities were grouped with one student with SD in a cooperative learning environment. Peers had received a 1-hour training prior to the intervention in which they learned to use constant time delay to teach the target students to match pictures, words, and science concept statements and to self-monitor their understanding of the concepts using a graphic organizer. The peers then embedded this instruction in their cooperative group setting throughout the science class. Results of this study indicated a functional relation between the intervention and target student learning, as all target students demonstrated higher mean responses on science concept comprehension measures and on use of the graphic organizer to self-monitor their learning.

Though limited, the evidence on the use of cooperative learning groups to promote learning for students with SD is promising (Dugan et al., 1995; Jimenez et al., 2012; Kamps et al., 1995). Not only did students with SD demonstrate learning on measures of comprehension, but they also experienced increased peer interactions and longer periods of academic engagement during cooperative learning groups. These benefits were seen in the context of general education classes, indicating they are an effective method for teaching students with SD in inclusive settings.

Summary on Peer Interactions

There is considerable evidence supporting the use of peers to teach students with SD, Peer support interventions have been shown to increase social interactions between students with and without SD in inclusive settings (Alquirani & Gut, 2012; Carter et al., 2010), and based on the evidence, strategically arranged peer interactions in the context

of cooperative group learning environments may improve performance in general curriculum content for student with SD (Dugan et al., 1995; Jimenez et al., 2012). In contrast, most of these studies have not examined more inclusive methods for supporting these students in discussing content with peers in order to reach deeper levels of text comprehension. As students with SD are included in the general curriculum (CCSS, NGA & CCSSO, 2010; IDEA, 2004), they need to be able to comprehend and discuss academic content in a way that impacts their lives in a meaningful way. Further research is needed to increase opportunities for peer interaction during content discussion, ideally in inclusive settings, in order to facilitate this deeper comprehension and personal connection with academic content (Browder, Gibbs, et al., 2009; Pennell, 2014).

Summary of Research Foundation for the Current Study

Literacy is an interactive experience between the reader, other readers, and collective prior knowledge and experiences (Keene & Zimmerman, 2007; Pittman & Honchell, 2014; Vygotsky, 1978). Comprehension of literature in a way that applies meaningfully to one's life and across knowledge of one's world is therefore a foundational skill for all learning. Often termed higher-order comprehension (e.g., Anderson & Krathwohl, 2001; Rapp et al., 2007), this deeper understanding and application of literature has been facilitated through discussion groups (e.g, LDGs, book clubs) in general education (Berne & Clark, 2006; Ferguson & Kern, 2012; Pittman & Honchell, 2014). In book clubs, students of different reading abilities can learn from each other as they reflect on the meaning of text and compare it to prior knowledge.

Though students with SD have traditionally had limited exposure to literacy instruction, recent research in literacy instruction for this population indicates they can

learn literacy skills, including comprehension, when provided adequate supports. One particularly successful way for providing students with access to grade-aligned literature has been through the use of read-alouds (Browder et al., 2007, 2008; Mims et al., 2012). In read-aloud instruction, a teacher or other reader (e.g., peer) reads the text aloud while embedding opportunities for students with SD to actively engage with the text and identify key elements of the story (e.g., vocabulary, sequence of events). Although read-alouds are an evidence-based practice for improving emergent literacy skills (Hudson & Test, 2011), including text-based listening comprehension, read-aloud research has not addressed the need to teach higher-order comprehension for students with SD. Given its success in increasing access to, and progress in, literacy skills for students with SD, read-alouds may provide a foundation for teaching higher-order comprehension when combined with general education comprehension strategies such as book clubs, as well as adequate instructional supports.

Advances in teaching students with SD have established systematic instruction as an evidence-based practice across content areas, including literacy (Browder et al., 2006; Spooner et al., 2012), and there is emerging evidence for the use of explicit instruction in combination with systematic instruction to teach more abstract skills such as comprehension (Flores & Ganz, 2007; Knight et al., 2013). With systematic instruction, students are systematically provided prompts with fading, reinforcement, and error correction to teach skills such as those embedded in read-alouds. Explicit instruction, including model-lead-test formats and providing examples and nonexamples, has been used to teach literacy skills (e.g., prepositions, Hicks et al., 2011) and generalization of literacy skills (Spooner et al., 2015).

Though most studies on literacy for students with SD have been conducted in self-contained settings, in order for students with SD to capitalize on the premise of Vygotsky's sociocultural learning theory (1978) by learning from others, these students may benefit from strategically-arranged opportunities to interact with same-aged peers while discussing literature. Peer supports have been shown to not only increase social interaction between peers with and without disabilities, but they also have led to increased academic engagement for students with SD (Carter et al., 2005; Haring & Breen, 1992; Hughes et al., 2011). Particularly in the area of literacy, peer interactions have been facilitated through peer tutoring during read-alouds (Hudson & Browder, 2014), leading to improvements in literacy skills for students with SD. Peer interactions and instruction through cooperative group learning have been taught through systematic and/or explicit instruction. These elements of instruction may be essential to teaching higher-order comprehension through book club LDGs for students with SD.

Given the recent focus on literacy instruction (CCSS, NGA & CCSSO, 2010), as well as the federal mandates for inclusion in general education to the greatest extent possible for students with SD (IDEA, 2004; NCLB, 2002, 2006), continued investigation for strategies that promote academic progress in general education settings is warranted. The research foundation for teaching literacy to students with and without disabilities, in addition to systematic/explicit instructional procedures, may provide the support needed to facilitate peer interaction and ultimately improve higher-order comprehension for students with SD in general education content and settings. Further, the use of inclusive educational practices, including modifications and adaptations, may streamline

instruction for students with SD to facilitate a learning environment in which literacy truly becomes a shared experience for all students.

Potential Contribution of the Current Study

Legislative mandates for instruction aligned with general curriculum content (IDEA, 2004; NCLB, 2002, 2006), along with the importance of literacy instruction, including higher-order comprehension, to make personal and informed connections with text (Browder et al., 2009; Keefe & Copeland, 2001, Rapp et al., 2007), necessitate continuing examination of strategies for teaching these skills in a manner that is effective and meaningful for students with SD. To fully experience the benefits of inclusive practices such as literature discussion with same-age peers, students with SD also need structured instruction-based opportunities to engage academically and socially (e.g., Carter et al., 2010; Dugan et al., 1995; Hughes et al., 2011, 2013; Jimenez et al., 2012). Although researchers have identified some practices for teaching literacy and for teaching social interactions with students with SD, teachers are faced with the challenge of supporting these students in inclusive settings.

The present study uniquely addressed the gaps in literacy instruction for students with SD by examining the use of book clubs, typically a general education strategy, to promote deeper comprehension of text that translates into contributions to discussion of the text with general education peers. Consistent with research on teaching students with SD (Browder et al. 2006; Flores & Ganz, 2007; Hicks et al., 2011; Spooner et al., 2012), systematic and explicit instruction was used in combination with technology and adapted text/read-alouds (Mechling, 2011; Spooner et al., 2014, 2015) to teach students to not only comprehend text but also to make inferences and applied, evaluative statements

about the text in the context of inclusive book club discussions. The purpose of this study was to examine the effects of read-alouds delivered on an iPad2® and paired with systematic and explicit instruction to teach comprehension and discussion of grade-aligned text with same-age general education peers in a book club setting.

CHAPTER THREE: METHOD

Overview of the Method

In this study, a multiple probe across participants design (Cooper et al., 2007; R. D. Horner & Baer, 1978) was used to measure the effects of pre-instruction, using systematic and explicit instruction, on comprehension and discussion during book club for students with SD. The study focused on five research questions: (a) What is the effect of using systematic and explicit instruction with a shared story using grade-aligned text, formatted on an iPad2® (pre-instruction) on target participants' ability to answer comprehension questions about the text?; (b) What are the effects of pre-instruction on generalization of correct comprehension responding during book club discussions by target participants?; (c) What are the effects of pre-instruction on total discussion contributions during book club discussions by target participants?; (d) What is the effect of the inclusive book club experience on total discussion contributions made by peers?; and (e) What are the perceptions of participants, peers, and teachers regarding the intervention? The study was conducted with three high school students with SD in a local rural high school special education and general education setting. The sections to follow will describe in detail the participants, setting and materials, research design, dependent variables, procedures, data analysis, and potential threats to validity

Participants

Target participants. Three high school students with SD were recruited to participate in this study. The experimenter obtained informed parent consent and student assent for all target participants. Target participants had to meet the following inclusion criteria: (a) identified as having a moderate or severe intellectual disability, (b) have verbal ability and ability to carry a conversation about a familiar topic beyond simple one-word responses (e.g., yes, no), (c) have little to no reading ability (i.e., read below a 2nd grade level), and (d) physically and visually able to use an iPad®. The students' teachers nominated the participants based on the students' ability to demonstrate these skills. All target participants received a specialized academic curriculum and spend more than 80% of their school day in a separate setting, and received the alternate assessment via alternate achievement standards (AA-AAS). Both James and Miranda participated in chorus with peers without disabilities, and all target participants had lunch in a general setting with peers without disabilities. Zeke had an IQ score of 69 on the Universal Nonverbal Intelligence Test (UNIT™; Western Psychological Services, 1998); a review of his records also revealed that he scored at the chronological age of 5 or lower on all Woodcock Johnson III (WJ-III®; Riverside Publishing Co., 2001) tests, indicating academic and adaptive skills ranking in the less than one percentile. The IQ score in combination with his adaptive skills places Zeke in the range of moderate intellectual disability. All target participants were familiar with using iPads®. Target participant demographics are displayed in Table 1. Pseudonyms are used for all target participants.

Table 1: Target participant demographics

Student	Age	Gender	Race	Grade	IQ	Disability	Current Reading Level
James	17	Male	European-American	10	49	ID-Moderate	C (1st Grade Equivalent)
Zeke	16	Male	European-American	9	69[a]	Multiple Disabilities[b]	aa (Pre- Reader)
Miranda	18	Female	Hispanic-American	11	44	ID-Moderate	C (1st Grade Equivalent)

Note. [a]IQ score, obtained from The Universal Nonverbal Intellenge Test (UNIT; Bracken & McCallum, 1998), falls in the Very Delayed range, the lowest classification for UNIT. [b]For Zeke, Multiple Disabilities included hearing impairment corrected with two hearing aids, and intellectual disability.

General education peers. Four general education peers were recruited to participate in book club discussions during this study. The experimenter obtained informed parent consent and student assent for all peers. All general education peers were nominated by their Teacher Cadet teacher or Beta Club supervisor based on these students' level of responsibility and willingness to assist other students. Peer demographics are displayed in Table 2. Pseudonyms are used for all peers.

