Supporting Access to Literacy Instruction for Students with Extensive Support Needs in General Education Settings Through Shared Reading

By

©2020

Samantha Gross Toews

M.A., California State University, Northridge, 2016

B.A., California State University, Northridge, 2012

Submitted to the graduate degree program in Special Education and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Approved by:

Chair: Jennifer A. Kurth, PhD

__________________________

Barbara A. Bradley, PhD

__________________________

Andrea L. Ruppar, PhD

__________________________

James R. Thompson, PhD

__________________________

Kathleen N. Zimmerman, PhD

Date Defended: 5 May 2020
The dissertation committee for Samantha Gross Toews certifies that this is the approved version of the following dissertation:

Supporting Access to Literacy Instruction for Students with Extensive Support Needs in General Education Settings Through Shared Reading

Chair: Jennifer A. Kurth, PhD

Date Approved: ______________________
Abstract

This purpose of this dissertation was to extend knowledge in the field on the use of shared reading interventions to support literacy skill development for students with extensive support needs (ESN) in general education settings. Chapter one introduces a rationale for research on shared reading and an overview of the questions addressed within this dissertation. Chapter two is a systematic literature review of research on shared reading interventions for students with ESN. The review includes a description of the main characteristics of shared reading, materials used, and literacy skills targeted. Quality analysis of included studies was used to identify shared reading as a practice with a moderate evidence-base for supporting comprehension and engagement with literature. Chapter three is a single-case, repeated acquisition design study that assessed the impact of modifications to grade-level non-fiction books on student comprehension by rapidly alternating between the delivery of shared reading with and without book modifications in general education classrooms. Results indicated a functional relation between shared reading with modified grad-level non-fiction books and higher student comprehension of book content for both students with ESN. Chapter four is a single-case, multiple-baseline across skills design in which I investigated the efficacy of professional development coupled with ongoing performance feedback to support teachers to implement a multicomponent shared reading intervention within small groups in general education classes that include one student with ESN. Results indicated an immediate increase in procedural fidelity across all shared reading skills after delivery of professional development with an increasing trend in procedural fidelity as teachers continued to receive performance feedback. Chapter five provides a summary of results from the three studies and implications for future research and practice. The most notable implications include (1) It is essential that pre- and in-service professional development
focus on instructional strategies that support students with ESN to access content in general education settings, (2) Teachers should receive adequate planning and material preparation time to implement effective inclusive instruction, (3) Students with ESN should not be removed from general education settings to receive individualized instruction, and (4) More research is needed to replicate and extend these findings.
Acknowledgements

I have been fortunate this year and throughout my doctoral journey to be surrounded by a better support team than I could have imagined. It is impossible for me to truly convey the gratitude I have for each person who has supported me along the way. First, I would like to thank my advisor, Dr. Jennifer Kurth, for your guidance by direct support and excellent example in my development as a scholar. I came into the doctoral program as a passionate teacher yelling about students’ rights to a quality inclusive education, and I am leaving a passionate teacher-scholar with the skills to generate evidence to support my arguments. Classes and reading helped in my development of research skills. However, through your encouragement to explore my own questions and countless opportunities to join you in collaborative research, you have fostered my new found love for the pursuit of new knowledge.

I am deeply grateful for the guidance I received from each member of my dissertation committee, Dr. Barbara Bradley, Dr. Mary Morningstar, Dr. Andrea Ruppar, Dr. James Thompson, and Dr. Kathleen Zimmerman. Each of you represent a different area of expertise, and your unique feedback throughout the dissertation process has been integral to my success. Dr. Morningstar, without your careful guidance in the area of academic writing at the beginning of my doctoral program, I do not know how I would have produced this dissertation. I want to acknowledge Dr. Kathleen Zimmerman, who took extraordinary care to ensure I understood and used the best practices for the single-case design studies in my dissertation. You were available for every quick and not-so-quick question I had at every stage of the dissertation process. I have learned so much from you that will continue to support my scholarship throughout my career.

I would like to express sincere gratitude to my family. Constant support from my wonderful husband, Ben Toews, enabled me to fully focus on my dissertation this year. From
cooking all of our meals and keeping the house clean, to encouraging me every step of the way, you have been the ship keeping me afloat during my dissertation expedition. If Ben was the boat, Lion, my most amazing cat, was my first mate. He sat with or on me during the writing of every chapter of this dissertation, providing the emotional support I needed to get it done. I will forever consider him the unofficial second author. Big thanks also go to both of my parents, who have always been my biggest supporters. I particularly thank them for putting up with me calling them to talk for an hour a day, four days a week, as I drove home from dissertation data collection. I could not have imagined a better family support team.

I would not have been able to complete these dissertation studies without the support of the administration at the participating school, teachers, and student participants. The teacher participants opened themselves to learning something new and receiving constant performance feedback. As a former teacher, I know receiving performance feedback can often be stressful, and this makes me ever more grateful for each of the three teacher participants. I am grateful to have met and worked with three fantastic students as part of my dissertation. Their willingness and excitement to engage in shared reading lessons made me excited to prepare materials and go to the school each day.

Finally, I am thankful to several good friends who supported these projects in a variety of ways. Jessica McQueston, Elissa Lockman Turner, Mary Mansouri, and Nicole Crump each played an important role in data collection and material preparation that helped these projects come to fruition.
Table of Contents

Chapter One: Inclusive Shared Reading Research Introduction and Rationale ....................... 1

References .......................................................................................................................... 10

Chapter Two: Evaluation of the Evidence Base for Shared Reading to Support Literacy Skill Development for Students with Extensive Support Needs ............................................. 16

Method ............................................................................................................................ 21

Results ............................................................................................................................ 31

Discussion ....................................................................................................................... 50

References ....................................................................................................................... 56

Chapter Three: Comparison of Shared Reading Using Modified and Non-Modified Grade-Level Books on Student Comprehension ........................................................................ 65

Method ............................................................................................................................ 70

Results ............................................................................................................................ 86

Discussion ....................................................................................................................... 96

References ....................................................................................................................... 103

Chapter Four: Investigation of Professional Development to Support Teacher Delivery of Individualized Shared Reading in Small Group General Education Reading Centers ........... 112

Method ............................................................................................................................ 121

Results ............................................................................................................................ 144

Discussion ....................................................................................................................... 162

References ....................................................................................................................... 170

Chapter Five: Summary and Conclusion ........................................................................ 180

References ....................................................................................................................... 186
List of Figures

Figure 1: Search Procedure Flowchart.................................................................23
Figure 2: Comprehension Results for Ben..............................................................88
Figure 3: Comprehension Results for Camilla.......................................................91
Figure 4: Procedural Fidelity Results for Ms. Archer..........................................146
Figure 5: Procedural Fidelity Results for Ms. Olson...........................................149
Figure 6: Procedural Fidelity Results for Ms. Carter..........................................152
List of Tables

Table 1: Decision Rules for Determining Levels of Evidence Using Single-Subject Research . 30
Table 2: Shared Reading Study Characteristics ........................................................................35
Table 3: Shared Reading Intervention Characteristics .........................................................43
Table 4: Quality Indicator Ratings .......................................................................................47
Table 5: Participant Demographics ...................................................................................74
Table 6: Books by Condition .............................................................................................79
Table 7: Social Validity Survey Results ..............................................................................95
Table 8: Teacher Participant Demographics .....................................................................127
Table 9: Student Participant Demographics ..................................................................128
Table 10: Student Response Accuracy by Teacher’s Phase of Professional Development ....154
Table 11: Social Validity Survey Responses ..................................................................160
Appendices

Appendix A ........................................................................................................................................... 189
Appendix B ........................................................................................................................................ 192
Appendix C ........................................................................................................................................ 210
Chapter One: Inclusive Shared Reading Research Introduction and Rationale

Few skills are necessary for as many aspects of modern life as literacy, making literacy one of the most important life skills for all students, including students with extensive support needs (ESN). Literacy, which includes listening, speaking and interacting as well as reading, writing, and spelling, is a valued skill and fundamental human right for all people (Downing, 2007; Keefe & Copeland, 2011). Literacy enhances and creates opportunities for students to interact in their home, community, and school environments, as well as to engage within established adult roles, such as employment (Cihak et al., 2015; Ruppar et al., 2017). Students with significant disabilities, or the 1% of students with the most significant intellectual disability who are eligible to complete their state’s alternate assessment (hereafter referred to as students with ESN, have historically experienced limited access to quality literacy instruction (Downing, 2007; Shurr & Taber-Doughty, 2017).

While a base of research has emerged on effective literacy instruction for students with ESN, this research has been largely conducted in separate, special education classrooms, rather than in inclusive, general education classrooms (Roberts et al., 2013). Thus, a significant gap exists in empirical research. This gap results in a critical need to identify effective literacy instructional practices in general education settings for students with ESN to facilitate their ongoing access and progress in the general education curriculum (Individuals with Disabilities Education Improvement Act (IDEA), 2004; Kleinert et al., 2015; Sauer & Jorgensen, 2016; Toews & Kurth, 2019). The persistent lack of research on literacy instruction for students with ESN in general education settings has left teacher preparation faculty, teachers, inclusive education advocates, and the research community with few evidence-based practices (Hudson & Browder, 2014; Ruppar et al., 2017). A strong base of research on literacy instruction in general
education settings is necessary to provide the field of education with knowledge of quality literacy instruction for all students.

Inclusive education encompasses many practices, structures, and philosophical approaches within schools that aim to ensure all students, including those with ESN, attend, learn, and are valued members of a school community that does not separate students into any type of homogeneously grouped classes or service locations. Inclusive practices facilitate the access and progress of all students in academic content and membership in all aspects of a school’s social community. A social-ecological approach involves viewing disability as a mismatch between the environment, a students’ support needs, and the current school environment rather than a deficit within the student (Thompson et al. 2009). The embodiment of this philosophy is school structures that support inclusive practices, such as students attending their home school (Kurth et al., 2017), provision of all necessary services within the typical education setting with their peers rather than through placement in special classes or delivery of pull out services (Burstein et al., 2004), and access to all supplementary aids and services within the general education setting that will facilitate student participation and progress in the curriculum and their individualized goals (Kurth et al., 2019). Philosophical, legal, and scientific research supports inclusive education and highlights the inadequacies of separate special education settings for students with ESN.

Separate, special education settings do not provide an environment that is conducive to the development of literacy skills due to lack of a language-rich environment, active peer communication partners, and varied age-appropriate books and instruction (Kurth et al., 2016; Ruppar, 2017). Empirical studies of the academic progress of students with ESN in inclusive and separate class settings have found students with ESN in inclusive settings can make more
progress in literacy skills than their similar peers with ESN in separate classes (Dessemontet et al., 2012; Buckley et al., 2006; Turner et al., 2008). Dessemontet et al. (2012) demonstrated the benefits of education in general education settings on student literacy skills through a year-long study of 34 students with an intellectual disability placed in general education classrooms and 34 similar peers placed in special education classrooms. Students in inclusive placements experienced superior progress on reading skills, such as phonological awareness, decoding, and vocabulary than those in special education placements as measured by standardized assessment. Students with ESN in general education settings also experience increased expressive language skills when discussing books when compared to students in special education school placements (Buckley et al., 2006; Turner et al., 2008). The evidence supporting literacy instruction in general education settings should be a significant prompt for increased research on literacy instruction in inclusive settings.

The Problem: Lack of Literacy Research Conducted in General Education Settings

The field of educational research has made great advances in literacy instruction for students with ESN. Unfortunately, there remains a need to investigate the efficacy of literacy instruction in general education settings (Afacan et al., 2018). The need for increased research on literacy instructional practices in inclusive settings is particularly clear when considering that students with ESN in general education settings are 10 times more likely to be exposed to academic literacy instruction than students in separate, special education settings (Ruppar et al., 2018). Additionally, the research discussed previously in this chapter highlights the inadequacy of separate, special education settings to support the literacy needs of students with ESN (Buckley et al., 2006; Dessemontet et al., 2012; Kurth et al., 2016; Turner et al., 2008). It is important to note that research on literacy instructional strategies for students with ESN that have
been conducted in separate settings often call for future replication in inclusive settings (Browder et al., 2017; Mims et al., 2012; Spooner et al., 2015). An increase in research on instructional strategies conducted in general education settings may not only extend their ecological validity to general education settings (Spooner et al., 2015) but could also support the dissemination of the strategies to teachers. This dissemination is crucial because many teachers experience low self-efficacy in their ability to provide effective literacy instruction in inclusive settings that aligns with the general education curriculum (Matzen et al., 2010; Ruppar, 2017; Saloviita, 2015).

Responding to this need for improved research on literacy instructional practices for students with ESN in general education settings, a number of researchers have identified strategies for implementing literacy instruction in inclusive settings. Shared reading is a literacy instructional strategy with a moderate evidence base that has been used to facilitate access to grade level material and progress in a variety of literacy skills for students with ESN (Hudson & Test, 2011; Ruppar et al., 2017). Shared reading can be defined as a book-based interaction between a fluent reader and listener in which the fluent reader presents the book and pauses intermittently to engage the listener in interaction with the book through discussion, question and response, or physical interaction (Hudson & Test, 2011). Ruppar et al. (2017) implemented a multicomponent shared reading intervention in a general education high school English class using and adaptation of the classic book, The Odyssey. They used task analyses with pre-planned questions, and time delay to successfully support a student with ESN to increase vocabulary knowledge, engagement, and book comprehension. This study and others support an emerging base of support for shared reading and an effective literacy intervention for students with ESN in general education settings, however, further investigation is needed (Courtade et al., 2013;
Roberts & Leko, 2013). It is for this reason that this dissertation involved three projects that contribute to knowledge of a specific literacy intervention for students with ESN in general education settings.

This dissertation is comprised of three research studies that investigate different aspects of shared reading interventions. These three projects include: (a) a systematic literature review on shared reading interventions for students with ESN with a focus on the location and characteristics of implementation; (b) a single-case, repeated acquisition design study comparing the efficacy of modified versus non-modified grade-level non-fiction books in supporting student comprehension during shared reading interventions; and (c) a single-case, multiple baseline across skills design that evaluates the impact of professional development on the procedural fidelity of teacher delivered shared reading interventions embedded in elementary grade, small group, literacy center rotations.

**Contemporary Synthesis of Literacy Instruction**

A contemporary synthesis of promising literacy instruction practices in general education settings is needed. The last published broad literature review of literacy interventions for K-12 students with ESN was conducted by Browder et al. (2006). More recently, a review of literacy interventions for adolescents with ESN was published in 2013 (Roberts et al., 2013) as well as a review of multicomponent literacy interventions for students with significant support needs (Afacan et al., 2018). A 2011 literature review conducted by Hudson and Test identified shared reading as literacy instruction practice with a moderate evidence base for supporting literacy skill development for students with ESN. Since 2011 research on shared reading interventions has continued. A contemporary literature review is now necessary to understand the characteristics of effective shared reading interventions, the literacy skills they target, who provides the
instruction, and the settings in which they occur. This area of need is addressed in chapter 2 of my dissertation. I replicated the systematic search procedure conducted by Hudson and Test, provided a description of the pertinent characteristics of shared reading interventions stated in this paragraph, and provide a discussion of implications for future research, teaching practice, and educational policy.