Table 2: General education peer demographics

Student	Age	Gender	Grade	Experience as Peer Mentor
Ann	14	Female	9	None
Daniel	17	Male	11	None
Nate	16	Male	11	None
Rachel	16	Female	12	None

Experimenter. The experimenter was a special education doctoral student in the dissertation phase of the program. She held a teaching license in special education and had over ten years experience working with individuals with SD.

Setting and Materials

Setting. The study took place in a public high school located in a small urban school district in the Southeast. The high school is a Title 1 school with approximately 1,600 students, and approximately 46% of these students are eligible for free and reduced-price lunch.

All pre-baseline (PB), baseline with bookclub (B+BC), and pre-instruction sessions took place either in the foyer of the gym or in a side office connected to one of the special education classrooms. These two locations were selected because they were available, quiet settings in close proximity to the target student's instructional location. The experimenter sat at a table next to the target participant. Book club discussion groups took place in the side office connected to a special education classroom, which also was quiet and free from distractions. In the book club setting, the experimenter arranged chairs in a circle, with no tables or desks, to facilitate conversation. The experimenter consulted with the special and general educators to establish an implementation schedule that did not interfere with instruction for any participants. Peers were only available during their *Smartlunch*, an extra 30 minute period at the beginning of their lunchtime. Therefore, book clubs were held during the first 30 minutes of *Smartlunch*, and target participants received the read-aloud session in the hour prior to book club sessions.

Materials. An iPad2® equipped with a GoBook© app (Attainment Co.) was used to deliver all read-aloud materials for target students. Two novels from popular high school literature were used in this study (i.e., *The Hunger Games* and *Catching Fire* by Suzanne Collins). The experimenter adapted the novels by chapter to control for length and complexity; the Lexile score for the first three chapters of the *Hunger Games* was

920L, and the Lexile score for *Catching Fire* was an average of 820L (680 – 930L). Validity for the adapted text was reviewed by a reading content expert. Literal and higher-order (e.g, inferential, applied) comprehension questions were developed by the experimenter and evaluated by a literacy content expert. The first novel, *The Hunger Games*, was used during PB; target participants engaged in a read-aloud with the experimenter using an adapted version of the novel presented in e-text format in the GoBook® app on the iPad2®. The second novel, *Catching Fire*, was used throughout the B+BC and pre-instruction (i.e., intervention) phases. Following PB, the general education peers general education peers joined the study. Peers read the novel in its original format, while the target participants engaged in a read-aloud with the experimenter using an adapted version of the novel presented on the iPad2®. In all study phases, target participants used a GO with pictures and text-to-speech, also presented on the iPad2®, to sequence story elements that came *first, next, then* and *last*. To put the pictures in order, the pictures were designed in the GoBook© app to slide into any of four blank boxes positioned directly below the array of four pictures. The target participant used his or her finger to move the pictures on the iPad2® screen. Target participants then answered three additional literal comprehension questions, with four pictures representing multiple response options (i.e., one correct answer and three distractors) on the iPad2®. Students were prompted to press each picture for all response options to obtain descriptions for each picture via text-to-speech prior to answering each sequencing and multiple choice literal comprehension question.

During book club sessions, the experimenter completed a story-mapping GO (e.g., identify characters, setting, problem, solution) with the group prior to delivering

discussion questions. After the story map was completed, a list of experimenter-generated questions, including trained literal comprehension and untrained higher-order discussion questions, were used to facilitate the book club discussion. Literal comprehension questions were questions related to the novel for which the answers are directly derived from the text (Rasinski & Padak, 2008; L. Wood et al., 2014). An example of a literal question is, "What is the nickname for District 12?" Appendix A contains a selection of literal comprehension questions used in the study. Higher-order discussion questions included inferential and *applied* questions, the answers for which are not directly found in the text but instead require the reader to use their prior knowledge and personal backgrounds to interpret the text (Rasinski & Padak, 2008; L. Wood et al., 2014). Inferential questions require the reader to consider information that is implied but not actually stated in the text. An example of an inferential questions is "Why do you think Katniss volunteer to serve as a tribune in place of her sister?" Applied questions require the reader to make judgements about something in the text. An example of an applied questions is "To what character in the Hunger Games do you relate, and why?" Appendix A contains a selection of discussion questions used in the study.

Research Design

A multiple probe across participants design (Cooper et al., 2007; R. D. Horner & Baer, 1978) waas used to examine the effects of pre-instruction, using systematic and explicit instruction, on student comprehension of grade-aligned novel chapters and contributions to a book club discussion group. Phase changes were dependent on both literal comprehension questions and generalization of responses in book club. During PB, the target participants were provided a read-aloud of an adapted chapter from the first

novel and then presented with seven comprehension questions (one sequencing with four possible responses and three additional literal questions in multiple choice format). Each target participant's correct responses were recorded and totaled. All participants received three PB sessions in order to establish a trend of responding without the influence of book club discussions with peers. After PB, target participants then collectively moved into the B+BC phase. Once the first participant, James, demonstrated a low and stable baseline for literal comprehension responses and for generalization of literal comprehension responses in book club, he entered the intervention phase, pre-instruction. Other participants continued to receive baseline session probes intermittently, with no more than eight sessions between baseline probes. When the first student's performance demonstrated a clear increase in level and trend, all remaining participants received a baseline probe and then the second participant entered the intervention phase. This process continued for the remaining students. Each participant received a cluster of three consecutive baseline probes prior to beginning the intervention.

All sessions were implemented three to four times per week as the school schedule allowed until a participant met the mastery criterion for literal comprehension responses during the read-aloud and for generalization of responses to book club. Literal comprehension mastery criterion was 6 out of 7 correct responses for 2 sessions. Once mastery was met, skills were assessed weekly. Because individual students naturally exhibit varying levels of conversation, no mastery criterion was set for discussion responses; instead, participants were given enough time to attain their best possible level of discussion.

Dependent Variables and Data Collection

Literal comprehension responses. One primary dependent variable was student correct responses on experimenter-generated literal comprehension questions during the read-aloud. This skill was assessed immediately following each read-aloud chapter during all phases. Content validity for the comprehension questions was evaluated by a reading expert (i.e., a professor in the Department of Reading and Elementary Education at the University). The comprehension questions included one literal (i.e., sequencing) question and three multiple choice questions. For the sequencing question, participants used a sequencing GO and corresponding pictures paired with text-to-speech to represent four key events in the chapter. An array of four pictures, one correct answer and three distractors, was presented for each of the three multiple choice literal comprehension questions. Each component of the sequencing question (first, next, then, last) counted as four separate opportunities to respond, along with one opportuntity for the three multiple choice comprehension questions, for a total of seven comprehension responding opportunities. During the PB and B+BC phases, literal comprehension responses were measured and recorded on a data collection form (see Appendix B) by tallying all unprompted correct responses (score of +) and all incorrect and non-responses (score of -). During intervention (i.e., preinstruction), literal comprehension responses were measured and recorded on a data form for read-aloud sessions (see Appendix B) by tallying all unprompted correct responses (score of +). All incorrect, non-responses, and prompted responses received a score of -. To make a correct response to the sequencing question, target students had to move pictorial representations of four pictures representing scenarios from the chapter to indicate the correct order of the pictures. Each

sequencing picture was scored, for a total of four possible correct responses. To make a correct response for the remaining literal comprehension questions, presented in multiple choice format, target participants had to provide a correct response to the question by verbally stating the correct response or by touching the picture that represented the correct response on the iPad2®. Correct responses were praised during intervention only. Errors made during pre-baseline and baseline and book club phases were ignored. Errors and nonresponses occurring during intervention were corrected using a modified system of least prompts, including two levels of text rereads. When an error or nonresponse occured, the experimenter reread the page containing the answer. A second error or nonresponse was followed by a re-read of the sentence containing the answer. A third prompt, a model of the correct answer, was provided if the student made a third error or nonresponse.

Generalization of student responses in book club. The second primary dependent variable was generalization of student responding on literal comprehension questions to the book club setting. For this measure, data were collected on target participant responding to the seven literal comprehension questions used in the read-aloud sessions (one literal sequencing with four components and three additional literal questions) posed during the book club discussion. Data were recorded on a data collection form for book club meetings (see Appendix C). During the B+BC phase, the experimenter tallied all correct responses (score of +) and incorrect responses (score of -); during the pre-instruction intervention, the experimenter tallied all correct responses (score of +) and incorrect or prompted responses (score of -). As in the read-alouds, to score a correct response on the sequencing question, a target student had use the iPad2®

to place in temporal order the pictures representing each of four scenarios from the chapter (one possible correct response per scenario). Each of these sequencing opportunities was presented before the experimenter moved on to a new question. To score a correct response for the remaining literal comprehension questions, the target student had to verbalize or touch the correct response to the remaining literal comprehension questions. Error correction and verbal praise for correct responses were provided during the intervention phase, and the procedures were identical to those in the read-aloud sessions. These literal questions were directed to the target student in each book club, with different questions specifically for the general education peers interspersed to provide each group member with a turn to respond.

Target participant book club contributions. The third dependent variable was target participant contributions to experimenter-generated book club higher-order discussion questions. Higher-order questions were evaluated for content validity by a literacy expert. These discussion questions were presented during book club for both target students and peers immediately after the literal comprehension questions had been answered. Target participant contributions were measured through experimenter observations of book club meetings by tallying contributions of original on-topic thoughts (3 points each), on-topic (but not original) comments/questions (2 points each), and off-topic or social comments/questions (1 point each). Basic one-word utterances (i.e., “yes,” “no”, “maybe”), as well as statements indicating the participant did not know the answer (e.g., “I don’t know”) did not receive points. Discussion contribution points were recorded and tallied on a data collection form for book club meetings (see Appendix C). Participants received credit for making any contributions to discussions, but they

received more credit for providing on-topic comments relevant to the conversation. The previous chapter's discussion questions were practiced during pre-instruction (i.e., intervention). Discussion contributions during pre-instruction and during the book club were praised. No error correction occurred during book club sessions beyond those that naturally occurred in the context of conversation. Participants were motivated by praise from their teacher; therefore, whenever a participant provided a contribution that scored a 2 or 3, the experiementer told the teacher who then provided them with praise. These contributions also resulted in immediate praise from the experiementer.

Peer book club contributions. The fourth dependent variable was peer contributions to book club higher-order discussion questions. These discussion questions were presented for both target students and peers during book club immediately after the literal comprehension questions had been answered. For this measure, contributions made by one peer per book club group were were measured through experimenter observations of book club meetings. This peer was randomly chosen for observation from each book club group prior to the first book club meeting. Contribution points were tallied according to original on-topic thoughts (3 points each), on-topic (but not original) comments/questions (2 points each), and off-topic or social comments/questions (1 point each). Basic one-word utterances (i.e., "yes," "no," "maybe"), as well as statements indicating the peer did not know the answer (e.g., "I don't know") did not receive points. Peer discussion contribution points were recorded and tallied on a data collection form for book club meetings (see Appendix C). As with target student contributions, peer contributions did not receive error correction beyond those that occur naturally during the

discussion. The experimenter provided either praise or affirming statements for quality contributions from peers.

Social Validity

Social validty of the intervention was measured through a five-statement questionnaire to obtain peer, target participant, and teacher (two special educators) perceptions of the intervention (see Appendix D for the social validity questionnaires). Peers, target participants, and teachers were asked to rate their agreement with each statement on a Likert scale. Statements were related to attitudes toward inclusion (i.e., working with students with disabilties and/or general education peers on academic content, social implications) and the use of technology during book club.

In addition to social validity measures, the use of portable technology such as the iPad2® was estimated to be cost effective for the classroom setting. This type of technology is able to run multiple applications at once and can be used to meet the instructional needs of multiple students (Douglas et al., 2012). The GoBook© app cost $80, considerably less money than the cost of most literacy resources and instructional software.

Procedures

Pre-baseline (PB). During PB, the experimenter read aloud to each target participant, in a one-on-one format, a chapter of the first adapted book in sequential order and briefly defined relevant vocabulary words for the chapter. Following each chapter read-aloud, the participant was presented with four pictures depicting key events in the chapter, along with a sequencing GO. The participant was then asked to determine the order in which each event occurred in the story (e.g., “What comes first, second, third,

and then fourth?"). After presentation of the sequencing question and GO, the experimenter asked three additional literal comprehension questions. Target participant responses were not prompted or praised. Participants were praised for attending to the read-aloud.

Baseline with book club (B+BC). This second phase was identical to PB, with the addition of book club discussions. Immediately following the read-aloud with comprehension measure, the participant joined at least two other peers (with a maximum of three peers) in a book club meeting. Each participant belonged to the same book club thoughout the study (e.g., grouped with the same peers, though some peers were in multiple book clubs). A peer from another book club served as a substitute for an absent peer on occasion.

The experimenter began the first meeting by establishing a few (approximately three) guidelines for appropriate book club behavior (e.g., taking turns; respectfully disagreeing) and discussing the book club procedure. The group members assisted in developing their bookclub guidelines. All subsequent meetings began by reviewing the procedure and behavioral guidelines for book club discussions. Second, the experimenter used a storymapping GO to lead the group in a review of the chapter to be discussed. Third, the experimenter delivered the sequencing and multiple choice literal comprehension questions, using the same questions from the read-aloud session. The target student was first asked to complete the sequencing GO by placing the pictures in temporal order of event occurring in the story. Then, the multiple choice questions were interspersed with two to three questions for general education peers to answer. This format was designed to ensure that all group members, including peers, had an

opportunity to participate and respond to questions; however, data were collected only for target student responses to the literal comprehension questions. Fourth, the higher-order discussion questions were presented. Each question was presented in a round-robin format, beginning with the student to the far left and moving to the next student for subsequent questions. For example, for the first question, the experimenter first asked the student seated on the far left to answer and then ask each of the other group members their thoughts on the question or the previous responses. For subsequent questions, the next student seated in order will be asked to answer the question before the other group members are given the opportunity to respond. This process provided all group members with at least one opportunity to provide an original response. Transitions to the next student were facilitated by the experimenter using general questions such as, "Do you agree?" or "What do you think?" Before moving on to a new question, the experimenter asked if there were any other thoughts.

Intervention: Pre-instruction. The third phase was identical to the second phase, B+BC, with the addition of systematic and explicit instruction for literal comprehesion and discussion questions during the one-to-one read-aloud, as well as for literal comprehension questions during book club as needed for both target students and peers. When literal comprehension questions were delivered, a modified system of least prompts was used to teach participants to respond correctly. If a participant responds correctly, the experimenter provided specific praise. If the participant responded incorrectly or did not respond, the first prompt, a re-read of the page on which the answer is found, was provided. If the participant then responded incorrectly or did not respond, the second prompt, a re-read of the sentence in which the answer is found, was provided.

A third prompt, which was a model of the correct answer, was provided if the student continued to respond incorrectly or did not respond. All independent and prompted correct responses were praised.

Explicit instruction booster. Two of the three target participants (i.e., Zeke, Marisa) did not make adequate progress toward the mastery criterion for literal comprehension responses during the read-aloud. For these participants, explicit instruction was added during the read-aloud to improve participants' attentiveness to, and understanding of, the text. After each page was read aloud via text-to-speech, the experiementer reviewed key events and provided brief explanations to guide participants in relating these events to other events in previous chapters. The explicit instruction booster took approximately 1 minute per page of text.

Following presentation of the literal comprehension questions during pre-instruction, higher-order discusion questions were practiced using the previous chapter's discussion questions. Explicit instruction, specifically model-lead-test, was used to teach correct responding to discussion questions. First, one question was used as a model. The experimenter stated the question and then demonstrated a correct response along with a think-aloud of the process for deducing the answer. For example, the answer to an applied question was prefaced by "I think," followed by the answer and a reason for the answer (i.e., "because…"). The experimenter demonstrated where in the story she found supporting evidence for her answer. A second discussion question from the previous chapter was then used to lead the partipant in answering and supporting his/her answer with facts from the book in the same manner that was modeled by the experimenter. Incorrect responses and nonresponses were followed by a model and think-aloud by the

experimenter. Finally, the participant was given three additional discussion questions from the previous chapter. If a participant responded appropriately, the experimenter provided specific praise. If the participant responds inappropriately (e.g., off-topic, insufficient rationale) or did not respond, the experimenter modeled an appropriate response and provided a think-aloud for the process. The participant was then asked to practice answering the question again. Participants had access to the adapted text on the iPad2® while answering higher-order comprehension questions.

Immediately following the read-aloud and pre-instruction, each participant joined their book club meeting with general education peers. The procedure for book club meetings was identical to that of the B+BC phase. Participants also had access to the adapted text on the iPad2® during book club discussions, but the iPad2® was removed on the few occasions that it became distracting to a participant (e.g., partipant was preoccupied with manipulating items on the iPad2® screen and not participating in the book club). During the book club, target students and peers were prompted if needed when answering literal comprehension questions but were not prompted to answer the higher-order discussion questions beyond encouragement and follow-up from the experimenter or peers in the context of the discussion.

Reliability

Reliability was measured through interobserver agreement (IOA). A second observer, a first-year special education doctoral student, reviewed a minimum of 30% of the sessions across phases and participants via recordings for the purposes of IOA. IOA was calculated by dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100 (see Appendix D for the reliability checklist).

Agreements were defined as identical response scores on the same item from the experimenter and the second observer. Acceptable IOA criterion was 90% of all sessions. The interventionist and the second observer met to discuss discrepancies when IOA fell below 90%.

Procedural Fidelity

The same second observer, a first-year special education doctoral student, also collected procedural fidelity data by observing recordings of a minimum of 30% of all target participants in all phases. A procedural checklist will be used to score fidelity of implementation for delivering the read-aloud, implementing the systematic and explicit instruction, and leading the book club meeting (see Appendix D for the procedural fidelity checklist). Procedural fidelity was calculated by dividing the number of steps implemented without error by the total number of steps and multiplying by 100. Acceptible fidelity criterion was 90% of all sessions.

Data Analysis

The data were analyzed by visually inspecting the graphs of daily target participant and peer responses. Changes in level and trend, as well as immediacy of effect, variability, any overlap between phases, and consistency across participants in similar phases were analyzed (Cooper et al., 2007; Gast & Ledford, 2014; Johnston & Pennypacker, 2008; Sidman, 1960). To determine whether there was a functional relation between the pre-instruction intervention and participant responding, prediction and verification of the prediction as determined in baseline, in addition to an initial effect and replication of the effect through comparison of baseline and intervention performance, were analyzed across all students.

Threats to Validity

Internal validity. The features of single-case studies are designed to control for threats to internal validity. Within the multiple probe across participants design, internal validity is strengthened through systematic demonstration and replication of effect between the independent and dependent variables. In the present study, the effect for target participant responding to literal comprehension questions in the read-aloud and generalization to the book club setting was demonstrated and replicated across three participants. The effect for target participant discussion contribution points also was demonstrated and replicated across three participants. History effects were controlled for by using baseline probes compared to participant performance when staggered into intervention. Maturation was controlled for by implementing the intervention with more than one participant and by maintaining a relatively short implementation time-frame. Using intermittent baseline probes instead of continual baseline data collection controlled for testing effects. Validity of the instrumentation was maintained through content expert validation of comprehension questions prior to implementation and continual IOA measures for 30% of all sessions. Statistical regression to the mean and mortality effects were controlled for by comparing participant performance in baseline with his/her own performance in intervention and replicating this effect across at least three participants. Due to the non-random nature of participant selection in multiple baseline studies, selection biases will be controlled for as the study is systematically replicated across researchers from multiple geographical locations (R. H. Horner et al., 2005; Sidman, 1960).

External validity. Single-case designs have inherently weak external validity. Selection-treatment interaction was minimized by selecting participants with high need in the area of comprehension and discussion of academic content. Because discussion has been used as a comprehension intervention (e.g., Pittman & Honchell, 2014), multiple-treatment interference was controlled for by clearly comparing participant performance in book club with and without systematic and explicit instruction (i.e., B+BC compared to pre-instruction intervention) and by comparing student baseline performance on comprehension measures with and without book club discussions (i.e., PB compared to B+BC). External validity was further enhanced by clearly defining the variables, having a sufficient number of participants (a minimum of three) and clearly-defined procedures to facilitate replication across five or more studies from at least three different research groups and across three different geographical locations (R. H. Horner et al., 2005).

CHAPTER 4: RESULTS

Reliability and Procedural Fidelity

A second observer evaluated interobserver agreement (IOA) and procedural fidelity data for data across all phases and target participants. IOA data were collected for 32.5% of pre-baseline (PB) and baseline plus book club (B+BC), and 32% of intervention data. For literal comprehension responses in PB and B+BC, IOA was a mean of 95.2% (range = 85.7% - 100%) during pre-instruction and 87.8% during book club (range = 71.4% - 100%). IOA for literal comprehension responses during intervention was a mean of 95.2% (range = 85.7% - 100%) during pre-instruction and 92.9% during book club (range =57.1% - 100%). For IOA below 90%, discrepancies were discussed.