In the systematic literature review described in chapter 2, I identify the characteristics and literacy outcomes of shared reading instruction for students with ESN described in 32 empirical studies. Research questions guiding this chapter are: (1) What are the common characteristics of the research design, intervention, books, and setting used to investigate shared reading interventions?; (2) What evidence is there to support the use of shared reading to teach different literacy skills, including phonemic awareness, phonics, fluency, vocabulary, comprehension, and emergent literacy skills?; and (3) Is shared reading a practice with strong evidence for improving literacy skills for students with ESN? In addition to answering the listed research questions, I provide directions for future research that will address gaps in knowledge that were identified in the literature review process.

**Determining Effective Inclusive Instructional Practices**

There is an urgent need to determine if, and how, evidence- or research-based practices identified as effective in separate settings could be used or altered to be effective in general education settings. Some of these interventions include, shared reading (Hudson & Test, 2011), prompting methods, such as time delay (Miracle et al., 2001, Mims et al., 2012), provision of modified general education books (Roberts & Leko, 2013, Mims et al., 2012), and task analysis for instruction (Browder et al., 2011). It is unclear how and if these strategies need to be modified to be effective in inclusive settings without extensive research on their implementation
in those settings (Hudson & Test, 2011). The exploration of these instructional strategies in general education settings provides an opportunity to extend their ecological validity and support students to generalize literacy skills across settings (Spooner et al., 2015).

Two studies in this dissertation address a gap in the extant literature on the use of modified grade-level non-fiction books during shared reading in general education settings using a repeated acquisition study design (Chapter 3) and a multiple baseline across skills study (Chapter 4). The research questions guiding chapter 3 are: (1) Do students with ESN acquire more comprehension details when involved in a shared reading intervention with an age-appropriate non-fiction book using text modifications compared to a non-modified book?; and (2) Do general and special educators think a one-on-one shared reading intervention using modified grade-level non-fiction books is feasible to implement and meaningful to their students with ESN. Research has shown that curricular adaptations to general education content can promote participation and deter from student removal from inclusive settings (Kurth & Keegan, 2014). Modifications to age-appropriate books used within shared reading interventions to support students with ESN have also been investigated and supported in both separate settings (Shurr & Taber-Doughty, 2013; Spooner et al., 2015) and inclusive settings (Roberts & Leko, 2013; Ruppar et al., 2017). In this study, I delivered a one-on-one shared reading intervention to two elementary grade students with ESN, quickly alternating between the use of modified and non-modified grade-level books during instruction in general education classrooms. I sought to add to the research on curricular adaptations used in general education settings by comparing student accuracy in answering comprehension questions after receiving a shared reading intervention with and without access to modified books. The knowledge of student support needs I gained while conducting this study was used to design the modified books, comprehension
questions, and professional development materials I provided to teachers during the small group shared reading study described in Chapter 4.

**Efficient Planning and Preparation for Literacy Instruction in Inclusive Settings**

Research on instructional practices that are implemented by teachers, rather than researchers, is needed. Teacher implemented research is necessary because researchers, who have no responsibility for the ongoing learning of students in a class, may be able to easily implement an intervention that would not be possible for a typical classroom teacher. Additionally, research on interventions that are implemented by teachers with the presence of a researcher for data collection is vulnerable to teacher adaptation (i.e., the Hawthorn Effect; Gast & Ledford, 2014). Research should minimize the effect of an outside research team on student and teacher behavior by promoting school staff to act as primary interventionists and data collectors. Teacher implemented research is a true test of the feasibility of interventions. Additionally, research involving teachers as interventionists can support real teachers to learn new instructional strategies and engage in data collection to drive their instruction.

The efficacy of professional development and ongoing performance feedback on the procedural fidelity of teacher implemented shared reading interventions within typically occurring small group center rotations is the focus of the study presented in Chapter 4. The research question for this chapter is: Do professional development and practice-based feedback improve teacher implementation of a multicomponent shared reading intervention for students with ESN during small group reading instruction in inclusive, general education classrooms? I supported two general educators and one special educator to integrate an individualized shared reading intervention for students with ESN into center rotations using modified grade-level non-fiction books and task-analyzed lesson plans. Professional development focused on how teachers
could support students with ESN to engage with the modified book, use a task analysis with pre-planned comprehension questions and implement constant time delay, and collect data on student response accuracy. Embedding systematic instruction, such as the use of a task analysis and constant time delay prompting, within general education settings is an evidence-based practice for supporting students with ESN to make progress in their individualized academic goals (Jameson et al., 2007; Jimenez & Kamei, 2015). Shared reading using task analyses, book modifications, and time delay has been investigated and shown effective when provided in one to one instruction embedded in inclusive settings (Roberts & Leko, 2013; Ruppar et al., 2017). I sought to extend this research by training teachers to embed shared reading interventions, similar to those that have been previously investigated, into typically occurring, teacher-led, small group center rotations.
References


Kleinert, H., Towles-Reeves, E., Quenemoen, R., Thurlow, M., Fluegge, L., Weseman, L., & Kerbel, A. (2015). Where students with the most significant cognitive disabilities are taught implications for general curriculum access. *Exceptional Children, 81*, 312-328. [https://doi.org/10.1177/0014402914563697](https://doi.org/10.1177/0014402914563697)


https://doi.org/10.1177/1540796915586190

https://doi.org/10.1352/1934-9556-47.2.135

https://doi.org/10.1177/1540796919855373

https://doi.org/10.1111/j.1365-2788.2007.01038.x

Chapter Two: Evaluation of the Evidence Base for Shared Reading to Support Literacy Skill Development for Students with Extensive Support Needs

Literacy and access to literacy instruction is a human right and essential skill for accessing all aspects of modern society (Keefe & Copeland, 2011). Literacy, which includes listening, speaking and interacting as well as reading, writing, and spelling (Downing, 2007) enhances and creates opportunities for students to interact in their home, community, and school environments, as well as to engage within established adult roles, such as employment (Ruppar et al., 2017). Although students with significant disabilities, hereafter referred to as students with extensive support needs (ESN), have historically faced barriers to literacy instruction, recent advances in learning theory, international and national legislation have promoted an increase in research on literacy instruction strategies for this population (Downing, 2007; Shurr & Taber-Doughty, 2017). This systematic literature review investigates the current state of knowledge within the field of education on one literacy intervention strategy called shared reading for students with ESN. It replicates and extends a 2011 literature review on this topic, which indicates shared reading is a practice with a moderate evidence base for supporting literacy skill developments for students with ESN (Hudson & Test, 2011). This investigation will identify the strength of the evidence supporting the efficacy of shared reading as an intervention to support specific literacy skill development for students with ESN and will outline the common characteristics of the intervention.

Shared Reading

Shared reading is a text-based interaction between a fluent reader and listener in which the fluent reader presents the text and pauses to engage the listener in interaction with the book through discussion, question and response, or physical interaction. Within the published
research, shared reading has been referred to by many names including, read-aloud (Shurr & Taber-Doughty, 2017), dialogic reading (Whitehurst et al., 1999), interactive reading (Wasik & Bond, 2001), storybook lessons (Nielsen & Friesen, 2012), and shared storybook reading (Golloher, 2018). Although shared reading may go by various names, it is a research-based literacy strategy for typically developing children at home and in school (Fisher et al., 2004), students who are English Language learners (Hickman et al., 2004), students who are at risk for reading difficulty or have a high incidence disability such as a learning disability or specific language impairment (Coyne et al., 2004; Justice et al., 2005), and students with ESN (Hudson & Test, 2011). Students with ESN are students with low-incidence disabilities (i.e., intellectual disability, multiple disabilities, autism spectrum disorders, and deaf-blindness), or the one percent of the population who qualify to take their state's alternate assessment and face challenges in accessing equitable educational services in the general education setting as compared to their peers with other disabilities (Morningstar et al., 2017; Thompson et al., 2018).

**Characteristics of the Intervention**

The interactive nature of the read-aloud between the reader and listener is a central characteristic of shared reading. In the literature review conducted by Hudson and Test (2011), they identify several common characteristics of effective, shared reading interventions for students with ESN. These common book and intervention characteristics include: adapted age-appropriate books with simplified text, increased picture supports, repetitive text lines (Spooner et al., 2009), use of objects to support comprehension (Mims et al., 2009), providing students with access to varied response modes including augmentative and alternative communication (AAC) devices (Koppenhaver et al., 2001), integration of systematic prompting using time delay and system of least prompts (Browder et al., 2009), and use of a task analysis to support
systematic, planned interaction with the student during the shared reading activity (Browder et al., 2007). Although Hudson and Test (2011) identified sufficient evidence to identify shared reading as an evidence-based practice with moderate support, the authors called for more quality research on shared reading interventions for students with ESN to identify the practice as having strong support. Hudson and Test identified two needs for shared reading to receive the designation of as having strong research support. The first need is connected to the small number of independent research teams that had investigated the use of this literacy intervention with students with ESN at the time of the 2011 literature review. The second reason cited was the lack of research on shared reading interventions conducted in inclusive settings or using non-fiction books. Since the 2011 literature review, there has been an increase in research investigating shared reading for students with ESN.

Contemporary research has included shared reading interventions provided in inclusive settings (Ruppar et al. 2017), using non-fiction books (Rivera et al., 2017), and by multiple independent research teams (Finke et al., 2017; Edmister & Wegner, 2015, Golloher, 2018). Additionally, there exist new investigations of book adaptation strategies, reading configurations, and questioning methods within shared reading interventions for students with ESN. Considering the ongoing analyses of shared reading, along with new strategies for delivering shared reading interventions, a thorough synthesis of this research is needed to understand what literacy skills share reading interventions support, the setting, methods, materials, and interventionists, and student to teacher ratios in which shared reading can be considered an evidence-based practice so students with ESN.

**Shared Reading and Multicomponent Literacy Instruction**
The National Reading Panel (NRP), a multi-disciplinary group created by the United States Congress to identify effective approaches to teach reading to children, has identified five components of reading instruction: phonics, phonemic awareness, fluency, vocabulary, and reading comprehension (National Institute of Child Health and Human Development, 2000). Although the findings of the NRP are not specifically directed toward reading instruction for students with ESN, their recommendations are frequently referenced when describing literacy interventions for this population (e.g., Alison et al., 2017; Browder et al., 2017).

The NRP and recent research in the field of education have established support for multi-component literacy instruction for students with ESN (Afacan et al., 2018; Allor et al., 2010). Comprehensive literacy instruction for all students should include concurrent, systematic instruction in each of the literacy components identified by the NRP using evidence-based instructional strategies (Allor et al., 2010). Hudson and Test (2011) identified six studies showing a positive effect of shared reading using fiction books on students with ESN emergent literacy skills such as engagement, comprehension, vocabulary, and phonemic awareness skills. No studies targeted phonics or fluency practice with shared reading. A current literature review should update and organize existing research to describe the components of literacy instruction that may be targeted with shared reading intervention. Due to the current evidence supporting comprehensive literacy instruction, it is important to understand what multiple components of literacy instruction common interventions can support.

**Location, Materials, and Interventionists**

The goal of educational research on instructional interventions is to evaluate and disseminate information on effective practices that can then translate to teaching practice in schools. The location of intervention, materials used, and characteristics of the interventionist are
some of the key factors necessary to understand, replicate, and incorporate instructional practices and should be described within any review of intervention literature. Hudson and Test (2011) identified shared reading as an intervention with a moderate level of evidence using a two-step procedure that utilized both a 20-item quality indicator checklist developed for single-case research (Horner et al., 2005) and an assessment of the level of evidence using the National Secondary Transition Technical Assistance Center (NSTTAC) decision rules for determining the level of evidence (Test et al., 2009). In their 2011 review, Hudson and Test identified limitations of the shared reading studies, including the limited number of studies and research teams, and that most studies of shared reading occurred in homes or separate special education classrooms, leaving it unclear if these practices can be considered evidence-based in inclusive settings.

Research that investigates the implementation of shared reading interventions in general education settings with students with ESN is necessary to understand what adaptations to the intervention may be necessary for effective use in general education settings. As of 2011, there were no studies on shared reading conducted in inclusive settings in the 2011. However, new research teams have begun investigating shared reading with students with ESN in general education classrooms in one-to-one student to teacher groupings (Roberts & Leko, 2013; Ruppar et al. 2017) and embedded within whole group instruction (Courtade et al., 2013). Additionally, new research has investigated the integration of novel materials into shared reading interventions, such as summary picture strips (Shurr & Taber-Doughty, 2017), dialogue guides (Edminster & Wegner, 2015), and iPads (Rivera et al., 2017; Spooner et al., 2015). An updated review of the literature on shared reading is necessary to understand the current state of knowledge on the location, materials, and interventionists that support effective, shared reading interventions for students with ESN.
Research Questions and Purpose

The purpose of this systematic review of the literature on shared reading interventions is to identify important characteristics of the intervention and the literacy skills it supports. Specifically, I aim to: (1) Update the most recent review of the literature on this topic to identify the strength of evidence supporting shared reading, (2) Identify the components of literacy addressed during shared reading interventions, and (3) Gain a deeper understanding of the characteristics of shared reading interventions, including specific materials, interventionists, setting, and student to interventionist ratios. This synthesis of the literature will support me to identify gaps in the research which this proposed dissertation may address. I investigate the following research questions:

1. What are the common characteristics of the research design, intervention, books, and setting used to investigate shared reading interventions?
2. What evidence is there to support the use of shared reading to teach different literacy skills, including phonemic awareness, phonics, fluency, vocabulary, comprehension, and emergent literacy skills?
3. Is shared reading a practice with strong support for improving literacy skills for students with ESN?