Procedural fidelity data were collected for 32.5% of PB and B+BC, and 32% of intervention data. For PB and B+BC, procedural fidelity was a mean of 100%. For intervention, procedural fidelity was a mean of 98.9% (range = 93% - 100%).

Target Participant Data

Across PB, B+BC, and intervention phases, target participants were asked seven comprehension questions (i.e., four sequencing responses and three multiple choice responses) immediately following an adapted novel read-aloud (i.e., *Hunger Games, Catching Fire*). All responses were represented by a picture and a text-to-speech description of the picture. They also were asked to generalize these responses to the book club setting with their general education peers. Target participants were then given the

opportunity to respond to five discussion questions in the book club setting.

Results for Question 1: What is the effect of using systematic and explicit instruction with a shared story using grade-aligned text, formatted on an iPad2® (pre-instruction) on target participants' ability to answer comprehension questions about the text? Participants earned one point for every correct response to the shared story comprehension questions, for a possible total of seven points per session. All participant data increased in the number of correct responses to comprehension questions from baseline phases (i.e., PB and B+BC) to intervention. Target participant performance on comprehension questions are depicted in Figure 2.

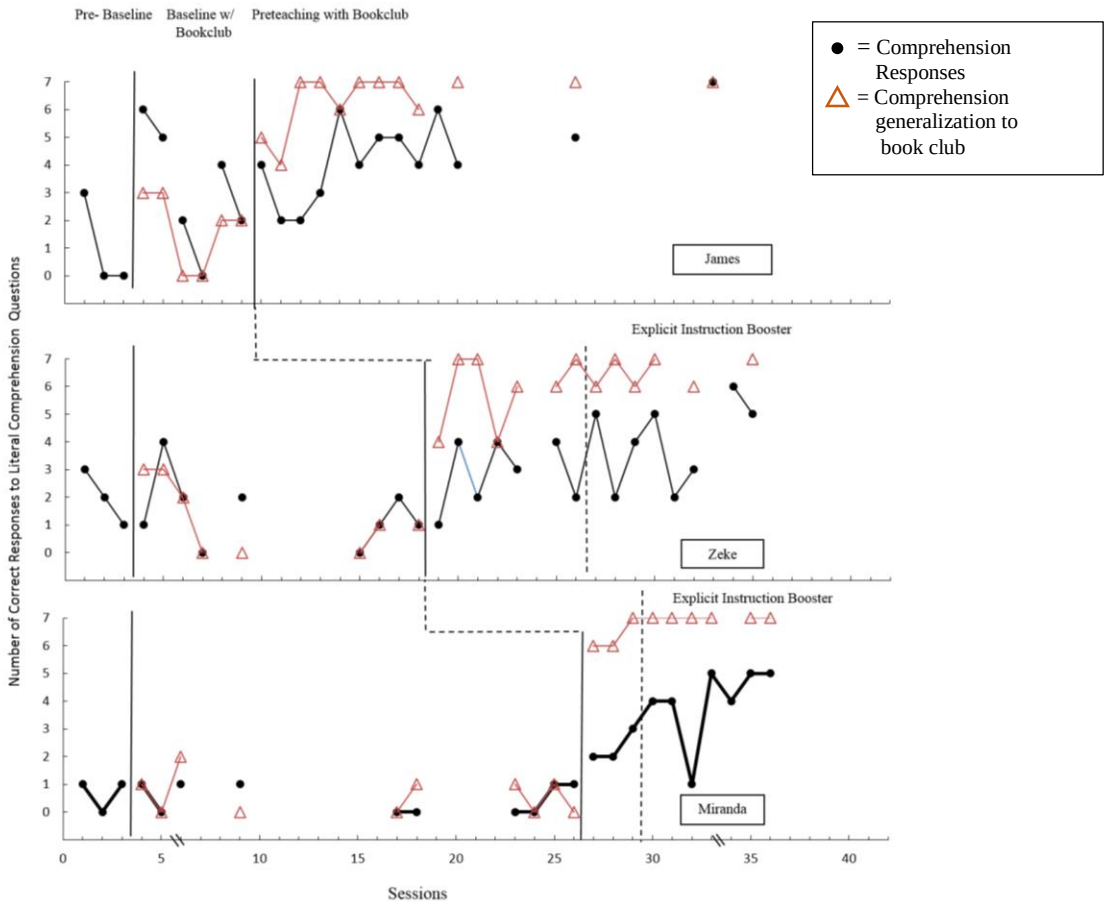

Figure 2. Total correct comprehension responses made by target participants. Open triangles denote generalization of responses to the book club setting.

James. James's data demonstrated an increase in correct responding to comprehension questions in intervention (*m* = 4.4, range =2-7) as compared to PB (*m* = 1, range = 0-3) and B+BC (*m* = 3.16, range = 0-6). During B+BC, he scored a 6 for one session and a 5 for one session, causing his level to briefly increase but then immediately drop back down to a score of 2. James's baseline responding ended at a low level, though his overall performance was variable.

During intervention, James's data demonstrated an initial drop in responding (i.e., total of 2 responses correct for the second and third sessions) as evidenced by a decrease in level and trend from baseline to intervention. This initial drop in correct responding was immediately followed by a gradual increase that fluctuated between 4 and 6 correct responses for the remainder of the study. Lower performance data in intervention demonstrated some overlap with baseline data. James attained 6 or more correct responses during three sessions in intervention, thereby meeting the mastery criterion for this dependent variable.

Zeke. Zeke's data demonstrated an increase in correct responding to comprehension questions in intervention (*m* = 6.2, range =4-7) as compared to PB (*m* = 2, range = 1-3) and B+BC (*m* = 1.4, range = 0-4). During baseline, his data demonstrated low but variable responding to the comprehension questions, with only one high score of 4.

During intervention, Zeke's data demonstrated a jump in level that occurred by the second intervention session. His performance did not demonstrate an immediacy of effect, however, as his initial intervention score (i.e., 1) matched his last score in baseline. Zeke demonstrated an overall increasing trend, with highly variable correct responding

across the intervention phase and considerable overlap with baseline data. His performance further improved when the explicit instruction booster was implemented, but he did not meet the mastery criterion.

Miranda. Miranda's data demonstrated increased correct responding to comprehension questions in intervention (*m* = 3.5, range = 1-5) as compared to PB (*m* = .67, range = 0-1) and B+BC (*m* = .5, range = 0-1). Across both baseline phases, her data demonstrated low and slightly variable correct responding with a flat trend, ranging between zero and one correct responses.

During intervention, Miranda's performance immediately rose above baseline levels, with a jump in responding evident by session three of intervention. With the exception of session 6, Miranda's performance demonstrated a steadily increasing trend across intervention, with no overlap in baseline data. She attained her highest level of performance (i.e., 5 correct responses) after the explicit instruction booster was implemented, but she did not meet the mastery criterion.

Results for Question 2: What is the effect of pre-instruction on generalization of correct comprehension responding during book club discussions by target participants? Data for all target participants demonstrated an immediacy of effect of the intervention on generalization of correct responding during book club discussions, as evidenced by an initial increase in correct generalized responses from baseline (i.e., B+BC) to intervention, followed by an increasing trend of responding. Target participant performance on comprehension questions are depicted in Figure 2.

James. James's data demonstrated an increase in level and trend for responses to generalization questions during book club, with an immediacy of effect. During B+BC,

his scores were low but variable (*m* = 2, range =0-3). In intervention, James's performance demonstrated an immediate jump in level, from a score of 2 in B+BC to 5 in intervention. He maintained a high, flat trend with a slightly variable performance beginning in the third session (*m* = 6.4, range =4-7), meeting the mastery criterion by the fourth session.

Zeke. Zeke's data demonstrated an increase in level and trend for responses to generalization questions during book club, with an immediacy of effect. During B+BC, his scores were low but variable (*m* = 1.25, range =0-3). In intervention, Zeke demonstrated an immediate jump in level, from a score of 1 in B+BC to a score of 4 in intervention, with an increasing trend across intervention. He maintained a high, flat trend with a slightly variable performance beginning in the second session (*m* = 6.2, range =4-7), meeting the mastery criterion by the third session.

Miranda. Miranda's data demonstrated an increase in level and trend for responses to generalization questions during book club, with an immediacy of effect. During B+BC, her scores were low and slightly variable (*m* = .56, range =0-2). In intervention, Miranda demonstrated an immediate jump in level, from a score of 0 in B+BC to a score of 6 in intervention She maintained a high, stable trend across intervention (*m* = 6.8, range =6-7), meeting the mastery criterion by the second session.

Results for Question 3: What is the effect of pre-instruction on total discussion contributions during book club discussions by target participants?

Participants earned 1 point for each off-topic contribution, 2 points for each on-topic but not original contribution (repetition or reiteration of a previous comment or question), and 3 points for each original, on-topic contribution. Contribution points were tallied for

each session. All target participants increased their number of discussion contribution points during book club discussions in intervention as compared to baseline (i.e., B+BC). Target participant performance on discussion contributions are depicted in Figure 3.

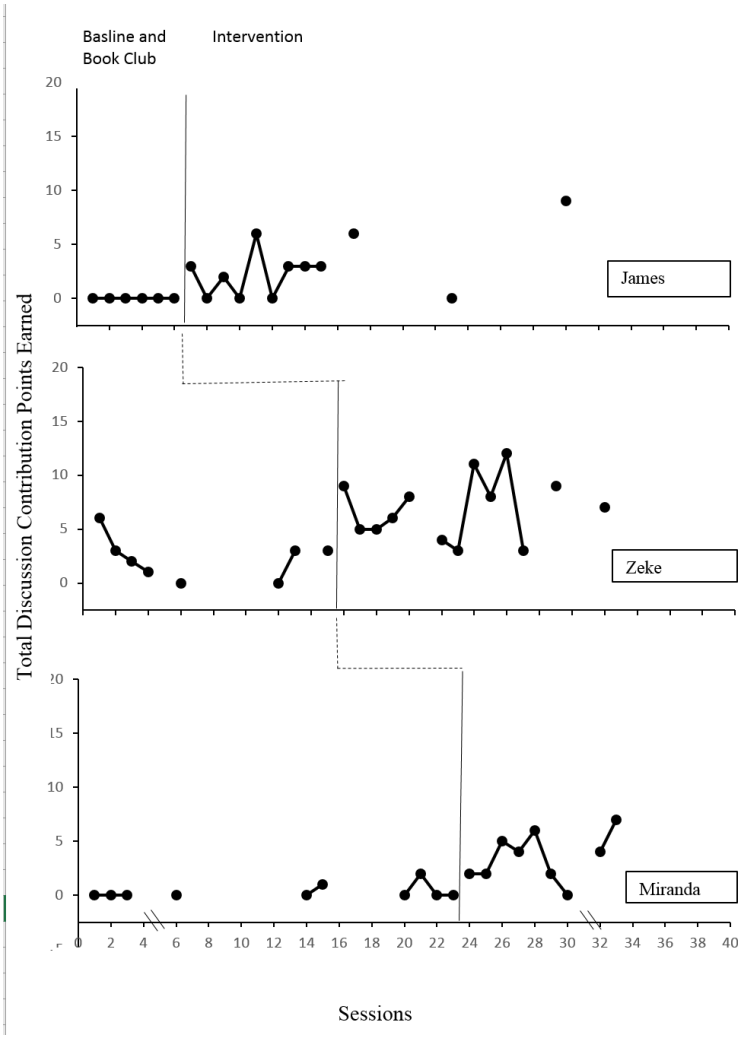

Figure 3: Total discussion contribution points earned by target participants.

James. James's data increased in discussion contribution points during book club, with an immediacy of effect from baseline to intervention. James's performance during B+BC was low stable, with a flat trend (m = 0, range =0). In intervention, James's performance demonstrated a jump in level, from a score of 0 in B+BC to 3 in

intervention. His discussion contributions remained variable with an overall increasing trend (*m* = 2.9, range =0-9).

Zeke. Zeke's data increased in discussion contribution points during book club, with an immediacy of effect from baseline to intervention. Zeke's performance during B+BC was low but variable (*m* = 2, range =0-6). During the first B+BC session, Zeke earned a relatively high number of contribution points (i.e., 6), followed by a range of 0-3 contribution points per session. In intervention, Zeke's performance demonstrated a jump in level, from a score of 3 in B+BC to 9 in intervention. His discussion contributions remained variable with an overall increasing trend (*m* = 6.9, range = 3-12).

Miranda. Miranda's data increased in discussion contribution points during book club, with an immediacy of effect from baseline to intervention. Her performance during B+BC was low and slightly variable, with a flat trend (*m* = 0, range =0-1). In intervention, Miranda's performance demonstrated an immediate but small jump in level, from a score of 0 in B+BC to 2 in intervention, with a larger jump to 5 contribution points by session 3. Her discussion contributions remained variable with an overall increasing trend (*m* = 3.6, range =0-7).

Results for Question 4: What is the effect of the inclusive book club experience on total discussion contributions made by peers? Discussion contributions during book club were tracked for one peer per group. Results indicated all general education peers responded more than once during each book club session. Ann earned an average of 9.29 contribution points during B+BC (range = 3-15), while she earned an average of 9.33 contribution points during intervention (range = 6-12). Daniel earned an average of 11.88 contribution points during B+BC (range = 6-20), and he increased to an

average of 15 contribution points during intervention (range = 12-18). Nate earned an average of 8.5 contribution points during B+BC (range = 6-12), and he increased to an average of 16.5 contributions during intervention (range = 15-18).

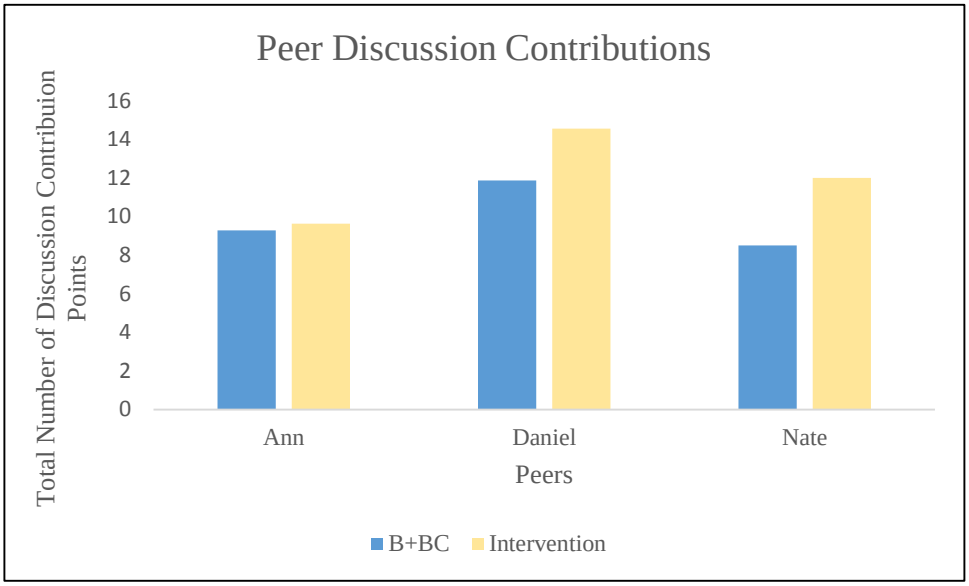

Figure 4. Total discussion contribution points earned by peers.

Results for Question 5: What are the perceptions of target participants, peers, and educators regarding the intervention? All target participants and peers, as well as two special educators completed a social validity questionnaire. The participant and peer questionnaires were administered by one of the special educators. All questionnaires were distributed after the third participant completed the study. Questionnaire completion was voluntary.

Target participant/peer questionnaire. All target participants and peers completed an identical questionnaire, adapted from the form used by Jimenez et al. (2012). The student questionnaire consisted of five questions regarding their opinions about their experience in this book club and the importance of discussing books together. The response options were written specific to the question, but consistent with Jimenez et

al., response options were assigned values similar to a 4-point Likert scale (i.e., 4 = strongly agree, 1 = strongly disagree). All target participants agreed or strongly agreed to all questions. Table 3 presents target participant ratings for each question. Peer ratings ranged from agreed to strongly agreed on questions 2, 3, and 4; however, peer ratings were lower for questions 1 and 5 (i.e., How did you feel about spending time in your book club? and Would you like to continue with your book club?). Table 4 presents peer ratings for each question.

Table 3: Social validity responses – target participants

Question	Target Participant	Rating
1. How did you feel about spending time in your book club?	James	1
	Zeke	4
	Miranda	4
2. How important do you think it is to discuss books together?	James	4
	Zeke	4
	Miranda	4
3. How comfortable did you feel participating in the book club?	James	2
	Zeke	4
	Miranda	4
4. Do you think you learned anything from the other group members?	James	1
	Zeke	4
	Miranda	4
5. Would you like to continue to meet with your book club?	James	1
	Zeke	4
	Miranda	4

Table 4: Social validity responses - peers

Question	Target Participant	Rating
1. How did you feel about spending time in your book club?	Ann	4
	Daniel	4
	Nate	4
	Rachel	4
2. How important do you think it is to discuss books together?	Ann	3
	Daniel	4
	Nate	3
	Rachel	4
3. How comfortable did you feel participating in the book club?	Ann	4
	Daniel	4
	Nate	3
	Rachel	3
4. Do you think you learned anything from the other group members?	Ann	3
	Daniel	4
	Nate	2
	Rachel	2
5. Would you like to continue to meet with your book club?	Ann	3
	Daniel	3
	Nate	2
	Rachel	3

Educator questionnaire. Two special educators, who served the target participants, completed the social validity questionnaire. One of the educators, Ms. Peters, had observed some book clubs and pre-instruction sessions. Both educators had seen the materials used in the study. The educator questionnaire consisted of five statements regarding their opinions about literacy, peer interaction, and technology in educating their students with disabilities. The response options were assigned values

along a 4-point Likert scale (i.e., 4 = strongly agree, 1 = strongly disagree). Both educators agreed or strongly agreed to all questions. Table 5 presents educator ratings for each question.

Table 5: Social validity responses - educators

Question	Educator	Rating
1. It is important to provide students with disabilities access to literature aligned with the general curriculum.	Ms. Miller	4
	Ms. Peters	3
2. There is value in using an iPad in instructional applications.	Ms. Miller	4
	Ms. Peters	3
3. It is important to provide opportunities for students with disabilities to engage in social interaction with their same-aged peers.	Ms. Miller	4
	Ms. Peters	4
4. Book clubs with general education peers are appropriate ways to teach students with disabilities to answer higher-level questions about a book.	Ms. Miller	4
	Ms. Peters	3
5. I will strive to use book clubs in the future to facilitate discussion between peers with and without disabilities.	Ms. Miller	4
	Ms. Peters	3

CHAPTER 5: DISCUSSION

The purpose of this study was to examine the effect of using systematic and explicit instruction in a shared story on comprehension and discussion during book club for students with SD. Using a multiple probe across participants design, students with SD received the pre-instruction intervention, answered literal comprehension questions, and then had opportunities to generalize comprehension responses and generate new discussion contributions in a book club with general education peers. The findings for each research questions are presented, followed by a discussion of study contributions, limitations, recommendations for future research, and implications for practice.

Question 1: What is the effect of the pre-instruction intervention on target participants' ability to answer comprehension questions about the text?

Based on the study's results, a functional relation was found between the pre-instruction intervention with a read-aloud of grade-aligned text and target student comprehension responses; however, only James met the mastery criterion of 6 correct responses for two sessions. All target participants increased their average number of correct responses in intervention as compared to baseline, and all participant responses demonstrated an increase in level by the second or third session in intervention. All participants' data also demonstrated an increasing trend across baseline, providing further evidence for the efficacy of the intervention on their comprehension responses during the read-aloud of the text.

James's performance, compared to the other two target participants, exhibited a more tenuous relationship between the intervention and his performance on comprehension questions. His high scores on the first two days of B+BC were outliers compared to his performance in all other baseline sessions (PB and B+BC collectively). Given his considerably lower baseline scores before and after these outliers, the higher scores seemed to have occurred by chance and were the only two baseline sessions in which he responded correctly for all sequencing questions. Further comparison of James's performance on B+BC sessions 1 and 2 (which correspond respectively to Chapters 1 and 2 of *Catching Fire*) to Zeke's and Miranda's performances on these chapters indicate that the adapted text or questions were not substantially different to materials for the other chapters in the study, as both Zeke and Miranda scored lower than James on these first two chapters. It is possible that James had more prior knowledge of the content presented on these chapters than did the other participants. Because this did not happen on more than two occasions during baseline, however, James did not appear to have solid acquisition of this skill prior to the intervention phase. Similarly, James's dip in responding early in intervention may be explained through subjective observation. After first receiving the modified system of least prompts for error correction, James seemed to be unsure of the correct answer and opted to look back in the text before answering. After a few sessions, he began to answer more decisively without looking back. On all errors, James answered correctly following the first reread prompt.