Method

Search Procedure

A literature search was conducted within three major search platforms, including ProQuest, EBSCOhost, and PubMed, from the University of Kansas library system. Search terms were selected by replicating the search conducted by Hudson and Test (2011) and adding relevant terms that have emerged for shared reading since 2011. Each search was limited to
peer-reviewed articles, in English, Published between 1975-February 2020. The following section provides a description of the search process for each of the three platforms. A figure displaying the steps in the search procedure is found in Figure 1 and explained further in the following sections.
Figure 1

Search Procedure Flowchart

**Database Search:** ProQuest = 525

---

**Database Search:** EBSCOhost = 281

---

**Database Search:** PubMed = 84

---

Total with Duplicates Removed = 502

---

Hand Search
ETAD = 1
RPSD = 1
FAODD = 2
JSET = 1
RASE, JABA, AJIDD, JSE = 0

---

Total for Articles for Review = 507

---

Total After Title/Abstract Review = 54

---

Total After Methods Review = 43

---

Total After Full Text Review = 32

---

Total Included Studies = 32

---

**Excluded = 453**
- Medical studies
- Not empirical research
- Not in English
- Not conducted in the United States

---

**Excluded = 11**
- Shared reading not the independent variable
- The dependent variable was not a literacy skill
- Article was a literature review or practitioner guide
- Article was the dissertation behind a published article included in the review

---

**Excluded = 11**
- The dependent variable was not a literacy skill
- The study was an AB design
- Shared reading was part of an multicomponent reading intervention package
- The article was a review of an article included in this review

ProQuest

A single search strand was used on the ProQuest platform to search the following databases: ERIC, Linguistics and Language Behavior Abstracts (LLBA), Nursing & Allied Health Database, PsycARTICLES, and PsychINFO. ProQuest Dissertations and Thesis Global databases were also searched; however, the limiter "peer-reviewed" was removed for this search as it is not an option in these two databases. This following search terms related to participants with ESN were used: “severe disabilit*”, “intellectual disabilit*”, “significant disabilit*”, “multiple disabilit*”, “moderate disabilit*”, “cognitive disabilit*”, “autism”, “special education”, and “support needs”. Each term was separated by the word “OR” in the initial search. The initial search was saved before conducting a separate search for all terms related to shared story reading (i.e. “shared reading”, “shared story”, “story reading”, “literacy based lesson”, “literacy-based lesson”, “interactive read*”, “read aloud”, “storybook reading”, “story based lesson”, and “story-based lesson”) each separated by “OR” and saving that search. These saved searches were then combined using the term "AND" within the ProQuest saved search options. The use of quotations around each search term is used to ensure that the search only yields results with those exact phrases. The asterisk is used at the end of some search terms such as disabilit*, to allow the search results containing the different endings to that word (i.e., disability, disabilities). A separate search using the terms and method described above was conducted for each of the six listed ProQuest databases yielding 525 results before the removal of duplicates.

EBSCOhost and PubMed

The EBSCOhost platform search included the following databases: Academic Search Complete, Academic Search Premier, masterFILE, and Middle Search Plus. An additional search was conducted in the PubMed database. Identical search terms and separation strategies were
used in the EBSCOhost and PubMed searches as those explained above; however, the shared story reading and ESN terms were separated by the term “AND” and included within one search rather than doing two separate searches and combining them within the search program. This was done because the option to combine searches is not available on the EBSCOhost or PubMed platforms. Each of the four EBSCOhost databases were searched separately, yielding a total of 281 results before removing duplicates. The PubMed database was searched individually, yielding 84 results.

A total of 890 results were collected across all searches. Results from each of the nine searches were downloaded and combined in a single Microsoft Excel document. Once all searches were combined, duplicates of articles were deleted from the Excel document, first using a formula to identify duplicates, then conducting a second manual review to identify and delete duplicates. A hand search of titles and abstracts was conducted of eight top journals in the field of special education for dates represented in the original search. The journals included in the hand search were, *Education and Training in Autism and Developmental Disabilities, The Journal of Applied Behavior Analysis, Remedial and Special Education, The American Journal on Intellectual and Developmental Disabilities, Focus on Autism and Other Developmental Disabilities, The Journal of Special Education,* and *The Journal of Special Education Technology.* Five unique articles were identified for review in the hand search. After duplicates had been removed, 507 unique articles remained to be reviewed.

**Inclusion Criteria**

The inclusion criteria from Hudson and Test’s 2011 literature review were replicated in the current review. All articles that were considered for full review had to meet the following criteria: (a) peer-reviewed article or dissertation; (b) published in English between 1975-
February 2020; (c) experimental or quasi-experimental study (Randomized controlled trials, single-case methods, mixed methods) conducted in the United States; (d) at least one participant with ESN (i.e., intellectual disability, autism and concomitant intellectual disability, multiple disabilities); (e) participants are in grades K-12 or in post-secondary education, or high school based 18-22-year-old program; (e) shared reading is the independent variable or is incorporated as part of the independent variable; and (f) at least one component of literacy is measured as a dependent variable (e.g. phonemic awareness, phonics, fluency, vocabulary, or comprehension) or emergent literacy (interaction, engagement with, or exposure to text). In a shared reading intervention, text is read aloud by a peer, adult, or technology that also facilitates listener participation during the reading of text. All settings for shared reading intervention with students with ESN were accepted for inclusion in this review, including school, home, and clinic. All articles included in the final literature review met all of the listed inclusion criteria.

**Review Process**

A three-step process was followed to ensure all articles included in the review met the inclusion criteria. The three steps included: 1) Title and abstract review, 2) Brief methods section review, 3) Full article content review.

**Title and Abstract Review**

I reviewed the titles and abstracts of all 507 articles for inclusion or exclusion. A second rater was randomly assigned to review 138 (27%) titles and abstracts. The website, Randomizer.org, was used to randomly assign all interrater agreement assignments for this review. Fifty-four articles were identified for further review, and 453 did not meet all inclusion criteria. Interrater agreement for the title and abstract was calculated at 96.4% based on point by point agreement. I met with the second rater to come to a consensus on all disagreements before
moving on to the next step.

**Methods Section Review**

A methods section review was conducted for the 54 articles identified for further review. In this step, the methods sections were read closely to ensure that all articles met the inclusion criteria before qualifying for full article review. I reviewed all 54 method sections, and the second rater reviewed 12 articles (22.2%). These 12 articles were specifically selected for a second review by myself due to the uncertainty of their qualification for a full review. The second rater and I came to a consensus on these 12 articles. Following this review of the methods section, 43 articles were identified for a full review, and 11 were removed that did not meet inclusion criteria. Some reasons articles were removed at this stage include: shared reading was not the independent variable, the dependent variable was not a literacy skill, the article was a review of research or practitioner geared guide, or the article was a dissertation that matched a later published article that remained included in this review.

**Full Article Content Review**

A Microsoft Excel document was designed to code aspects of each article during the full review. These included: study design, participants, intervention, materials, and results. Particular focus was taken to record detailed information of the characteristic of each shared reading intervention, such as location of deliver, who delivered the intervention, prompting strategies used, which literacy skills were targeted, and characteristics of the materials used. Pertinent characteristics of each study were recorded in the Microsoft Excel document as the articles were read. All coded characteristics can be found in Appendix A, Figure 1. The second rater and I practiced coding two articles to ensure agreement between raters. I then independently coded relevant content information for all 43 remaining articles. Eleven studies that were fully
reviewed did not meet the inclusion criteria. Some of the reasons articles were excluded after full review include, participants did not have ESN, the manuscript was the dissertation behind an included published study, the dependent variable did not measure an aspect of literacy, the study was an AB design, the study compared the rate of skill acquisition in different settings as the dependent variable, shared reading was one part of a multi-component intervention package, or the article was a commentary/review of an article already included in the review.

**Quality Indicator Coding and Level of Evidence**

The quality of studies included in this review was assessed using a 20-item quality indicator checklist based on the quality indicators recommended by Horner et al. (2005). The items on the quality indicator checklist used for this review are identical to those used in the most recent literature review on shared reading intervention for students with ESN conducted by Hudson and Test (2011). A copy of the quality indicators used to evaluate each article can be found in Figure 2, Appendix A. A dichotomous, Yes (indicator met) or No (indicator not met), rating was used to assess each of the 20 items on the quality indicator checklist for each included article. After quality indicator coding was complete, each article was evaluated to identify if a functional relation between the intervention and the predicted effect was achieved. The process described by Cooper et al. (2007) was used to identify the presence of a functional relation in each study included in the final review. The process included identifying if each study had, 1) Prediction (stable baseline), 2) Verification (Similar baseline in all tiers), 3) Replication (Similar trend across participants or behaviors). The information in Table 1 displays the “Decision Rules for Determining Levels of Evidence” developed by NSTTAC as it appears in the original literature review (Hudson and Test, 2011; Test et al., 2009). These criteria were used to identify the level of evidence supporting shared reading as a literacy intervention for students with ESN.
### Table 1

**Decision Rules for Determining Levels of Evidence Using Single-Subject Research**

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>• Five high-quality studies (i.e., Meets all quality indicators)</td>
</tr>
<tr>
<td></td>
<td>• Three independent research teams</td>
</tr>
<tr>
<td></td>
<td>• Five high-quality studies must have a functional relation</td>
</tr>
<tr>
<td></td>
<td>• No contradictory evidence from a study reflecting strong evidence</td>
</tr>
<tr>
<td>Moderate</td>
<td>• Three high-quality studies (i.e., Meets all quality indicators except Indicators 2 and 11 and at least one of Indicators 17-20)</td>
</tr>
<tr>
<td></td>
<td>• One or two independent research teams</td>
</tr>
<tr>
<td></td>
<td>• Must have a functional relation</td>
</tr>
<tr>
<td>Potential (Needs additional Research)</td>
<td>• Two high-quality or acceptable studies</td>
</tr>
<tr>
<td></td>
<td>• One to two independent research teams</td>
</tr>
<tr>
<td></td>
<td>• Must have a functional relation</td>
</tr>
</tbody>
</table>
Interrater Agreement

Interrater agreement for article coding was completed by the second rater for 13 of 43 reviewed articles representing 30% of the sample. Interrater agreement for content coding was analyzed by point by point agreement and was calculated at 99.4%. Interrater agreement for quality indicator coding was also conducted for the same 13 articles using point by point agreement. Quality indicator agreement was calculated by point by point agreement at 94.2%. The second rater and I came to a consensus on 100% of disagreements.

Results

A total of 32 reviewed articles were ultimately included. The studies included in this review are indicated with an asterisk in the reference section of this article.

Research Question 1: What are the Common Characteristics of the Research Design, Intervention, Books, and Setting Used to Investigate Shared Reading Interventions?

Pertinent characteristics of all 32 included studies, and the shared reading interventions they employed were recorded to thoroughly explore the first research question. The study characteristics explored include study design, interventionist, intervention location, student to interventionist ration, and participant characteristics. A detailed description of these characteristics is found within the Study Characteristics subheading in the following section and summarized in Table 2. In addition to the characteristics of each study design, details were recorded about shared reading intervention characteristics in each study, including types of systematic instruction used, accessibility features, book type, and characteristics. A detailed description of the shared reading intervention used in each study is found within the Shared Reading Intervention Characteristics subheading and summarized in Table 3.
Study Characteristics

Design. All studies that were reviewed were single-case designs. No group design studies met the inclusion criteria. There were several single-case designs utilized in studies including Multiple baseline across participants (n = 8), multiple probe across participants (n = 15), multiple probe across materials, conditions, or skills (n = 6), multiple baseline across materials, conditions, or skills (n = 2), and withdrawal (n = 1). The following sections on study design are summarized in Table 2.

Interventionist and Ratio. The most common interventionist (31.2%) in the reviewed shared reading studies was a member of the research team (n = 17) (e.g., Alisson, 2017; Kim et al., 2018; Mims et al., 2012). As seen in Table 2, two studies (i.e., Rivera et al., 2017; Wood et al., 2019) included both the researcher and a special education teacher as the interventionist across different phases of the study. Special education teachers were the sole interventionist in nine studies (e.g., Browder et al., 2007; Mucchetti, 2013; Ruppar et al., 2017). Two studies (i.e., Courtade et al., 2013; Wood et al., 2015) involved general and special education teachers in the development and/or implementation of the shared reading intervention, and one study (i.e., Roberts and Leko, 2013) involved both special education teachers and paraprofessionals as interventionists. No studies were identified in which the only interventionist was a general education teacher. A paraprofessional was the sole implementer in one study (i.e., Spooner et al., 2009). Parents implemented two shared reading interventions with their own children (i.e., Koppenhaver et al., 2001a/b). One study (i.e., Golloher, 2018) involved both a researcher and a parent as interventionists. A small number of studies (n = 4) included the presence, participation, or intervention delivery by typically developing peers (e.g., Hudson & Browder, 2014; Shurr & Taber Doughty, 2013; Shurr & Kromer, 2018). For example, Hudson and Browder (2014)
supported same age peers without an identified disability to deliver a scripted shared reading intervention to peers with ESN.

The most common ratio of interventionist to participants was 1:1, representing 26 of the 32 studies (e.g., Brower et al., 2008; Spooner et al., 2014; Wood et al., 2019). One study was conducted with a researcher and two students (i.e., Shurr & Kromer, 2018). Cheek (2016), Kemp-Inman (2016) and Wood et al. (2015) implemented the shared reading intervention in both 1:1 and small groups of up to seven students. Courtade et al. (2013) was the only study to deliver the shared reading intervention to an entire general education class. No instruction in this study was delivered in a smaller grouping. Browder et al. (2007) provided shared reading instruction in small groups of four students in some sessions and the whole class (8-10 students) in some sessions.

**Intervention Location.** The most common location for the implementation of shared reading interventions was in the special education classroom only \((n = 12)\) (e.g., Mims, 2009; Rivera et al., 2017; Roberts et al., 2017), as seen in Table 2. Three studies were conducted both in special education classrooms and other school areas, such as an office or hallway (i.e., Mims et al., 2009; Shurr & Kromer, 2018; Spooner et al., 2014). Four studies implemented shared reading interventions in the participant’s school building (i.e., cafeteria, office, multi-purpose room, hallway) but not in a classroom (e.g., Mims et al., 2012; Shurr, 2012; Spooner et al., 2015). Five studies occurred in both special education and general education classrooms, depending on the phase of the study (e.g., Hudson & Browder, 2014; Kemp-Inman, 2016; Roberts & Leko, 2013). Courtade et al. (2013) and Ruppar et al. (2017) conducted the only studies that were implemented entirely in general education classrooms. One study was implemented in a clinical setting (i.e., Kim et al., 2018), and Edminster and Wegner (2015) was
the only study to deliver a shared reading intervention in home and clinical settings. Three studies occurred in participant homes or daycare facilities (i.e., Golloher, 2018; Koppenhaver et al., 2001a/b)

**Participants.** The average number of student participants in the 32 reviewed studies is 3.41, with a range of 1 to 6 (see Table 2). The total number of student participants across all studies is 109, with ages of participants ranging from 3-21. Elementary-aged students represent 65.6% of participants ($n = 21$) (e.g., Cheek, 2016; Spooner et al., 2009; Wood et al., 2015), with 12.5% in middle school settings ($n = 4$) (e.g., Browder et al., 2007; Mims et al., 2012; Shurr & Taber-Doughty, 2013), and 18.6% in high school ($n = 6$) (e.g., Knight et al., 2018; Roberts et al., 2019; Shurr, 2012). The study conducted by Finke et al. (2017) was conducted in a special education school and did not indicate whether participants were considered elementary or middle school students.