Zeke's and Miranda's data increased across intervention, and they made additional gains once the explicit instruction booster was implemented. The booster, in which the experimenter highlighted key events on each page of e-text, seemed to increase

these participants' attention to the text and clarify character-event relationships. Miranda, however, was already demonstrating an increasing trend in correct responding prior to implementation of the booster instruction; therefore, the extent to which the booster instruction influenced her performance is not clear. Given the emerging evidence of the effectiveness of explicit instruction for teaching students with SD (e.g., Hicks et al., 2011; Ganz & Flores, 2009), as well as the relatively small investment of time required for the explicit instruction booster in this study, it may be beneficial for teachers to consider explicit instruction wherever needed to increase content clarity for students with SD.

Many of the target students' incorrect responses during intervention were due to errors in sequencing. It is possible that this type of question, which had four parts and relied on pictorial representations of events in the text, may require a more targeted instructional strategy. For example, students with SD may benefit from more explicit instruction of sequencing events, including emphasizing vocabulary denoting the passage of time such as *first*, *next*, *then*, and *finally* (L. Wood et al., 2014). In the present study, sequencing questions required students to recall events across the entire text. Rather than focusing on memory of these events, students with SD may better acquire meaning of event sequencing by providing a sequencing GO prior to reading the text and explicitly teaching them to complete the GO as they read. Using a GO as they read also may increase students' active engagement with, and ultimately comprehension of, the text (Berkeley et al., 2010; Rasinski & Padak, 2008; L. Wood et al., 2014).

Another consideration is that the text, which was adapted, also conveyed complex relationships and symbolism requiring considerable prior knowledge of events in the

world and of other similar genres and literary themes (e.g., dystopian societies, war, government oppression). Even though it is important for students with SD to engage in all varieties of literature, more complex texts may require multiple readings (Fisher & Frey, 2015), as well as activities to expand and activate prior knowledge (Rasinski & Padak, 2008) and to develop social maturity regarding the complexities of humanity (Lee & Goldman, 2015). In fact, literacy experts are currently advocating that literacy instruction for all students include multiple readings with a specific goal and accompanying activities for attaining deeper and deeper understanding of the text (Brown & Kappes, 2012; Fisher & Frey, 2015).

Arrangement of the questions also may have impacted target student performance on literal comprehension questions. Several studies on literacy and literature access for students with SD provided comprehension questions at the end of each corresponding page of the text (e.g., Mims et al., 2012; Spooner et al., 2014, 2015). Given the difficulties in memory for many students with SD, such an arrangement may be preferable to better enable these students to demonstrate what they know about the text. Other strategies also may be useful that teach students to look back in the text for answers rather than having to rely on memory of details. The modified system of least prompts was designed to teach students to look back in the text, but when they did, the design of the present study required that their incorrect or non-response be counted incorrect (e.g. no points). In almost all cases, target participants were able to provide the correct response following one or two rereads of the text; they rarely needed to be directly provided the correct answer. This finding is consistent with those of Hudson and Browder (2014), who gave participants credit for prompted correct responses.

The data also indicate that peer discussions during book club were not enough to increase target students' comprehension of the text. The B+BC phase included peer discussions but no systematic and explicit instruction. Target students' overall correct responding to comprehension did not change from PB to B+BC, but it did increase with the addition of systematic instruction during the intervention phase. In contrast to most students, who are able to demonstrate enhanced comprehension of text through literature discussion groups (e.g., Henderson & Buskist, 2011; Pittman & Honchell, 2014), the target students with SD in the present study required systematic and explicit instruction to increase their comprehension of the text.

In terms of accessibility of materials, all target students were able to access the grade-aligned text via the use of adapted, read-alouds digitally formatted on the iPad2®. The text-to-speech function enabled students to engage with the text more independently (Coyne, et al, 2010; Douglas et al., 2012). All target students were able to press the icon to sound the text-to-speech for each page, and they turned the page independently and at appropriate times in the story. Additionally, the iPad2® and the GoBook© app conveniently housed the text for two novels (i.e., *The Hunger Games* and *Catching Fire*), as well as the sequencing and multiple choice questions for each chapter. These materials were presented in order, eliminating shuffling of materials for the read-aloud and pre-instruction intervention (Douglas et al, 2012; Kagohara et al, 2013; Spooner et al., 2014, 2015).

Question 2: What is the effect of pre-instruction on generalization of correct comprehension responding during book club discussions by target participants?

In the present study, target participants were able to generalize comprehension responses to the book club setting. Their performance indicated a functional relation between the intervention and generalization of correct responses during book club meetings. They were furthermore able to meet the mastery criterion within the first few book club sessions during intervention.

These results are consistent with research on generalization that suggests most students with SD require explicit and systematic teaching for generalization of content (Hicks et al., 2011; Spooner et al., 2015; Stokes & Baer, 1977). In addition, Browder, Spooner, and Meyer (2011) recommended preparing students with SD to participate in collaborative learning groups through pre-teaching the text. In the present study, the text was effectively pre-taught through the use of the modified system of least prompts, which guided students back to the text to discover meaning. Their learning during the pre-instruction intervention generalized to the book club setting. Although it is possible that students merely memorized the comprehension answers, this risk was minimized by the timing of the book club. Target students had a natural break between the pre-instruction intervention and the book club while waiting for the next school-day period, which is when the peers were available to meet for the book club.

Question 3: What is the effect of pre-instruction on total discussion contributions during book club discussions by target participants?

Following pre-instruction, all target students demonstrated an increase in the quality and/or quantity of discussion contributions during book club. For James and

Miranda, the effect was immediate but gradually increasing across intervention. They were both hesitant to talk during baseline book club sessions (i.e., B+BC), and rarely provided eye contact with their peers in the group. During intervention, they began to turn toward the group members and answer questions when they were directly posed to them. James even began to contribute to the initial story-mapping discussion at the beginning of the session, and the interventionist incidentally heard him discussion the school basketball games with a peer prior to the start of the book club meeting. Zeke, on the other hand, was more talkative across baseline and intervention. The data and interventionist observations revealed that his conversations became somewhat more on-topic. He had impaired speech which made it more difficult to understand him; however, he had go-to topics with which he was most familiar (e.g., talking about his truck, snow, going in the woods). During baseline, this seemed to throw him off because some of the discussion questions in the present study referred to President Snow, a prominent story character, or events occurring in the woods. He therefore never provided an on-topic discussion contribution during baseline, though he was not afraid to share his thoughts. In contrast, he began several discussion contributions on-topic during intervention.

For all students, it is possible that pre-instruction improved their literal comprehension, which in turn increased their knowledge of the text during book club discussions. This explanation would be consistent with findings from reading experts, which indicate that a person must be able to understand the text on a literal level before he or she can discuss it in more depth (e.g, Fisher & Frey, 2015; Rasinski & Padak, 2008; L. Wood et al., 2014). It also is possible that, by engaging in explicit think-alouds with the interventionist in response to practice discussion questions during the pre-instruction

intervention, they became more comfortable and better understood what was being asked of them during the book club discussions. Explicit instruction is intended to serve this very purpose of clearly demonstrating, guiding, and practicing skills and academic expectations (e.g., Blair, Rupley, & Nichols, 2007; Engelmann & Carnine, 1991; Rosenshine, 1995).

Finally, the elements of the questions themselves should be considered in view of the results of the present study. The discussion questions ranged in type from inferential to opinions about the events in the book. Questions that target students were most willing to answer involved those that asked them to refer to their own life experiences as they compared their experiences to those of the text's characters. Because comprehension involves actively interpreting the text through the lens of prior knowledge (Harvey & Goodvis, 2000; Rasinski & Padak, 2008), these types of questions that relate directly to the student's life experiences likely involve more familiar prior knowledge than do questions about world events (Lee & Goldman, 2015).

Question 4: What is the effect of the inclusive book club experience on total discussion contributions made by peers?

In the present study, two peers and one target participant comprised a book club group. The interventionist scored contribution responses for one peer per book club session. The results indicate that two of the three peers, Daniel and Nate, increased in their total peer discussion contribution points across book club sessions in intervention as compared to book club sessions in B+BC. Ann, however, did not demonstrate any difference in discussion contribution points between B+BC and intervention. Overall, the effect was not replicated sufficiently to be considered a functional relation. The results

do, however, demonstrate that all peers were willing to participate in inclusive book club with students with SD, with the potential for growth for some peers.

During the book club, the interventionist gave each peer and target participant an opportunity to answer at least one discussion question first before opening the question up to the other group members; this format frequently resulted in peers and target participants being given more than one opportunity to respond first. All peer group members answered questions when they were given the first opportunity. Daniel and Nate often added extra contributions to follow up on other peer or target participant comments. Nate demonstrated the most growth. He was quiet and did not often have a response during baseline; however, after observing his fellow peer answer questions, he began using some of her responses in subsequent book club sessions. By intervention, Nate was providing his own answers and even following up with other group members' comments. Daniel seemed the most comfortable during book club sessions, as he frequently added follow-up comments and even explored tangential comments (i.e., scored as off-topic contributions). Ann did follow up when target participants had the opportunity to respond, probably because she felt an obligation to respond when target participants chose to not respond to questions; however, Ann demonstrated minimal cross-conversation with peers. These results are representative of the wide range of personalities and conversational styles that may be found within any given discussion group, and therefore provide insight into what peer contributions might look like in inclusive discussion groups.

Question 5: What are the perceptions of target participants, peers, and educators regarding the intervention?

Examining the social validity of an intervention is a critical component of developing research-based practices that will address socially significant needs in the classroom (Wolf, 1978), and the social validity assessment is an indicator for high-quality research studies (R. H. Horner et al., 2005). The present study examined the social validity of the intervention and of inclusive book clubs through questionnaires disseminated to the target participants, peer participants, and two special educators at the school in which the study took place.

All target participants rated social validity questionnaire items favorably, indicating their enjoyment of the book club and interacting with the peers in the study. Their responses also indicated they saw value in participating in the book club and were able to learn from their peers. Peer responses on the questionnaire were similarly favorable, with the exception of time required to spend in the book club and their willingness to participate again in the future. These responses may have been influenced by the timing of the book clubs, which were held during their free time that is built in during lunch. During this time, students at the school are given extra time during lunch to participate in clubs, tutoring, or other ways they wish to spend their time. Given the busy schedules of the peers, and to prevent their missing academic instruction, the extra lunch time was the only time book clubs could feasibly be scheduled. The peers in this study, therefore, may have preferred to spend this time meeting their other numerous school obligations. Anecdotally, one peer (i.e., Daniel) commented “that’s neat” during a book club with James when James got all of the literal comprehension questions correct. These

results indicate general education peers might be supportive of inclusive book clubs or other discussion groups, and they may benefit from them by perceiving abilities rather than just disabilities in students with SD.