Information on the identified disabilities of participant was found in all articles except Wood et al. (2019) who indicated all participants attended a self-contained special education class for students who qualify to take their state alternate assessment and have an intellectual disability. Participant disability labels across the 32 studies were as follows: autism ($n = 38$, 34.9%), intellectual disability ($n = 31$, 28.4%), intellectual disability and multiple disabilities ($n = 19$, 17.4%), autism and intellectual disability ($n = 10$, 9.2%), other health impairment ($n = 4$, 3.7%), unspecified ($n = 3$, 2.8%), multiple disabilities ($n = 2$, 1.8%), and developmental delay ($n = 2$, 1.8%).
Table 2

Shared Reading Study Characteristics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Baseline/Probe</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Withdrawal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interventionist</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Researcher</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Special Educator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Educator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Para-professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Peer(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Education Class</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Special Education Class</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Other School Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Intervention Ratio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Paired</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- X indicates the study characterized with the corresponding feature.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Group (3-7)</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Whole Group</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participants</th>
<th>Number of Participants</th>
<th>School Level</th>
<th>Disability Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 6 3 3 2 4 1 3 4 4 3 4 3 4 3 3 5 3 3 3 3 1 3 6 3 3 4 3 2 3 3</td>
<td>E E M E E E E E H M M M E E E E E E H E H H E H E E H E E H</td>
<td>1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 1 2 1 1 1 1 1 1</td>
</tr>
</tbody>
</table>

Note. E = elementary, M = middle school, H = high school, N = no grade special school (ages 9-13), 1 = intellectual disability, 2 = autism, 3 = multiple-disabilities, 4 = developmental delay, 5 = other health impairment, 6 = visual impairment, 7 = speech language impairment, 8 = hearing impairment
**Shared Reading Intervention Characteristics**

The following sections describe some of the most common features of shared reading interventions that were identified through the review of the literature. Table 3 provides a visual summary of the shared reading intervention characteristics described in the following sections.

**Systematic instruction.** Systematic instruction within shared reading was explored in 21 studies. These systematic instructional strategies includes system of least prompts and time delay.

**System of Least Prompts.** A system of least prompts is a type of systematic instruction that involves the implementer providing only the support necessary on a hierarchy of least to most intrusive prompts (Spooner et al., 2014). Nineteen studies implemented a system of least prompts within shared reading interventions. Each research team modified the system of least prompts to fit the content of their study, some providing multiple types of verbal or gestural cues before moving to more intrusive prompts. For example, Finke et al. (2017), described a five-step least to most prompting hierarchy in which the first two prompting levels are a verbal cue, followed by a verbal cue with a verbal example to further support the student. Other studies utilized a modified system of least prompts in which students were provided with a re-reading of shorter and shorter potions of text to support their identification of the answer to a comprehension question (Alison et al., 2017). Some research teams utilized a traditional least to most prompting hierarchy by providing the natural cue before supporting with a gesture than verbal, then model and finally physical prompt to participants (e.g., Golloher, 2018; Roberts et al., 2019).

**Time Delay.** Time delay strategies, such as constant time delay (CTD) and expectant time delay, were used in shared reading interventions (n = 12). Ruppar et al. (2017) used constant
time delay prompting to support a student with ESN to complete 12 vocabulary, engagement, and comprehension tasks during each shared reading session. In this study, the interventionist delivered the cue on a task analysis, waited up to seven seconds for the students to respond, then provided the controlling prompt (the prompt that supports the student to respond accurately) or praise. Other studies used a specific time delay to systematically introduce a system of least prompts, described in the previous section (e.g., Mims et al., 2009; Roberts et al., 2019; Wood et al., 2015). For example, in the study by Roberts et al. (2019), the interventionist provided five seconds after the initial comprehension cue for the student with ESN to respond, before repeating the verbal cue with gesture support and then continuing to increase the level of prompting until the student responded correctly.

**Book Type.** The most common type of book used in shared reading interventions were fiction books such as storybooks (e.g., Browder et al., 2011; Mims, 2009; Spooner et al., 2015) and novels (e.g., Hudson & Brower, 2014; Ruppar et al., 2017). Fiction texts were the only type of book used in 20 studies (e.g., Alison et al., 2017; Mucchetti, 2013; Edminster & Wegner, 2015). Nine studies used non-fiction books only, such as biographies (e.g., Mims et al., 2012), social studies textbooks (e.g., Wood et al., 2015), and newspapers or job manuals (e.g., Shurr & Taber-Doughty, 2017). Three studies used a mix of fiction and non-fiction books within shared reading interventions (i.e., Courtade et al., 2013; Roberts & Leko, 2013; Shurr & Kromer, 2018).

**Materials.** Materials used within shared reading interventions had several recurring characteristics. These characteristics include book adaptations, added pictures or video supports, added object supports, repetitive text lines, non-adapted texts, task analyses or dialogue guides, and technology supports. The following sections will describe these characteristics and their frequency.
**Adapted Books.** Books were frequently adapted to increase accessibility in shared reading interventions ($n = 21$). Some frequently made adaptations include: adding picture supports to books and answer options, creating a repetitive text line within a book that previously did not have a repetitive text line, and adding objects or environmental experiences to books to support comprehension. The following sections will describe some of the book adaptations that have been investigated and their outcomes.

**Picture or Video Supports.** The addition of picture supports was the most common adaptation to shared reading interventions ($n = 26$). One of these 26 studies provided both picture and video to support vocabulary acquisition during shared reading of science non-fiction books (Rivera et al., 2017). The picture and video supports were embedded in a book presented on an iPad. The interventionist presented a task analyzed shared reading lesson with the digital book. A functional relation was established between the shared reading intervention and science vocabulary knowledge for all three participants with intellectual disability. Roberts and Leko, (2013) supported three middle school students with intellectual disability to increase story comprehension through shared reading of adapted books with added picture supports. These researchers used the book adaptation procedures outlined in Browder et al. (2007, 2008) to re-write text at a more accessible listening comprehension level, included picture symbols above target vocabulary words, and added one to three comprehension questions to the end of each chapter or book section.

**Object Supports.** Object supports also referred to as realia, are physical items that are presented along with or affixed to books and relate in some way to the book content. Object supports were used in five shared reading intervention studies (e.g., Browder et al., 2008; Browder et al., 2011; Golloher, 2018). Mims et al. (2009) adapted shared reading books to
include a repetitive text line and five objects Velcroed to pages throughout the book to strategically support story elements. For example, a flower figure was affixed to a page of the book where the targeted vocabulary word was flower. Two students with multiple disabilities who engaged in this study showed increased story comprehension across three shared reading books during the intervention. Teachers involved in the study reported that they thought the intervention and adapted books were an effective way to support student comprehension growth (Mims et al., 2009). Similarly, Mucchetti (2013) added tactile objects to books and provided students with tactile objects as comprehension question answer options. Students with autism in this study selected their answers to comprehension questions verbally, by pointing to, or removing and object from a field of for object options. All participants increased engagement in the shared story activity and story comprehension (Mucchetti, 2013).

**Repetitive Text Lines.** A repetitive text line is a line of text that appears on multiple pages of a book and often includes a key element of the story (Courtade et al., 2013). Ten shared story studies utilized books that were adapted to contain or were originally written with repetitive text lines (e.g., Browder et al., 2011; Rivera et al., 2017; Spooner et al., 2009). Spooner et al. (2014) supported student engagement in shared reading activities by embedding an iPad button students could press to read the repetitive text aloud within e-books on iPad2 devices. Courtade et al. (2013) used a task analysis with planned opportunities for students to orally complete or read repetitive text lines from memory during whole group shared reading activities within the general education classroom.

*Non-adapted age-appropriate materials.* The use of non-adapted age-appropriate books in shared reading interventions has been explored in six studies. Four of these studies used the PPD strategy described in the systematic instruction heading of this article. Wood et al. (2015)
supported students in accessing non-adapted grade-level social studies books. Student participants used a graphic organizer to generate “wh” comprehension questions about a short (150-250) words section of the text. They were told to listen for the answer to their question as the short section of text was read aloud. Data in this study indicates a functional relation was established between the shared reading using a system of least prompts with a graphic organizer and student ability to generate and answer comprehension questions.

**Task Analyses or Dialogue Guides.** Task analysis or dialogue guides were common supports for systematic instruction within shared reading interventions \((n = 19)\). Task analyses used in the included studies outlined specific steps interventionists were intended to provide throughout each shared reading session (e.g., Browder et al., 2007; Courtade et al., 2013; Roberts & Leko, 2013). Some task analyzed lesson plans included a dialogue guide, or the exact wording the interventionist was to use in order to decrease variability across intervention sessions and/or support teacher implementation of the intervention (e.g., Edminster & Wegner, 2015; Ruppar et al., 2017; Spooner et al., 2009).

**Technology.** Technology, including iPads and speech generating, augmentative and alternative communication (AAC) devices were used in many shared reading intervention studies \((n = 11)\) (e.g., Knight et al., 2019; Koppenhaver et al., 2001a/b; Wood et al., 2019). Some research teams used the iPad as the means for presenting an adapted storybook, engagement, vocabulary, and comprehension questions. iPads were the most common form of technology used to support shared reading interventions \((n = 8)\). Spooner et al. (2014) implemented a shared reading intervention using physical books adapted to contain repetitive text lines and picture symbols for targeted vocabulary words. An iPad2 was equipped with an AAC program, pre-programmed comprehension questions and response options, repetitive text line button, an image
of the cover to facilitate the reading of the title and author, and key sentences where the student could point to individual words to hear them read aloud.

Although iPads were the most commonly used technology investigated in shared reading interventions, other technology, such as DynaVox, Cheap Talk, and Big-Mack AAC devices, were used to support students to engage in shared reading. Edminster and Wegner (2015) investigated the effects of repeated scripted shared reading intervention supported by book-specific vocabulary pages loaded on DynaVox AAC devices on the number of conversational turns taken during reading for students with cerebral palsy and microcephalia. Two of the three participants in this study displayed an increase in conversation turns during the scripted shared reading intervention in comparison with baseline number of conversational turns. Koppenhaver et al. (2001a/b) investigated the utility of light tech AAC (Cheap Talk 4 and Big-Macks) in increasing the number of independent engagement interactions observed by girls with Rett Syndrome during shared reading interactions with their mothers. All four girls in this study increased their use of AAC to comment or engage with the text during shared reading.
### Table 3

**Shared Reading Intervention Characteristics**

| Shared Reading Intervention Characteristics | Koppenhaver et al., 2001a | Koppenhaver et al., 2001b | Browder et al., 2007 | Mims et al., 2009 | Spooner et al., 2009 | Browder et al., 2011 | Shurr, 2012 | Mims et al., 2012 | Spooner et al., 2013 | Mims et al., 2013 | Spooner et al., 2014 | Mims et al., 2014 | Spooner et al., 2015 | Hudson & Browder, 2015 | Spooner et al., 2016 | Hawes et al., 2016 | Spooner et al., 2017 | Mucchetti, 2017 | Courtade et al., 2017 | Spooner et al., 2018 | Hudson et al., 2018 | Spooner et al., 2019 | Roberts et al., 2019 |
|-------------------------------------------|---------------------------|---------------------------|----------------------|------------------|----------------------|----------------------|----------------|------------------|---------------------|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| **Systematic Instruction**               |                           |                           |                      |                  |                      |                      |              |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| System of Least Prompts                  | X                          | X                          | X                    | X                | X                    | X                    | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Time Delay                               | X                          | X                          | X                    |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| **Book Type**                            |                           |                           |                      |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Fiction                                  | X                          | X                          | X                    | X                | X                    | X                    | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Non-Fiction                              |                           |                           |                      |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| **Materials**                            |                           |                           |                      |                  |                      |                      |                |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Adapted Texts                            | X                          | X                          | X                    | X                | X                    | X                    | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Picture or Video                         | X                          | X                          | X                    | X                | X                    | X                    | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Objects                                  | X                          | X                          | X                    |                  | X                    |                      |                 |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Repetitive Text                          | X                          | X                          | X                    | X                | X                    |                      |                 |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Non-Adapted Texts                        |                           |                           |                      |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Task Analysis/ Guide                     | X                          | X                          | X                    | X                | X                    | X                    | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Technology                               | X                          | X                          | X                    |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| **Skill and Results**                    |                           |                           |                      |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Emergent Literacy                        | +                          | +                          | +                    | +                | +                    | /                    | /              | +                | +                   | +                | +                   | +                   | +                   | +                   | /                   | +                   | +                   | +                   | /                   | +                   | +                   |
| Phonemic Awareness                       |                           |                           |                      |                  |                      |                      | X              | X                | X                   | X                | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   | X                   |
| Comprehension                            | +                          |                          |                         |                  |                      |                      |                |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Vocabulary                               | +                          | +                          | /                    |                  |                      |                      |                 |                  |                     |                 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |

**Note.** UDL = Universal Design for Learning, (+) = functional relation, (/) = positive effect, (0) = neutral/no effect, (-) = negative effect
Research Question 2: What Evidence is there to Support the Use of Shared Reading to Teach Different Literacy Skills?

The inclusion criteria for this review required that all reviewed studies have a dependent variable that measured one of the five components of literacy identified by the NRP or emergent literacy skills, such as engaging with text. Studies frequently measured multiple components of literacy ($n = 15$) with a range of 2-3 components. Seventeen studies measured only one literacy component. Comprehension was the most commonly targeted literacy skill in shared reading intervention studies ($n = 24$). A functional relation between a shared reading intervention and an increase in student comprehension was present in 22 studies. The remaining two studies showed a generally positive effect on comprehension outcomes. Comprehension was most commonly measured by student response to “wh” questions directly related to the text. Story retell was a second common way researchers measured comprehension growth.

Emergent literacy skills were supported by shared reading intervention in eighteen studies. Emergent literacy included skills such as conversational turn-taking using AAC devices during shared reading (Edminster and Wegner, 2015; Finke, 2017), pointing to the title or turning pages in the shared reading book (Spooner et al., 2015), and engagement in the shared reading book measured by eye gaze (Browder et al. 2011). A functional relation between a shared reading intervention and emergent literacy skill improvement was established in 13 studies. Three studies showed a generally positive effect and two studies showed a neutral effect on the emergent literacy skills of participants.

Vocabulary knowledge was the dependent variable in six studies. A functional relation was established between a shared reading intervention and an increase in student vocabulary skills in four studies. The remaining two showed a generally positive effect. Browder et al.
(2007) were the only research team to measure phonics skills as an outcome of a shared reading intervention. This study established a functional relation between the intervention and improved phonics skills. Shared reading was not used in any studies to promote phonemic awareness or fluency skills.

**Research Question 3: Is Shared Reading a Practice with Strong Support for Improving Literacy Skills for Students with ESN?**

In their 2013 literature review on shared reading interventions for students with ESN, Hudson and Test identified shared reading as a practice with moderate support for improving student literacy skills. The three requirements to establish a strong base of support for a practice used in this study are: (1) identification of five high-quality studies that demonstrate a functional relation, (2) conducted by at least three independent research teams, and (3) an absence of contradictory evidence on the effect of the intervention (Test et al., 2009). The following sections demonstrate the evaluation of the evidence base on shared reading to support literacy skill development for students with ESN.

Table 4 displays the results of quality indicator coding for all studies included in this review. Three studies met the quality requirements for being a high-quality study (Cheek, 2016; Knight et al., 2018; Wood et al., 2015). All 20 quality indicators defined in Table 1 had to be met in order for a study to be considered a high-quality study. As stated previously, five high-quality studies are required to establish a strong base of support for shared reading. For this reason, shared reading remains a practice with a moderate evidence base. The most common reason a study did not meet the criteria of high-quality was indicator 19, which requires an explicit statement of how the intervention is practical and cost-effective. It was uncommon for a study to provide information on the cost of materials for implementation. The second most commonly
missed indicator was 20, which requires the study to occur in a natural setting with a typical intervention agent (e.g., parent, teacher, paraprofessional, or peer). Nineteen of the 32 shared reading interventions in this sample were implemented in part or whole by a researcher. These studies were not eligible to be considered high-quality. A study was considered of acceptable quality when it met all quality indicators except indicators 2 and 11 and at least one of Indicators 17-20. Twenty-six studies were identified as acceptable quality. Three studies did not meet the requirements for acceptable quality due to either not providing three demonstrations of effect (Edminster & Wegner, 2015; Shurr & Kromer, 2018) or presence of threats to internal validity due to only two baseline data points for one participant (Roberts & Leko, 2013).
Table 4

Quality Indicator Ratings

<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>Koppenhaver et al., 2001a</th>
<th>Koppenhaver et al., 2001b</th>
<th>Browder et al., 2007</th>
<th>Browder et al., 2008</th>
<th>Mims et al., 2009</th>
<th>Mims, 2009</th>
<th>Spooner et al., 2009</th>
<th>Browder et al., 2011</th>
<th>Shurr, 2012</th>
<th>Mims et al. 2012</th>
<th>Shurr &amp; Tauber-Doughty, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Participant</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Participant Selection</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Setting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Setting Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Dependent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Operationally Defined</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>5. Quantifiable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>6. Replicable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>7. Measured Repeatedly</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>8. Interobserver Agreement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Independent variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Replicable Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>10. Systematic Manipulation</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>11. Procedural Fidelity</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>12. Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>13. Replicable Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Results/graphs/design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Demonstrations of Effect</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>15. Internal validity</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>16. Replication</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Social validity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. DV Socially Important</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>18. Magnitude of Change</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>19. Practical/cost-effective</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>20. Typical contexts</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>19</td>
<td>19</td>
<td>18</td>
<td>18</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>18</td>
<td>19</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note.* Y = yes
**Quality Indicators (Continued)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>2. Participant Selection</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Setting**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Setting Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Dependent variable**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Operationally Defined</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>5. Quantifiable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>6. Replicable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>7. Measured Repeatedly</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>8. Interobserver Agreement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Independent variable**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Replicable Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10. Systematic Manipulation</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>11. Procedural Fidelity</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>12. Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>13. Replicable Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Results/graphs/design**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Demonstrations of Effect</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>15. Internal validity</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>16. Replication</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Social validity**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17. DV Socially Important</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>18. Magnitude of Change</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>19. Practical/cost-effective</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
</tr>
<tr>
<td>20. Typical contexts</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
</tr>
</tbody>
</table>

**Total**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>18</td>
<td>19</td>
<td>19</td>
<td>18</td>
<td>18</td>
<td>20</td>
<td>19</td>
<td>16</td>
<td>18</td>
<td>20</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note. Y = yes*
## Quality Indicators (Continued)

<table>
<thead>
<tr>
<th>Participants</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participant Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>2. Participant Selection</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

## Setting

<table>
<thead>
<tr>
<th>Setting</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Setting Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

## Dependent variable

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Operationally Defined</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>5. Quantifiable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>6. Replicable Measurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>7. Measured Repeatedly</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>8. Interobserver Agreement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

## Independent variable

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Replicable Description</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10. Systematic Manipulation</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>11. Procedural Fidelity</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>12. Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>13. Replicable Baseline</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

## Results/graphs/design

<table>
<thead>
<tr>
<th>Results/graphs/design</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Demonstrations of Effect</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
</tr>
<tr>
<td>15. Internal validity</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>16. Replication</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

## Social validity

<table>
<thead>
<tr>
<th>Social validity</th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. DV Socially Important</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>18. Magnitude of Change</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
</tr>
<tr>
<td>19. Practical/cost-effective</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
<td>Y</td>
<td>Y</td>
<td>No</td>
</tr>
<tr>
<td>20. Typical contexts</td>
<td>Y</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Y</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Total

<table>
<thead>
<tr>
<th></th>
<th>Ruppar et al., 2017</th>
<th>Rivera et al., 2017</th>
<th>Finke et al., 2017</th>
<th>Alison et al., 2017</th>
<th>Golloher, 2018</th>
<th>Kim et al., 2018</th>
<th>Wood et al., 2019</th>
<th>Knight et al., 2018</th>
<th>Shurr &amp; Kromer, 2018</th>
<th>Roberts et al., 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>19</td>
<td>18</td>
<td>20</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>

Note. Y = yes
Discussion

This systematic literature review utilized study characteristics coding through a researcher created Excel document and quality indicator coding using a checklist developed by Test et al. (2009) that is based on the recommendations for the determination of research quality presented by Horner et al. (2005). This process allows for a deeper understanding of the characteristics of shared reading interventions, identification of the literacy skills that are supported by shared reading interventions, and a description of the strength of the evidence base for shared reading interventions. The number of studies that investigated shared reading interventions has risen substantially since the last shared reading literature review in 2011, which contained six studies (Hudson & Test 2011). However, due to a lack of reporting on cost feasibility and the presence of a researcher as the interventionist, there continues to be only a moderate base of evidence for the use of shared reading to support literacy skill acquisition for students with ESN. Although there were not enough high-quality studies to designate shared reading as a practice with a strong base of support, all 32 studies showed a positive effect of shared reading on at least one literacy skill for students with ESN. The majority of shared reading research indicates that the intervention is used to support student engagement with books and comprehension.

Shared reading interventions were most commonly implemented by a researcher or special education teacher within special education settings in a one-to-one ratio. Although the intervention was often investigated in elementary settings, twelve studies implemented shared reading to support student literacy growth in middle and high school settings. Systematic instructional practices were an integral part of shared reading interventions. A system of least prompts and constant time-delay were the most common systematic instructional practices
embedded within shared reading interventions. Shared reading interventions were shown to be effective in supporting student comprehension of fiction and non-fiction books. The use of adapted books with simplified wording, added pictures, and repetitive text lines, and task analyses were common within shared reading interventions. There is also a growing base demonstrating shared reading can be used to support students with ESN to access non-adapted grade level books. The use of technology to present e-books and digital coaches that lead shared reading interventions is also a strategy for intervention implementation with growing support.

**Implications**

The findings from this review indicate that teachers can integrate shared reading interventions with adapted or non-adapted books, systematic prompting, and planned engagement points into the comprehensive literacy instructional programs of students with ESN. There are three key areas where more investigation is needed. These areas include the following: (a) investigation of shared reading to support students with ESN to access to grade-level books within general education settings, (b) Integration of individualized shared reading supports into small and whole group instruction, and (c) Research on shared reading interventions that are implemented by school staff or peers rather than researchers. In addition to these implications, it is important that future research on shared reading interventions include explicit mention of the cost of interventions to facilitate a deeper understanding of the resources necessary for implementation.

**Shared Reading in General Education Settings**

National legislation indicates all students should access education in the least restrictive environment (IDEA, 2004) and receive the supports necessary to make progress toward grade-level standards (ESSA, 2015). Additionally, students with ESN have been shown to make higher
levels of progress in literacy skill development (de Graaf & van Hove, 2015; Dessemontet et al., 2012) and are 10 times more likely to receive literacy instruction when they are included in general education classrooms (Ruppar et al., 2018). It is for these reasons that research on instructional strategies for students with ESN should focus on how to adapt evidence-based practices that have been validated in special education for effective use in general education settings (Toews & Kurth, 2019; Agran et al., 2020).

In the nearly twenty years of research and 32 reviewed research studies, only two studies (Courtade et al. 2013; Ruppar et al. 2017) were conducted entirely in general education settings. Five additional studies were conducted in both general and special education settings. This is problematic because a lack of inclusive research leaves the field without an example of how students with ESN can be supported in fully inclusive instruction. Future research should focus on measuring the literacy skill outcomes of shared reading interventions that are delivered entirely in general education settings. Additionally, this future research should investigate the use of typical grade-level books, including the processes used for identifying the type and intensity of adaptation or external supports necessary for students to access these books in the general education setting. The emerging base of research on the use of shared reading using non-adapted books (e.g., Shurr & Taber-Doughty, 2017; Wood et al., 2014) should be expanded to investigate the use of grade-level fiction and non-fiction books within general education settings. The use of non-adapted books with external image, graphic organizer, or peer supports have the potential to save valuable teacher time in the book adaptation process.

**Small and Whole Group Implementation**

Whole class instructional groupings are common in general education classrooms. Toews et al. (In Press, 2020) observed general education classrooms that include students with ESN and
indicated that teachers presented lecture or whole group discussion in 37.5% of observation intervals within elementary and middle school academic instruction. Thirty out of 32 studies in this review utilized a one-to-one student to interventionist ratio. As stated previously, it is important to increase research on shared reading intervention in general education settings. This research must also include typical student grouping such as whole and small group instruction, given their widespread use in schools.

Specific areas for research include embedding individualized supports and systematic instruction into shared reading within small group literacy center rotation or whole group book reading in general education classrooms. Wood et al. (2015) investigated the use of shared reading of non-adapted grade-level social studies books with a graphic organizer to support the generation of and response to comprehension questions about the book within special education classrooms. Generalization probes were conducted in general education classrooms in which small groups of peers, including a student with ESN, worked together to complete the same shared reading intervention. Additional research that looks more closely at peer implemented shared reading supports within group assignments in subjects such and science and social studies would also benefit the field.

**Natural Intervention Agents**

The use of natural intervention agents such as teachers, paraprofessionals, related service providers, and peers within educational research is important to the generalizability of interventions to natural school settings. Nineteen out of 32 of the articles in this review were implemented by researchers. Future research should support teachers and other supports that are commonly available in general education settings such as paraprofessionals and peers to implement shared reading interventions. The current review identified only two studies that
incorporated general education teachers as an interventionist. This is consistent with the findings of a recent review of literature on supporting the academic improvement of students with ESN in general education settings conducted by Kuntz and Carter (2019), who found general educators were infrequently involved in intervention research occurring within general education classrooms. It is important that future research focus on supporting general educators to implement shared reading instruction in general education settings because they are the most natural instructor in that setting (Kuntz & Carter, 2019). Future research is also needed to investigate the professional development, collaborative planning time, and planning structures that may be necessary for general and special education teachers to design and implement shared reading interventions with fidelity in general education settings that include students with ESN.

Limitations

There are limitations that should be considered when interpreting the results of this review. First, there are many terms used to reference shared reading interventions. Although every effort was made to incorporate the most commonly used terms into the search for this study, it is possible that studies using other terms for shared reading were overlooked. Additionally, five shared reading studies were located during the hand search process. These studies referenced at least one of the shared reading search terms explicitly in their titles or abstracts. This indicates that the databases used in this may not have access to all relevant journals. Another potential limitation is the quality indicators used. This study utilized the quality indicators developed by Horner et al. 2005 to evaluate the quality of studies included in this review. There are multiple tools available for assessing the quality and rigor in single-case design research, and the results of assessment can vary based on the tool used (Zimmerman et al., 2018). The results of this review must be interpreted with the understanding that they may be
different if study quality had been assessed with different tools such as, What Works Clearinghouse or Single-Case Analysis and Design Framework (SCARF) tools (Zimmerman et al., 2018). However, because no consensus has been reached as to which quality indicators should be used, the Horner et al. 2005 indicators are considered valid.
References


*Cheek, A. E. (2016). Effects of online module+ e-coaching on comprehension instruction for students with significant intellectual disability. The University of North Carolina at Greensboro.*


*Kim, S. Y., Rispoli, M., Lory, C., Gregori, E., & Brodhead, M. T. (2018). The effects of a shared reading intervention on narrative story comprehension and task engagement of


*Mims, P. J. (2009). *The effects of the system of least prompts on teaching comprehension skills during a shared story to students with significant intellectual disabilities*. The University of North Carolina at Charlotte.


*Mims, P. J., Hudson, M. E., & Browder, D. M. (2012). Using read-alouds of grade-level biographies and systematic prompting to promote comprehension for students with


*Roberts, C. A.*, & Leko, M. M. (2013). Integrating functional and academic goals into literacy instruction for adolescents with significant cognitive disabilities through shared story

https://doi.org/10.1177/154079691303800303


*Shurr, J. C. (2012). Literacy access: An examination of the picture plus discussion (PPD) intervention using typical and age appropriate texts (Doctoral dissertation, Purdue University).


Chapter Three: Comparison of Shared Reading Using Modified and Non-Modified Grade-Level Books on Student Comprehension

Federal law requires that students with disabilities, including those with extensive support needs (ESN), such as intellectual disability, autism, and multiple disabilities, are provided access to and make progress in the general education curriculum (Individuals with Disabilities Education Improvement Act (IDEA), 2004). This mandated access to the general education curriculum includes literacy curriculum and instruction. Literacy, which includes listening, speaking, and interacting as well as reading, writing, and spelling, is a valued skill for all people (Downing, 2007). Literacy enhances and creates opportunities for students to interact in their home, community, and school environments, as well as to engage within established adult roles, such as employment (Ruppar et al., 2017). Acquiring the skills that constitute literacy is paramount to ensuring all children gain access to educational and wider community experiences because our modern environment requires constant engagement with text and symbols in school, work, and the community (Cihak et al., 2014; Keefe & Copeland, 2011; Teale & Sulzby, 1985).

The current study investigated the effect of using modified books within a one-on-one shared reading intervention in general education elementary school classrooms on the non-fiction book comprehension of students with ESN.