The special educators who completed the social validity questionnaire were very positive about the potential for the book clubs, as well as for the use of technology to deliver academic instruction. Ms. Peters commented on the importance of social interaction with peers that the book clubs facilitated for her students. Both teachers were hesitant about continuing the book club, mainly due to tight schedules and high academic demands being placed on all students.

Contributions

The results of this study indicate the pre-instruction intervention during grade-aligned read-alouds, using the evidence-based practices of explicit and systematic instruction, was effective for high school students with SD. They were able to not only access and comprehend literature from the general curriculum, but they also were able to transfer and extend their understanding to higher-order comprehension (e.g., make inferences, relate content to own experiences) through book club discussion groups with peers without disabilities. Given the importance of text comprehension, including higher-order comprehension (CCSS, 2010; Keene & Zimmerman, 2007), this study extends the research on effective methods for teaching comprehension skills for students with SD. As in previous studies (e.g., Mims et al., 2012; Spooner et al., 2015), a modified system of least prompts was used to teach students to refer to the text for answers to comprehension questions. The study also adds to the growing literature base for using explicit instruction to teach students with SD (Flores & Ganz, 2009; Hicks et al., 2011; Spooner et al., 2015;

C. L. Wood et al., 2016), in this case teaching students to think about text more deeply about and to make connections with text (Harvey & Goudvis, 2000; Keene & Zimmerman, 2007; Rasinski & Padak, 2008).

The findings add to the literature supporting read-alouds as an evidence-based practice for students with SD to access and comprehend grade-aligned literature (Hudson & Test, 2011), extending the use of read-alouds to high school students. Even though the focus of instruction for secondary students with SD becomes oriented toward skills needed for post-secondary independence (e.g., life skills, employment), the use of read-alouds to facilitate access to discussion groups with general education peers. Being able to interact with peers and discuss a topic with them are valuable skills for navigating post-school living in leisure and employment settings. Book clubs also are potential leisure activities in which many adults choose to participate. This study proposes a model through which students with SD may participate in book clubs, as well.

The efficacy of portable technology to deliver read-alouds for students with SD is further supported through this study. Previous research using iPads with read-alouds (Spooner et al., 2014, 2015) indicated such technology was a useful way to present and engage students with text. Particularly for high school-aged students, iPads and other portable technology may be less stigmatizing than traditional supportive instructional materials and may be suitable for inclusive settings (Douglas et al., 2012; Kagohara et al., 2013).

Through this study, the potential of inclusive book clubs is established as a means through which students with SD, after receiving systematic and explicit pre-instruction, can participate in the general curriculum and access general curriculum strategies of

discussion with students who are not struggling readers (Pennell, 2014; Pittman & Honchell, 2014; Vygotsky, 1978). Literature discussion groups, including book clubs, are typically used in general education to promote deeper comprehension of literature. These types of interventions also may increase opportunities for students with SD to participate more meaningfully in discussions with typically-developing peers and to take advantage of the benefits of book club discussion groups, including models for appropriate responding, expanded understanding of the text, and ultimately increased enjoyment of literature (Bui & Fegan, 2013; Pittman & Honchell, 2014).

Through this intervention, students with and without disabilities also were able to engage in a common small group academic instruction through a book club format. Given the documented benefits of inclusive instructional settings (Alquirani & Gut, 2012; Ryndak, 2014), teachers of students with SD may be able to use the present study's intervention to facilitate not only academic instruction but also social interactions with peers without disabilities. In addition to increased social interaction with students with SD, all book club peers increased in their number of book club contributions, which is a recommended practice for improving higher-order comprehension skills (NLP, 2000). Consistent with previous research (Carter et al., 2010; Dugan et al., 1995; Kamps et al, 1995), the results of this study indicate peers may demonstrate improved skills when engaging in inclusive academic activities.

Limitations

In addition to the delimitations presented in Chapter 1, several limitations to the present study must be considered when examining the procedures and results. First, the present study used pictures to represent concepts, particularly those that are abstract (e.g.,

escaping to the woods) or involve complex or very specific actions (e.g., Katniss, Peeta, and Haymitch, walking through the village). These were particularly problematic for sequencing responses. The target participants were guided to listen to each response picture's explanation prior to choosing an answer, but participants sometimes needed to sound the response multiple times in order to remember for what concept or event each picture stood.

A second limitation involved the researcher-made materials for the study. The adapted text and corresponding questions were created specifically for the present study. Although they were verified by a literacy expert for content validity, there was no way to ensure they were created at the appropriate reading or comprehension level for each participant. Lexile levels take into account superficial variables of text, including sentence length and vocabulary, but they cannot track text complexity in terms of symbolism, narrative structure (e.g., flashbacks), and figurative language (Lee & Goldman, 2015). The two texts used in the present study contained considerable amounts of flashbacks, symbolism, and other complexities that were unaccounted for in the Lexile reading or the content validation. These factors may, to some extent, have impacted the results of the study and should be considered in developing materials for future research or practice.

A related limitation also involves the materials used in the present study. The adaptations, development of questions, and iPad programming for each chapter required a substantial amount of time. Each chapter adaptation took approximately 30 minutes, and question generation took approximately 15 minutes per chapter. Additionally, programming the GoBook© app in the iPad2® took approximately 1 hour per chapter,

including importing the adapted text from a word processing file, setting up text-to-speech for each page of text, setting up or copy-and-pasting structures for sequencing and multiple choice questions, and locating pictures for each response option. One benefit to digital materials is that, once created, they can be saved and transported to other iPads or used in the future.

A fourth limitation is the use of a researcher-implemented intervention. Because the intervention in the present study is intended to meet a need for students with SD, teachers or other responsible staff members at the school need to be able to implement the intervention with fidelity. Because the researcher implemented the intervention, it is not known the extent to which school staff (preferably a teacher) will be able to feasibly carry out the various components of this intervention.

Finally, the researcher facilitated the book club discussion in the present study, thereby limiting independence for students with SD and their peers. Research indicates that self-monitoring (Hudson & Browder, 2014) and peer training strategies (Carter et al., 2005; Hudson & Browder, 2014) may be beneficial to increasing independence in book club discussions.

Recommendations for Future Research

In the present study, target students demonstrated limited growth on literal comprehension measures, particularly the sequencing format of literal comprehension. Future research may need to look at alternative, possibly more explicit ways to teach sequencing that are different from regular literal comprehension questions. Given deficits in memory for many students with SD, alternative ways to measure growth on literal comprehension measure also may need to be explored that do not require memorizing

minute details of text. Hudson and Browder (2014), for example, used prompted correct responses as the dependent variable because the first two prompts did not reveal the answer to the comprehension questions. Instead, the first prompts directed the students back to the text, where they proceeded to glean the correct answers on their own. The practice of referring back to the text for information may therefore be a viable way to measure student comprehension for students with SD.

An expanded use of technology to include students with SD who use AAC also is needed (Hughes et al., 2011). The present study required target participants to have verbal ability in order to control for that variable. To develop LGDs that are more inclusive of all students, portable technology and communication apps may be useful for providing a means for students who are non-vocal-verbal to meaningfully participate in group discussions. It is likely that these students will need pre-instruction for learning to navigate the technology device, as well as to practice formulating responses in conversation (Ayres et al., 2013; Calculator & Black, 2009).

Target students in the present study demonstrated modest but clear growth in discussion contributions during book club sessions; however, future research should continue to examine strategies for optimizing student participation in group discussions that lead to higher level comprehension of the text. Just as the present study provided systematic instruction during the pre-instruction phase and in the book club setting, it may be beneficial for students to receive the explicit instruction during book club as well as in the pre-instruction phase. Several studies have embedded instruction within the inclusive context. For example, researchers have taught peers without disabilities to use prompting systems to support students with SD while engaging with them in inclusive

settings (Carter et al., 2005; Haring & Breen, 1992; Hughes et al., 2011, 2013). In teaching academic content to students with SD, researchers have taught teachers (Courtade et al., 2013) and even peers (Jameson et al., 2008; Jimenez et al., 2012) to use systematic instruction to support students with SD in the general education. This evidence indicates teaching in the generalization setting may provide more precise practice and thus help the skill generalize better to the new environment than would the "train and hope" approach (p. 351, Stokes & Baer, 1977).

Although this study examined strategies for increasing interactions on academic skills in an inclusive book club (i.e., students with SD and peers without disabilities), future research should examine this approach within a general education classroom (Ryndak, 2011; Ryndak et al., 2008-2009). One way to do this feasibly may be to increase student independence through the use of the Gradual Release of Responsibility Model (Pearson & Gallagher, 1983; Rasinski & Padak, 2008). Consistent with explicit instruction (Engelmann & Carnine, 1991), teachers start out modeling and guiding students in comprehension strategies, but they gradually hand over responsibility to students. Within this framework, peers could be gradually trained to implement book clubs or other LDGs within the classroom setting, thus freeing up teachers to supervise all groups and address specific needs as they arise (Dugan et al., 1995; Jimenez et al., 2012). A peer-mediated format, after appropriate teacher training and guidance, also could increase autonomy and buy-in from students with and without disabilities. For example, in a previous study, C. L. Wood, Kemp-Inman, Stevenson, and Spooner (2016) implemented peer-mediated book clubs. Within these groups, some students with SD eventually took turns with their peers in asking questions and, essentially, leading the

group. These types of peer-mediated strategies are promising for creating a more inclusive environment for students with SD, eliminating excessive adult oversight and better preparing students for independence as they work toward graduation and post-school living (Carter et al., 2011; Hughes et al., 2011, 2013; Miracle et al., 2001; Smith, Spooner, & Wood, 2013).

Implications for Practice

Students with SD can access and demonstrate comprehension of grade-aligned text through adapted read-alouds. Although the multiple probe design in this study limited the time available to work with students on a particular chapter, to further expand on students' comprehension, teachers should consider providing multiple rereads of a chapter with pre-instruction for several days prior to including their students in the book club (Brown & Kappes, 2012; Fisher & Frey, 2015).

Consistent with previous literature, this study demonstrates that systematic and explicit instruction made the difference in performance for students with SD during the read-aloud and during book club sessions. The results extend current work on explicit instruction, lending further support that this type of instruction can be effective in teaching students with SD. It will be important for educators to pair research-based practices such as systematic and explicit instruction with general education instructional strategies such as LGDs to make them more accessible for students with SD (Browder & Spooner, 2014).

Finally, results support the use of peers without disabilities as models for students with SD (Pittman & Honchell, 2014), particularly in the context of book club discussion groups. Given the increasingly busy schedule of high school students, it may be more

feasible to sustain a book club beyond a research study if the school provided time built in the day for all general and special education students to interact with each other in academic contexts; this would ideally be in inclusive classrooms or even in a central location such as the library, neither of which were available for the present study. Effective collaboration among general and special educators also is an important factor for setting up increased inclusive opportunities. Educators should consider the recommendations in the literature for facilitating effective inclusive environments (Alquirani & Gut, 2012).