Literacy instruction has not always been considered an integral component of education for students with ESN (Browder et al., 2011). Literacy programs for students with ESN have historically only provided instruction in sight word reading (Hudson & Test 2011). An overreliance on teaching just one component of reading limits a student’s access to the broader skills associated with literacy, such as listening comprehension and the joy of engaging with literature (Beecher & Childre, 2012; Kliewer & Biklen, 2007). In the last 15 years, legislation
such as the Every Student Succeeds Act has led to an increase in research of evidence-based literacy instruction for students with ESN (Every Student Succeeds Act, 2015). However, the majority of this research was and continues to occur in segregated special education settings. This is concerning, considering students with ESN are most likely to access the general education curriculum and literacy instruction when they are included in general education classrooms (Ruppar et al., 2018).

Relying on studies that occurred in separate settings is problematic given research indicates students with ESN who have access to general education curriculum within inclusive classroom settings experience academic, social, and vocational benefits during school and post-school life (Cosier et al., 2013; Dessemontet et al., 2012; Kurth & Mastergeorge, 2012; Ryndak et al., 2010; Wehmeyer et al., 2003). Many researchers studying literacy for students with ESN allude to the possible benefits of using their findings in inclusive school settings (Browder et al., 2011; Matzen et al., 2010; Mims et al., 2009; Ryndak, 1999; Spooner et al., 2015), yet few have directly investigated literacy interventions in inclusive settings. Such research may conclude that a practice is effective. Still, without the implementation of interventions in general education settings no conclusions can be made about their efficacy in that environment.

Given federal law requires student access to general education curriculum, it is a problem that there is a dearth of research available on how to provide access to that curriculum for students with ESN (Toews & Kurth, 2019). This paucity of research has resulted in teachers’ reporting that they do not know how to succeed in making academic curricula accessible to students with ESN (Saloviita, 2015; Matzen et al., 2010). Additionally, there are noted challenges in the provision of physical access to general education classrooms without the necessary supports to make the curriculum accessible (Ryndak et al., 2009). For example,
students may receive placement in the general education setting, but not receive the supports necessary for them to engage in the content covered in that setting. Thus, research must address the clear gaps in the research to promote positive outcomes for students with ESN.

**Shared Reading**

Shared reading is an instructional strategy that can facilitate access to grade-level material and progress in a variety of literacy skills for students with ESN (see chapter 2). Shared reading is a text-based interaction between a fluent reader and listener in which the fluent reader presents the texts and pauses intermittently to engage the listener in interaction with the text through discussion, question, and response, or physical interaction. There are many common features of shared reading interventions that facilitate the reader-listener interaction that occurs throughout the book reading. Modified age-appropriate books with simplified text, increased picture or text supports within books and response options, and repetitive text lines can support shared reading interventions for students with ESN (Spooner et al., 2009).

Text modification in the form of added repetitive text lines and simplified text are commonly used in shared reading interventions that utilize modified books (See Chapter 2). Repetitive text structures can help students focus on and identify the main concepts or story events in a book. Repeated readings of the same line give students multiple opportunities in the same book to comprehend the main idea and hear new vocabulary in different contexts (Mims et al., 2009). Repetitive text structures have been used extensively in research on shared reading interventions with students with ESN to support student vocabulary acquisition, engagement, and book comprehension (Golloher, 2018; Hudson & Browder, 2015; Ruppar et al., 2017; Spooner et al., 2014). Adding simplified text or re-writing grade-level books at an accessible listening comprehension level is another strategy that can increase access to grade-level books for students
with ESN. Ruppar et al. (2017) used a systematic process (Apitz et al., 2017) to modify the classic novel, *The Odyssey*. The novel was re-written to reduce text complexity and also maintaining the author's genre and voice. Each journey in the book was separated into a chapter with three sentences per page that provided repeated practice with target vocabulary words. Ruppar et al. (2017) embedded the use of the adapted novel in a shared reading intervention within typically occurring instruction in the general education English class, and the student participant with ESN showed an increasing trend in vocabulary knowledge, engagement with the book, and comprehension. The addition of picture supports and individualized response modes can also support students with ESN to access grade-level non-fiction texts within shared reading interventions.

Added image and video support can also be embedded in books and response options used to support the acquisition of new vocabulary and general comprehension of books (Browder et al., 2008). One example of the use of both pictures and video to support vocabulary acquisition during shared reading of science non-fiction books is in a study by Rivera et al. (2017). In this study, picture and video supports were embedded in a paper presented on an iPad while the interventionist presented a task analyzed shared reading lesson. Picture supports were also present during vocabulary question probes in this study. A functional relation was established between the shared reading intervention with the modified non-fiction book and increase science vocabulary knowledge for all three participants with intellectual disability.

**Need for Research Further Research**

Since reading to learn content knowledge and vocabulary from non-fiction texts is one emphasis of the Common Core State Standards for English Language Arts, and all students must access and make progress in the general education curriculum, it is essential that teachers have
strategies to make grade-level non-fiction texts accessible to students with ESN (Common Core State Standards Initiative, 2010). Additionally, non-fiction texts are frequently used across content area instruction in school (e.g., science, social studies, journalism), making it critical that students receive instruction in comprehension strategies using non-fiction materials (Knight et al., 2018). A literature review on shared reading interventions for students with ESN (See Chapter 2) identified 12 studies that utilized non-fiction texts to support the development of literacy skills. None of the identified studies investigated the delivery of all components of the shared reading intervention within general education settings. Therefore, research on shared reading intervention delivery using grade-level non-fiction books in general education settings is warranted.

Lack of research on and knowledge of effective instructional practices for students with ESN in general education settings is a barrier to their inclusion (Saloviita, 2015; Matzen et al., 2010). This dearth of research on effective practices is one reason to increase the investigation of literacy interventions for students with ESN in general education settings. However, it is also imperative to investigate the feasibility of these interventions. In the case of shared reading interventions that utilize modified books, teachers must allot time to plan instruction and develop modified books. Additionally, as many shared reading interventions occur in one-on-one student groupings, teachers must identify time during the school day to deliver the intervention. Since book modification can be a time-consuming process (Browder et al., 2009; Shurr & Taber-Doughty, 2017) and classroom teachers may struggle to identify blocks of time for one-on-one interventions (Kim et al., 2018; Roberts et al., 2019), it is important to include measures social validity in any research on instructional strategies.

**Research Purpose and Rationale**
Book modifications including simplified text, added visuals or text supports within books and question response options, and repetitive text lines have been investigated within research on shared reading to support book comprehension of students with ESN in special and general education settings. Although modified books have supported student comprehension within studies on shared reading, no studies have provided a comparison of student comprehension of modified versus non-modified book shared reading interventions in general education settings using grade level non-fiction books. This study engaged students with ESN in shared reading interventions within general education classrooms, alternating between the use of a shared reading intervention using modified and non-modified grade level non-fiction books to evaluate the effect of book modification on student comprehension. Results address a gap in the research base on literacy instruction using modified grade-level non-fiction books in shared reading interventions. Additionally, this study addresses a need in the field of education for increased research on literacy instruction for students with ESN in general education settings.

The following research questions were investigated.

1. Do students with ESN acquire more comprehension details when involved in a shared reading intervention with grade-level non-fiction books with book modifications compared to non-modified books?

2. Do general and special educators think the one-on-one shared reading intervention using modified grade-level non-fiction books is feasible to implement and meaningful to their students with ESN.

Method

Participants
Following university human subjects, district research, and school principal project approval, special education teachers at one elementary school were asked to identify students who met the following inclusion criteria: (a) has an intellectual disability, autism, or multiple disabilities and a concomitant significant cognitive disability; (b) attends a general education class during literacy rotations at least three times per week (or will attend a general education class during center rotations for the duration of the study), and (c) the student does not miss more than an average of one school day per month. Special education teachers contacted and received project consent from parents of three students who met all inclusion criteria.

After receiving parent consent, special education teachers completed a student demographic survey and The Academic & Communication Assessment Survey (ACAS), an adapted version of the First Contact Survey from Dynamic Learning Maps (Nash et al., 2016) to provide detailed information about student support needs related to literacy, communication, and behavior. The demographic and ACAS surveys are found in Appendix B, Figure 1B, and Figure 2B respectively. The student’s special and general education teachers also participated in an interview about each student participant which included questions about, (a) present levels in literacy skills (i.e., engagement with books, phonemic awareness, phonics, fluency, vocabulary, comprehension), (b) current literacy interventions or programs the student participates in, (c) preferred response modes the student uses (e.g., verbal, aided AAC, unaided AAC), (d) behavior support systems the student typically uses, and (e) any other information the teacher thinks is important for a person to know who will be working on reading with the student participant (e.g., student interest or triggers for frustration). The teacher interview questions are found in Appendix B, Figure 3B.
Three participants were identified who met the inclusion criteria. However, one student was dropped from the study because an appropriate prompting strategy was not determined, which impacted the design of the study. Specifically, this student’s intervention focused primarily on prompting strategies rather than book modification and therefore was not appropriate for inclusion in the study. Ultimately, then, two elementary students who attended the same public elementary school in a suburb of a large midwestern city participated. The school had a specialized educational program with three classrooms for students with autism. Both students attended this program, which was not at their neighborhood school. Student demographic information can be found in Table 5.

**Ben**

Ben is a 4th grade, white, male student with autism, and moderate intellectual disability. Ben only speaks English at school and at home. He receives special education services within a separate special education classroom for most of the school day. Ben attends a 4th-grade general education classroom during academic instructional time for approximately one hour a day during morning silent reading time and science or social studies. He communicates verbally in one- or two-word phrases and has an approximately 51-200-word spontaneous vocabulary. Ben’s special education teacher reported that he reads independently as a middle to late first-grade level and has a literacy goal within his individualized educational program (IEP) related to answering "wh" comprehension questions about text he has heard read aloud. Ben receives literacy intervention in the special education classroom using an alternative special education curriculum and teacher created intervention materials.

**Camilla**
Camilla is a first-grade, white, female student with autism and moderate intellectual disability. Camilla only speaks English at school and at home. She receives special education services within a separate special education classroom for most of the school day. Camilla attends a first-grade general education class during academic instructional times for 15 minutes a day for a partner reading literacy center rotation. She communicates verbally in one- or two-word phrases and has an approximately 51-200-word spontaneous vocabulary. Camilla’s special education teacher reported that she is currently working on learning letter names and sounds. Camilla has literacy-related IEP goals to expressively identifying upper and lowercase letters and identifying the main idea of a text she has heard read aloud. She receives literacy intervention in the special education classroom using an alternative special education curriculum and teacher created intervention materials.
## Table 5

**Student Participant Demographics**

<table>
<thead>
<tr>
<th>Participant Pseudonym</th>
<th>Grade</th>
<th>Age</th>
<th>Ethnicity</th>
<th>Primary Language</th>
<th>Primary Disability</th>
<th>Completes Alternate State Assessment</th>
<th>Behavior Support Plan</th>
<th>Communication</th>
<th>Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td>4</td>
<td>9</td>
<td>White</td>
<td>English</td>
<td>Autism</td>
<td>Yes</td>
<td>No</td>
<td>Single words or short phrases orally produced; uses approximately 51-200 words spontaneously</td>
<td>Has literacy goal to answer “wh” questions about text; reads independently at a first-grade level; frequently participates in reading activities in special education class; answers questions about books with 1-2-word oral responses.</td>
</tr>
<tr>
<td>Camilla</td>
<td>1</td>
<td>7</td>
<td>White</td>
<td>English</td>
<td>Autism</td>
<td>Too Young</td>
<td>Yes</td>
<td>Single words or short phrases orally produced; uses approximately 51-200 words spontaneously; speaks very softly</td>
<td>Has literacy goal in IEP to identify upper- and lower-case letters and identify main idea of text; frequently participates in reading activities in special and general education setting; answers questions about books with 1-2-word oral responses.</td>
</tr>
</tbody>
</table>

*Note. BSP = behavior support plan, AAC = augmentative and alternative communication, IEP = individualized educational program, ID = intellectual disability*
Setting and Implementer

One suburban elementary school in a midwestern state served as the location for this study. Approximately 300 students attended this school, with 36.9% receiving free or discounted lunch. The majority of students, 70.3%, were white, and 17.6% were Hispanic, 5.2% were two or more races, 4.6% were African American, 1.6% were Asian, and 0.7% identified as other races. All intervention sessions occurred in the first or fourth-grade general education classes attended by the two student participants. There was an average of 17 students and 1 adult in each classroom.

Sessions occurred in a one-to-one format with the implementer and student participant. The implementer was me, Samantha Toews, a doctoral candidate in special education with five years of teaching experience working with students with ESN in general education settings. All shared reading intervention sessions occurred in the general education classroom. All pre-test sessions occurred in the same general education classrooms as the shared reading intervention with the exception on one pre-test sessions for Camilla which occurred in the special education classroom due to a schedule miscommunication between myself and the special education teacher. Pre-test and intervention sessions were conducted in an area of the classroom that was most conducive for learning for the participant. The Camilla read on the carpet in the front of the room in the vicinity of other peers reading silently or in pairs. Ben read at his desk in a pod of four desks during a time when his peers were rotating through independent and teacher-led literacy centers. Paraprofessionals who typically supported the student participants were asked to support students in other classes during the intervention. Nonparticipating students and the general education teacher engaged in other typically occurring literacy center activities during
sessions. The general education teacher was the only adult in the room other than myself. No paraprofessionals or special education teachers were present.

**Materials**

Materials included modified and non-modified books. I refer to books as the a multiple page document that is used to lead the shared reading lesson. I refer to the phrases or words within the book as text or text sections. Ten non-fiction grade-level books were selected for each participant. Books were retrieved from ReadingA-Z.com. All books for each student came from the Reading A-Z level that represented the grade level of their general education class to ensure equivalence. Camilla’s books were level I (Fountas and Pinnell level I, Lexile 430-530), and Ben’s books were level U (Fountas and Pinnell level Q, Lexile 820-1030). Books from ReadingA-Z.com were selected due to their use as part of the existing general education curriculum at the participating school.

A three-step process was used to randomly assign books to conditions, then the order of reading within conditions, and finally, sessions were assigned to conditions. True randomization using a random number generator was used to assign books to conditions (modified or non-modified shared reading) and identify the order in which each book would be read within each condition. Block randomization (2 sessions per block) was used to randomly assign sessions 1-10 to conditions. Books were randomly assigned to each of the 10 sessions of this study using a random number generator. The names of books and their assigned conditions can be found in Table 6. Characteristics of the materials used in each condition are described in the following section, and examples are shown in Appendix B, Figure 4B. Books were printed in color on 11X17 paper. The time required to prepare materials for the non-modified book condition was approximately 20 minutes per book. The time required to prepare materials for the modified
book condition was approximately one hour per book. These times included the planning, printing, and assembly of materials.

**Non-Modified Book Condition**

The non-modified books were read to each student without any changes to the original book. Comprehension questions were written in the same style and difficulty level as questions in the modified book conditions. In the non-modified book condition, Ben and Camilla heard five open-ended comprehensions read aloud. They did not access any multiple-choice options or see the question.

**Modified Book Condition**

Books were modified using the six-step process for modifying grade-level books outlined by Apitz et al. (2017). Although this guide indicates steps to create a stand-alone adapted book, the book modifications in this study were embedded within the typical book by gluing in pictures and modified text lines into the margins of the books. The within-book modifications used in this study are intended to supplement the typical grade-level book rather than replace it. Each modified book included a repetitive text line that appeared at least four times and three or four adapted text sections that were added to highlight key ideas or vocabulary. In addition to within book modifications, a pre-reading concept sheet was created for each book. This sheet contained three or four images and each of the adapted text sections that were added within the book. Students also had access to response options that had been adapted to support their expression of book comprehension. Ben received a one-page comprehension question response sheet with five multiple-choice questions, each with three options. Camilla received five multiple-choice comprehension questions, each with three options, that were embedded directly within the
modified book. Examples of modified and non-modified books, pre-reading sheets, and individualized response options are found in Figure 4B.
### Table 6

**Books by Condition**

<table>
<thead>
<tr>
<th>Student</th>
<th>Non-Modified Books</th>
<th>Modified Books</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td>Galapagos Wonder</td>
<td>The Executive Branch</td>
</tr>
<tr>
<td></td>
<td>1849 The California Gold Rush</td>
<td>What Happens When You Flush</td>
</tr>
<tr>
<td></td>
<td>Get Moving! All About Muscles</td>
<td>Deep Trouble</td>
</tr>
<tr>
<td></td>
<td>Life Cycles</td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>Animal Discoveries</td>
<td>The Erie Canal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camilla</td>
<td>Giant Pandas</td>
<td>Fast and Faster</td>
</tr>
<tr>
<td></td>
<td>Two Makes Twins</td>
<td>Hibernation</td>
</tr>
<tr>
<td></td>
<td>Blizzards</td>
<td>Jane Goodall</td>
</tr>
<tr>
<td></td>
<td>Slow and Slower</td>
<td>Bigger Than a Monster</td>
</tr>
<tr>
<td></td>
<td>Komodo Dragons</td>
<td>Truck</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rocky Mountain National Park</td>
</tr>
</tbody>
</table>
**Response Definitions and Measurement Systems**

The dependent variable in this study was student comprehension of grade-level non-fiction books as measured by independent, accurate responses to comprehension questions after a book was read aloud. Each book had five opportunities to answer comprehension questions during each session. Comprehension questions answered accurately and independently within 5 s of the initial cue were recorded as correct. Responses were recorded incorrect if either the student gave an inaccurate response or failed to respond within 5 s of the end of the question.

Ben and Camilla answered questions orally or by pointing to text answer options (answer options only available during modified book condition). All five comprehension questions were directly related to content in each non-fiction book. Comprehension questions consisted of “wh” questions (who, what, where, when, why, how). Examples of comprehension questions include, “Who invented flash photography?,” “What animal is this book about?,” “Where is Rocky Mountain National Park?,” “When do animals hibernate?,” “Why did the bear dig a hole?,” or “How do whale sharks move?.”

**Experimental Design**

A repeated acquisition (RA) single case research design (Ledford & Gast, 2018) was used to evaluate the effectiveness of modified books as tools to improve the accuracy of student comprehension compared to non-modified books. Book comprehension was defined as correct responses to comprehension questions immediately after listening to the page in which the answer to questions can be found. The RA design is one of a limited number of single-case designs that assess comparisons between two interventions or conditions for teaching the acquisition of academic skills expected to be acquired quickly (e.g., immediately after reading; Ledford & Gast, 2018). Additionally, RA designs are appropriate for measuring non-reversible
skills such as book comprehension (Ledford & Gast, 2018), and have been used in recent research on literacy interventions (Dennis, 2016; Sullivan et al., 2013). Another benefit of using a RA design is that it allows for intra-subject replication (Gast & Ledford, 2018). In other words, the quick alternation of interventions in this design provides for multiple comparisons of effect between the two interventions for a single participant. Conducting multiple RA designs in this study allows for inter-subject replication across participants.

**Pre-Study Procedures**

Prior to the beginning of the study, I read 5-15 books with each student to identify the appropriate difficulty level of questions for each student, along with the types and intensity of modifications required for each student. Additionally, these reading sessions allowed the students to become comfortable reading in a new classroom setting. I began the first pre-study reading session by reading a non-modified grade-level non-fiction book and asking grade-level comprehension questions. If the student did not respond to two questions in a row or responded incorrectly to five questions in a row, I provided increments of more text modification, more simplified questions, and different response mode options until the student could consistently answer most but not all of the questions after the first read of a book. Once I felt I had identified an appropriate level of adaptation, I read one more book with the student that contained all of the characteristics that were used in the study to ensure the student responded to at least three out of five comprehension questions before the baseline phase of the study began.

**Study Procedures**

The study involved 10 shared reading sessions for each student that lasted 10-20-minutes. Each session in both conditions included three components: (a) pre-test, (b) shared reading, and (c) post-test. The average duration of the pre-test was 2m 23s. Pre-test for Ben lasted an average
of 2m 12s (range 1m 49s to 2m 37s). Pre-test for Camilla lasted an average of 2m 34s (1m 12s to 11m 25s). The shared reading and post-test occurred simultaneously. The average duration for shared reading and post-test in the non-modified book condition was 10m 38s. The non-modified book shared reading sessions for Ben lasted an average of 9m 57s (range 8m 45s to 13m 41s) and an average of 11m 3s (6m 51s to 14m 35s) for Camilla. The average duration for shared reading and post-test in the modified book reading condition was 16m 29s. The modified book shared reading sessions for Ben lasted an average of 17m 56s (range 17m 12s to 20m 43s) and an average of 13m 12s (11m 11s to 15m 40s) for Camilla.

**Pre-Test**

Pre-test procedures were identical across the modified and non-modified book conditions. The pre-test occurred exactly one session before the reading of the book represented in the pre-test. A Pre-test session began when I said, “Hi (student name). We are going to read this book later. I am going to ask you a few questions about this book before we read it. It’s ok if you do not know the answers because we haven’t read the book yet!” After the introduction, I asked the five comprehension questions that would be asked during the shared reading lesson about the book. A 5 s response interval was provided after the presentation of each question. If the student responded accurately or inaccurately within the 5 s, I said, “Thank you” and moved on to the next question. If the student did not respond after 5 s, I said, “Thank you.” This procedure was repeated for each of the five questions. After the last question, I said, “Thank you for answering those questions. Now let’s read a book together.” This last statement marked the beginning of the reading procedure for the book for which the student participant had completed the pre-test in the previous session.

**Shared-Reading and Post-Test**
The procedures for both the non-modified and modified book conditions were identical except the use of modified or non-modified books and presentation of response options during reading for only the modified book condition. The reading procedure began with me, saying, "Let's read a book together." I then read the book out loud to the participant. All text on every page was read during the reading procedure, including captions, text boxes, and modified text that has been added into the book in the modified book condition. The reading procedure was paused at five points during each session to ask a post-test question; post-test questions were delivered on the page in which the content needed for accurate answers was provided. I cued the transition from the shared reading procedure to the post-test procedure by stating, “(Student name), I have a question, are you ready?” Then I stated the question exactly and provided a 5 s response interval. If the student responded correctly within 5 s, they received verbal praise. If the student answered incorrectly or did not respond within 5 s, I stated the correct answer. During the modified book reading condition, I stated the correct answer and pointed to it on the student response sheet. No questions were asked outside of the five pre-planned comprehension questions. The transition from the post-test procedure back to the reading procedure was indicated by me saying, “Let’s keep reading.” This process repeated until I had finished reading the last page of the book.

**Interobserver Agreement**

Secondary observer data on participant responses to comprehension questions were collected during 40% of sessions across conditions and participants via video recorded sessions by a trained second rater (Ledford & Gast, 2018). The training involved watching and rating session videos until the second rater and I agreed on at least 90% of observations across two consecutive sessions for both interobserver agreement (IOA). IOA was calculated using point-
by-point agreement using the following formula \[\text{agreements}/(\text{agreements} + \text{disagreements}) \times 100\]. IOA for student response to non-modified book pre-test questions was 100% for both participants. Overall, IOA was 95% for student response to modified book pre-test question accuracy across participants, with IOA at 100% for Ben and 90% (range 80%-100%) for Camilla. The second rater and I came to consensus on the single disagreement through watching the video together after IOA had been completed. IOA for both the modified and non-modified post-test shared reading sessions questions was 100% for all participants.

**Procedural Fidelity**

Procedural fidelity data were collected on 40% of all sessions across participants and conditions by a trained second rater (Ledford & Gast, 2018). Fidelity data were collected using direct, systematic, observational recording via video using a trial-based behavioral checklist (available in Appendix B, Figure 5B). The second rater watched session videos for each participant: two non-modified pre-test, two non-modified post-test shared reading, two modified pre-test, and two modified post-test shared reading sessions. Overall procedural fidelity for non-modified condition pre-test sessions across participants was 98.8%, with procedural fidelity by participant at 100% for Ben and 97.6% (range 95.5%-100%) for Camilla. The error in procedural fidelity within the non-modified pre-test condition for Camilla occurred when I did not say “thank you” after the student provided an answer in one out of five opportunities in a session. Overall procedural fidelity for modified condition pre-test sessions across participants was 100%, with procedural fidelity by participant at 100% for Ben and 100% for Camilla. Overall procedural fidelity for non-modified condition post-test shared reading sessions across participants was 96.6%, with procedural fidelity by participant at 100% for Ben and 93.9% (range 87.4%-100%) for Camilla. Overall procedural fidelity for modified condition post-test
shared reading sessions across participants was 97.6%, with procedural fidelity by participant at 100% for Ben and 95.1% (range 90%-98.4%) for Camilla. The most commonly missed procedural fidelity steps in both the non-modified and modified post-test shared reading sessions for Camilla were not inviting her to engage with the cover page or table of contents, and not thanking her for reading with me at the conclusion of the shared reading session.

**Social Validity**

Following the completion of the study, the special education and general education teachers for both participants completed a Likert style social validity survey and in-person interview. The in-person social validity interview questions and paper-based survey are found in Appendix B, Figure 6B and 7B respectively. I shared all study materials, graphed student response data, and a description of the material creation process with teachers prior to their completion of the survey and interview. The goal of the survey and interview was to investigate the extent to which each teacher felt the intervention would be feasible to continue in the future and meaningful to student learning. The questions on the social validity survey are found in Table 3. Each teacher interview was conducted one-on-one after the completion of the study and ranged from 5 to 20 minutes in length. The interview consisted of four questions, including perceived benefits of the intervention, teacher likelihood to use the intervention in the future, barriers or perceived negative effects of the intervention, and an opportunity to share any opinions or suggestions to improve the intervention. I engaged in member-checking of the written summary of survey and interview data with each of the four teachers to ensure the accuracy of reported quotes and sentiments.

**Data Analysis**
A structured visual analysis procedure was used to analyze the presence or absence of a functional relation (Ledford et al., 2018). Level and consistency of change in comprehension scores between pre- and post-test were compared across modified and non-modified shared reading sessions. Level and consistency of change are the most important characteristics of the data in a repeated acquisition design study (Ledford & Gast, 2018). Second, the results of the visual analysis were used to identify if there was a functional relation between the introduction of the modified grade-level non-fiction book and an increase in student comprehension post-test score. In this study, a functional relation between book modifications and a change in book comprehension was established if the increase in the number of comprehension questions answered correctly were consistently higher in one condition over the other (Ledford & Gast, 2018). A separate structured visual analysis procedure was conducted for each student participant.

**Results**

The impact of the use of modified grade level non-fiction books during shared reading on student book comprehension was explored by rapidly alternating shared reading sessions using modified and non-modified books using a repeated acquisition single case research design.

**Ben**

Graphed data of the number of correct responses to comprehension questions across conditions for Ben are found in Figure 2. Ben answered zero questions correctly in all pre-test sessions in the non-modified book condition. During the non-modified book post-test shared reading sessions, Ben’s accurate responses to comprehension questions remained at zero in three sessions, increased by one question correct in one session, and increased by two questions correct in one session. Therefore, Ben showed no increase in correct responses from the pre-test.
to post-test in three sessions and an increase of one or two questions correct in two sessions in the non-modified book condition. Ben’s accurate responses increased by a minimum of zero questions and a maximum of two comprehension questions across all five modified book pre- to post-test shared reading sessions.

Ben answered zero questions correctly in four pre-test sessions and one question correctly in one pre-test session in the modified book condition. During the modified book pre- to post-test shared reading sessions, Ben’s accurate responses to comprehension questions increased by five questions correct in one session, increased by four correct in three sessions, and increased by three correct in one session. Therefore, Ben showed an increase in correct responses in all post-test shared reading sessions when compared to pre-test sessions in the modified book condition. Ben’s accurate responses increased by a minimum of three questions and a maximum of five comprehension questions across all five modified book post-test shared reading sessions.

The level and consistency of change in Ben’s comprehension scores from pre-test to post-test were compared between the modified and non-modified book conditions. Ben showed a consistently higher level of correct responding in the modified book condition from the pre-test to post-test sessions. Ben’s lowest increase in correct responses in the modified book condition was three questions. When this is compared to an increase of two accurate responses as his highest increase in the non-modified book condition, it is clear that the modified book condition yielded a higher-level of accurate responses from Ben. A functional relation between modified books and correct responding was established by Ben’s achievement of a larger increase in comprehension score during the modified shared book reading in five out of five direct comparisons of the modified and non-modified book conditions.
Figure 2

Comprehension Results for Ben

[Graph showing comprehension results for Ben with sessions and comprehension questions answered correctly.]
Camilla

Graphed data of the number of correct responses to comprehension questions across conditions for Camilla are found in Figure 3. Camilla answered zero questions correct in all pre-test sessions in the non-modified book condition. During the non-modified book post-test shared reading sessions, Camilla’s accurate responses to comprehension questions remained at zero in two sessions, increased by one question correct in two sessions, and increased by three questions correct in one session. Therefore, Camilla did not consistently demonstrate increases in her correct responding in the non-modified book condition.