Conclusion

Comprehending text in a way that informs one's life and adds to the enjoyment of literature can be a goal of literacy instruction for students with and without disabilities. The present study sought to teach students with SD comprehend text that other students their age are reading and even watching in movie format (i.e., *The Hunger Games*; *Catching Fire* by Suzanne Collins). The study also examined the effects of instruction on their ability to discuss the text with their general education peers. Discussion questions were developed to guide the group toward deeper understanding of the text, discover how the text might relate to their own world, and how they are personally impacted by the text. Such higher-level comprehension currently is a primary focus in literature and other academic content instruction for all students (CCSS, NGA & CCSSO, 2010), with the understanding that higher level comprehension can lead to better post-school outcomes (Lipman, 1998; Pennell, 2014).

In the present study, students with SD demonstrated increased literal comprehension and discussion contributions. Two of the three peers also demonstrated

increased discussion contributions. The ability to comprehend text and discuss it with peers is the first step to moving toward a deeper connection and understanding of literature. The book club also can serve as a time for students with and without disabilities to interact socially.

The portable technology used in the present study was beneficial in increasing accessibility and independence in reading grade-aligned text. Target students were able to quickly learn to operate the e-book features, and they could use it during the book club to refer back to text when needed. The iPad2® and GoBook© app house multiple books and chapters in one device, including text and accompanying assessment materials. As previously noted in research (Kagohara et al, 2013; Spooner et al., 2014, 2015), portable technology such as the iPad has become an almost universally accepted and familiar way to access information, most people know how to operate it, and it is more cost-effective than traditional AAC or AT devices (Douglas et al., 2012).

Ultimately, strategies such as those in the present study have the potential to empower students with SD to better understand the world around them and to explore opportunities with greater independence in post-school employment, education, leisure, and independent living (Browder, Gibbs, et al., 2009; Keefe & Copeland, 2011). As these strategies are refined through continued research, including social validity measures to ensure interventions are truly meeting the needs of teachers and their students in today's classrooms, our students will benefit through not only increased access to general curriculum content and settings, but also enhanced comprehension of the content in a more personal, meaningful way.

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APPENDIX A: SELECT COMPREHENSION QUESTIONS

Literal Comprehension Questions and Correct Responses from Chapter 6, Catching Fire

Sequencing:

1) Katniss and Peeta attend an engagement party.
2) They travel back to district 12
3) They arrive at the Mayor's house.
4) Katniss sees the rebellions on TV

Comprehension:

1) What special symbol are people wearing at the engagement party? Mockingjay
2) What happens during the Harvest Festival? The town has a huge feast
3) Who are the *people from the* Districts fighting against?? The Peacekeepers

Discussion Questions from Chapter 6, Catching Fire

1) Katniss is relieved that she can stop pretending to love Peeta. How would you have felt; why?
2) Why do you think President Snow hosted the engagement party at his house?
3) What does the Mockingjay symbol mean to the people in the Districts? To Katniss? Why?
4) Do you think the people in the Districts began rebelling before or after Katniss and Peeta visited on the Victor's tour? Did their visit affect the people's actions?
5) Why does the Mayor's TV show announcements and videos that other people can't see on their TVs?

APPENDIX B: DATA FORM FOR PARTICIPANT COMPREHENSION RESPONSES DURING READ-ALOUD SESSIONS

SAMPLE

Participant: 1 (2) 3

Comprehension:
+ = correct
- = incorrect

Date	2/1	2/2		
Study Phase (PB, B+BC, IV, M)	B+BC	B+BC		
Chapter	1	2		
Sequencing Responses	- - - -	- - - -		
Literal Comprehension Responses	+ - -	- + -		

APPENDIX C: DATA FORM FOR PARTICIPANT COMPREHENSION RESPONSES AND DISCUSSION CONTRIBUTIONS DURING BOOK CLUB MEETINGS

SAMPLE

Participant: 1 (2) 3

Discussion Contribution Points:
1 = off topic/social comment or question)
2 = on-topic comment/question (but not original)
3 = original, on-topic comment

Comprehension:
+ = correct
- = incorrect/NR

Date	2/1	2/2		
Study Phase (PB, B+BC, IV, M)	B+BC	B+BC		
Chapter	1	2		
Sequencing Responses	+ - - -	- - - +		
Literal Comprehension Responses	+ - -	- + -		
Discussion Contributions: Target Participants	0	1 1		
Discussion Contributions: Peers	3 2 3 1	3 3 3 2 3		

APPENDIX D: SOCIAL VALIDITY QUESTIONNAIRES

Social Validity Questionnaire - Peer/Target Participant Form

Peer: _____ Participant: _____

Please mark the box that describes how you feel about each question:

1. How did you feel about spending time in your book club?

I didn't really like it.	It was okay, but I could be spending time on other classwork.	I liked it, but we mostly talked about things besides the book.	I really enjoyed talking about the book with the group.

2. How important do you think it is to discuss books together?

I don't think it is important.	Discussing books together is okay, but it did not make a difference on how much I usually learn from books.	It is more fun than just reading the book alone.	It is important because we can help each other as we learn about the book.

3. How comfortable did you feel participating in the book club?

I was very uncomfortable.	Not very comfortable, but I will keep trying.	Fairly comfortable; I got better at it the more I do it.	I was very comfortable, I knew exactly what to do.

4. Do you think you learned anything from the other group members?

No, they did not teach me anything.	A little bit, but I already knew most of what we discussed.	I was able to learn something during most book club meetings.	I learned a lot from other group members' perspectives.

5. Would you like to continue to meet with your book club?

No, it was not a good use of my time.	Maybe, I will think about it because I liked it sometimes.	Yes, I liked working with them.	Definitely, I learned a lot and made new friends.

Peer/Participant Questionnaire adapted from Jimenez, Browder, Spooner, & DiBiase (2012)

Social Validity Questionnaire – Educator Form

Please indicate your level of agreement with the statements below.

1. It is important to provide students with disabilities access to literature aligned with the general curriculum.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

2. There is value in using an iPad® in instructional applications.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

3. It is important to provide opportunities for students with disabilities to engage in social interaction with their same-aged peers.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

4. Book clubs with general education peers are appropriate ways to teach students with disabilities to answer higher-level discussion questions about a book.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

5. I will continue to use book clubs to facilitate discussion between peers with and without disabilities.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

Comments:

APPENDIX E: RELIABILITY AND PROCEDURAL FIDELITY CHECKLISTS

Baseline Fidelity/Interobserver Agreement Checklist

Date: _____ Participant ID: _____

Check the appropriate box to record your observations of the presence of all components of the shared story lesson.

Adapted Text/Graphic Organizer + = *Fully demonstrated* - = *Did not demonstrate*

<table>
<tr><td></td><td>Presented adapted text on iPad.</td><td colspan="5" rowspan="3">IOA
Comp. Responses
(+, -)</td></tr>
<tr><td></td><td>Reviewed difficult vocabulary with student (pointed to word in text and told what the word is/gets student to repeat word).</td></tr>
<tr><td></td><td>Experimenter read the text aloud.</td></tr>
<tr><td></td><td>Read sequencing comprehension question aloud and provided sequencing GO on iPad with corresponding pictures.</td><td>Sequ:</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Read aloud remaining comprehension questions.</td><td>Other comp:</td><td colspan="4"></td></tr>
<tr><td></td><td></td><td colspan="5">+ = correct response
- = incorrect response/no response</td></tr>
</table>

Baseline + Book Club Fidelity/Interobserver Agreement Checklist

Date: _____ **Participant ID:** _____

Check the appropriate box to record your observations of the presence of all components of the shared story lesson.

Read-Aloud Session + = *Fully demonstrated* - = *Did not demonstrate*

	Presented adapted text on iPad.	**IOA Comp. Responses (+, -)**				
	Reviewed difficult vocabulary with student (pointed to word in text and told what the word is/gets student to repeat word).					
	Experimenter read the text aloud.					
	Read sequencing comprehension question aloud and provided sequencing GO on iPad with corresponding pictures.	Sequ:				
	Read aloud remaining comprehension questions.	Other comp:				

Book Club Discussion + = *Fully demonstrated* - = *Did not demonstrate*

	Students are facing each other.	**IOA Comp. Responses (+. -)**					**IOA Participant Discussion Contributions (1, 2, 3 per contribution)**
	Group leader reviews guidelines and procedure.						
	Group leader reviews chapter using storymapping GO.	Sequ:					
	Group leader asks literal comprehension questions.	Other comp:					
	Each participant/peer has at least one opportunity to answer first.						
	Experimenter provides facilitating questions/comments as needed (e.g., "Do you agree?," "What do you think?")	+ = correct response - = incorrect response/no response					1 = off-topic/social comment/question 2 = on-topic comment/question (not original) 3 = original on-topic comment/question

Intervention Fidelity/Interobserver Agreement Checklist

Date: _____ **Participant ID:** _____

Check the appropriate box to record your observations of the presence of all components of the shared story lesson.

Adapted Text/Graphic Organizer + = *Fully demonstrated* - = *Did not demonstrate*

	Presented adapted text on iPad.	**IOA Comp. Responses (+, -)**
	Reviewed difficult vocabulary with student (points to word in text and tells what the word is/gets student to repeat word).	
	Used text-to-speech function on iPad to read the text aloud.	
	Read sequencing comprehension question aloud and provided sequencing GO on iPad with corresponding pictures.	Sequ:
	Used modified system of least prompts with fidelity to teach sequencing.	Other comp:
	Modeled one higher-order comprehension response with think-aloud.	+ = correct response - = incorrect response/no response
	Lead participant in one higher-order comprehension response with think-aloud, models if needed.	
	Read aloud remaining three higher-order comprehension questions, models correct response if needed.	

Book Club Discussion + = *Fully demonstrated* - = *Did not demonstrate*

	Students are facing each other.	**IOA Comp. Responses (+. -)**	**IOA Participant Discussion Contributions (1, 2, 3 per contribution)**
	Group leader reviews guidelines and procedure.		
	Group leader reviews chapter using storymapping GO.	Sequ:	
	Group leader asks literal comprehension questions.	Other comp:	
	Each participant/peer has at least one opportunity to answer discussion question first.		
	Experimenter provides facilitating questions/comments as needed (e.g., "Do you agree?," "What do you think?")	+ = correct response - = incorrect response/no response	1 = off-topic/social comment/question 2 = on-topic comment/question (not original) 3 = original on-topic comment/question