Camilla answered zero questions correct in three pre-test sessions and one question correct in two pre-test sessions in the modified book condition. Camilla’s accurate responses increased by a minimum of zero questions and a maximum of three comprehension questions across all five modified book pre- to post-test shared reading sessions. During the modified book post-test shared reading sessions, Camilla’s level of accurate responses to comprehension questions increased by five questions in one session, increased by four in one session, increased by three in one session, and increased by two in one session. Therefore, Camilla showed an increase in correct responses in all post-test shared reading sessions when compared to pre-test sessions in the modified book condition. Camilla’s accurate responses increased by a minimum of two questions and a maximum of five comprehension questions across all five modified book pre- to post-test shared reading sessions.

The level and consistency of change in Camilla’s comprehension scores from pre-test to post-test were compared between the modified and non-modified book conditions. Camilla showed a higher level of comprehension score increase in the modified book condition from the pre-test to post-test sessions in four out of five comparisons to the non-modified shared reading
pre- to post-test scores. There was one non-modified book reading session in which Camilla demonstrated an increase of three accurate comprehension questions. This level of change was higher and not consistent with the other sessions in the non-modified condition. One explanation for the increased accuracy in comprehension responses seen in session two, a non-modified book session, could be that Camilla had increased background knowledge about pandas, the topic of the book used in session two. Camilla expressed excitement to read about pandas prior to starting session two, and her special education teacher also shared that Camilla has a strong interest in books about animals. Although there was some overlap between data across conditions and inconsistency in the number of correct responses from Camilla in the modified condition, a functional relation between modified books and correct responding was established by Camilla achieving a higher level of correct responses in the modified book shared reading condition in all five out of five comparisons to the non-modified shared reading condition.
Figure 3

Comprehension Results for Camilla
Social Validity

The following sections describe teacher responses to the social validity survey and in-person interview.

Survey

Teacher responses to the social validity survey can be found in Table 7. The general and special education teachers who support Ben and Camilla agreed (slightly or strongly) that students with ESN can learn academic content in general education settings. Teachers also reported varying levels of agreement that the intervention could support students to access the general education curriculum and progress in their individualized learning goals. All teachers strongly agreed that the student support needs were extensive enough to warrant the use of modified grade-level books to facilitate access to content. Additionally, teachers would suggest the intervention to other teachers and could see themselves or a paraprofessional implementing the intervention. The lowest marks on the social validity survey were in the areas of the time and cost necessary to implement this intervention. These areas are explored more deeply through the interview described in the following section.

Interview

Teachers cited academic, social, and emotional benefits to the provision of the one-on-one shared reading intervention in the general education setting. Camilla’s special education teacher explained, “She wasn't just a body in the classroom. There was somebody there with her that was doing academic kinds of things with her.” The special education teacher saw this as more academically beneficial than the 15 minutes per day that Camilla attended the general education class for partner reading. Camilla’s general education teacher agreed stating, “I think when they partner read she would just sit and the other kids would be reading…but with this one
[the shared reading intervention], she was actually participating and answering questions.” Ben’s special education teacher felt “it gave [Ben] confidence being able to be in class and reading a book.” He explained that Ben typically completes worksheets sent from the special education classroom during silent reading time in the general education classroom, and the special education teacher could tell Ben was excited to read a book while other students were also reading. Ben’s general education teacher added that it was good for all of her students to see that Ben also reads books, because now that the study is over, “two days [Ben] is now working with [fourth-grade student]…and they read together, and he seems to really enjoy that too, and that's not using any adapted materials. That's just letting them read the text from that week’s work, and they did help [Ben] out if he doesn't know a word.” All teachers shared one or more benefits they felt could be or were had by students as a result of the shared reading intervention in the general education setting.

During the interview, teachers shared that the biggest barrier they perceive to using shared reading intervention in general education settings with modified non-fiction books was the time and cost to create materials and that time needed to implement the intervention in a one-on-one grouping. Ben and Camilla’s special education teachers both explained they could see themselves creating the individualized modified books, but it would not be feasible to do that during the school week. Ben’s special education teacher added that “the intimidating part is doing it week by week. I would need to sit down and just knock out, say, 50 stories over the summer, and that way, I can just start pulling things for kids at different grade levels.” Both general education teachers felt material creation would be time-consuming but expressed they felt that time commitment would be worthwhile to support the students to access authentic books. Ben’s general education teacher stated, “It is like anything else, if you have any other
student with low needs or high needs in the classroom, you're still making supplemental work for them too. So it's no different for [Ben].” Both general education teachers mentioned that printing the books would be a large barrier for them because they are only allotted a very small amount of color printing per year. Special education teachers expressed that they have fewer restrictions on color printing and could print the needed materials for this intervention.

When asked if teachers felt they would implement the shared reading intervention in the future, all teachers responded that they felt it would be difficult for them to deliver an intervention to one student for 15 minutes in the general education classroom. General educators cited the need to support other students in their class, and both special educators explained that they would not be able to leave their special education classrooms to deliver the intervention in the general education setting. All interviewees felt the intervention would be most feasible for a paraprofessional to deliver in the general education classroom. Camilla’s special education teacher explained, “Ideally, I would be able to train a para to do it… I could see myself doing that with her if staffing were different in these programs. If I leave and I leave the classroom so that there's going to be five children with only two adults…and the kids that are left in here are really challenging. That's the barrier, right there, staffing.” Ben’s general education teacher mentioned that the intervention would be more feasible for her to implement if it were included as part of group instruction. She said, “you [Samantha Toews] did one-on-one, and that time in the classroom, that's very valuable to me, that's why I think a group setting is so much better because you're at least attending to several students instead of just one student out of your whole class.” In summary, teachers felt the intervention would be most feasibly implemented by paraprofessionals or adapted to occur during group instruction.
Table 7

*Social Validity Survey Results*

<table>
<thead>
<tr>
<th>Students with ESN can learn academic content in the general education classroom.</th>
<th>This process supported (student) progress on their individual learning goals.</th>
<th>The shared reading intervention seems effective in supporting (student) access to general education curriculum.</th>
<th>(Student’s) learning needs are significant enough to justify the use of adapted texts and this kind of shared reading intervention.</th>
<th>The intervention is practical for myself or a para-professional to implement in the general education classroom.</th>
<th>I will use some of the strategies or supports (modified books, planned questions, time-delay) to support students in the future.</th>
<th>I would recommend using shared reading with modified non-fiction text to other teachers.</th>
<th>The demands on my time to create materials for this type of shared reading intervention are reasonable.</th>
<th>The cost related to this intervention are feasible with the resources I have.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Educator (Ben)</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>General Educator (Ben)</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Special Educator (Camilla)</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>General Educator (Camilla)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Note.* text = non-fiction book, 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree
Discussion

Two separate repeated acquisition design studies evaluated the impact of modified grade-level non-fiction books used within shared reading interventions in general education classrooms on the book comprehension of two students with ESN. Findings from this study indicate the two students with ESN were able to access and express comprehension of adapted grade-level non-fiction books during a shared reading intervention at a higher level than when they participated in the same shared reading intervention with non-modified books. A functional relation between modified books and correct responding was established for both Ben and Camilla by the achievement of a larger increase in comprehension scores during the modified shared book reading in five out of five direct comparisons of the modified and non-modified book conditions. Access to the modified books and individualized response options during shared reading was a superior intervention to shared reading with non-modified grade-level non-fiction books. These findings add to the growing base of support for shared reading interventions and the efficacy of book modification to support comprehension of students with ESN in general education settings.

The combination of a pre-reading concept review sheet, simplified text sections and repetitive text lines embedded within grade-level non-fiction books, and comprehension questions with individualized response options within the modified book shared reading condition in this study were effective in supporting higher book comprehension for Ben and Camilla. The characteristics of modified grade-level non-fiction books used in this study may be useful for making a variety of curricular areas more accessible due to their non-fiction nature. One important way in which the current study expands on existing research is by evaluating student comprehension of non-fiction rather than fictional books within shared reading interventions in general education settings. Ben’s special education teacher identified the
possible benefits of using the one-on-one shared reading of non-fiction books to provide pre-teaching of content that would be covered in different curricular areas. He explained, “If I picked a story that front-loaded something they may already be doing in social studies or something they be doing in reading…I could give the one-on-one (shared reading intervention) for 20 minutes, then maybe [Ben] goes back for science for 20 minutes, and we've already been reading about that. I can see tons of applications for it.” Ben and Camilla’s teachers could consider using grade-level textbooks or strategically selected non-fiction texts that are aligned with grade-level science or social studies standards to increase student access to these content areas in the general education setting. The findings from this study indicate that such book modification for students with ESN may support teachers to meet federal requirements of providing access to and ensuring students make progress in the general education curriculum (IDEA, 2004).

Teachers indicated that the one-on-one shared reading intervention seemed meaningful and beneficial to students. A review of teacher interview transcripts revealed teachers reported academic, social, and emotional benefits to the use of shared reading within the general education classroom. These sentiments are echoed by research that has associated the education of students with ESN in general education settings with (a) higher learning expectations; (b) increased engagement, participation, social interactions, and access to general education curriculum; (c) and improved academic, communication, and social skills (Carter, 2017; Kleinert et al., 2015; Kurth & Mastergeorge, 2010; Sauer & Jorgensen, 2016). Particularly in the area of literacy, students with ESN are 10 times more likely to access literacy instruction within general education settings when compared to special education settings (Ruppar et al., 2018).

Although teachers reported benefits of the shared reading intervention, general and special educators perceived it would be difficult for them to implement a 20-minute intervention
with only one student within the general education classroom. General educators suggested the integration of the intervention within group instruction to improve the feasibility of the intervention. Special educators shared that they are not able to provide instruction in the general education setting within the current staffing structures at their campuses. Teachers shared an additional barrier to the implementation of this intervention is the approximately one hour it took to prepare a modified book lesson and the cost associated with printing materials in color. The teachers’ positive impression of the intervention indicates that with a restructuring of existing resources and roles within their school, literacy instruction in general education settings for students with ESN, such as this one-on-one shared reading intervention, may be more feasible (McCart et al., 2014). The following section provides directions for future research, practice, and policy that may increase the implementation feasibility of shared reading interventions using modified grade-level non-fiction books to support students with ESN in general education settings.

**Limitations and Future Directions for Research**

There are several limitations to consider when interpreting the results of this study. Although the sample size in the current study was adequate for the selected design, no claims of generalizability can be made to other groups of student populations. It is with the systematic replication of this study that is needed to generate a strong base of support. Replication of this study with students from different geographical areas, races, genders, socioeconomic statuses, and who used primary modes of communication other than verbal speech would support more complete knowledge of the impact of modified grade-level non-fiction books on comprehension of students with ESN.
This intervention was implemented by me, Samantha Toews, who was not a member of the school team. Researcher implemented studies impact the generalizability of findings to authentic intervention agents such as general education teachers, special education teachers, paraprofessionals, and peers. There is a need for research implemented by authentic intervention agents in typical student groupings to advance knowledge about the possible efficacy and feasibility of shared reading interventions with modified books in general education settings. Future research on shared reading interventions should focus on: (a) the supports necessary for authentic intervention agents to implement shared reading interventions in general education settings that include students with ESN and (b) the student learning outcomes of teacher, paraprofessional, or peer-delivered shared reading interventions in general education settings. In addition to research involving authentic intervention agents, future research must investigate how shared reading interventions can be integrated into small and whole group instruction. Both Ben and Camilla’s general education teachers expressed that they would not be able to spend twenty minutes multiple times per week teaching a single student. Ben’s teacher suggested that she would be more interested in delivering the intervention if it was in a group format using a book that was part of the class curriculum. It is important that future research investigate the use of shared reading using authentic grade-level books in small and whole group instruction to support the individualized learning goals of students with ESN.

There is an urgent need within the field of education for increased research on literacy instructional strategies for students with ESN that can be effectively and efficiently embedded within general education settings (Toews & Kurth, 2019). Shared reading is an instructional practice with a moderate evidence base showing it can be an effective literacy intervention to support book comprehension and emergent literacy skill development in students with ESN.
(Hudson & Test, 2011; See Chapter 2). Although this base of support exists, most studies on shared reading and other literacy instructional strategies for students with ESN have been conducted in part or whole within separate special education settings rather than general education settings (Afacan et al., 2018; Hudson & Test, 2011). Only two other studies have investigated the use of shared reading using modified books for students with ESN delivered entirely in general education settings (i.e., Courtade et al., 2013; Ruppar et al., 2017). Courtade et al. (2013) used adapted age-appropriate fiction book to increase student engagement with books in whole group general education literacy instruction. Ruppar et al. (2017) used shared reading of a modified grade-level novel to systematically support emergent literacy skills, fictional book comprehension, and expansion of sign language vocabulary of a student with ESN within a general education setting. The present study adds to the growing base of knowledge on the efficacy of embedding shared reading interventions within general education settings to support students with ESN to read non-fiction texts. However, more research is needed to understand the most effective and efficient methods for delivering shared reading interventions in inclusive settings.

Additionally, all current research that isolates the impact of shared reading interventions on student literacy outcomes are single-case research designs. A recent large, randomized control trial study conducted by Hunt et al. (2019) investigated the impact of a multi-component literacy intervention, which included a shared reading component, delivered in small groups within general education settings on the literacy skills of students with ESN. Although their findings showed students who received the multi-component intervention made more gains in multiple literacy skill areas than students who did not receive the intervention, it is not possible to separate the impact of the shared reading component of the intervention. Larger, group-level
research that isolates the impact of shared reading on student literacy skill development is needed to strengthen the evidence on the use of shared reading interventions in inclusive settings.

Research on systematic methods for the identification of the type and intensity of book modification students need to access and make progress toward their literacy goals is needed. The pre-study reading sessions that I engaged in for this study were integral in the identification of effective student literacy supports. For example, in the current study, modified text sections for Ben were two or three sentences, and those for Camilla were only one. A systematic approach to trialing different lengths and complexities of book modification was used until I identified the supports that would appropriately challenge students. Although research exists on the benefits of book modifications to support content knowledge and skill acquisition, there is little guidance on how teachers can systematically identify the level of modification that will be most effective (Kurth & Keegan, 2014, Mims et al., 2012; Roberts & Leko, 2013). Increased research in this area could support practicing teachers in the creation of accessible literacy materials. Additionally, teacher preparation faculty at universities could use research on modification intensity identification to integrate new guidance into their methods courses.

**Implications for Practice**

Shared reading using modified grade-level non-fiction books may decrease teacher need for alternative special education literacy curricula. This study found shared reading using modified books, pre-reading concept review sheets, and pre-planned comprehension questions with individualized response options was a valuable strategy for supporting access to and progress on individualized student comprehension goals. The modifications used to support comprehension in this study were embedded directly within typical grade level non-fiction books. All book text, including the embedded simplified text, was read aloud to the students
during the shared reading intervention. This allowed students to access the rich and deep content of the grade-level book with supplemental supports to increase comprehension.

These results and other examples of students accessing modified grade-level books support a departure from reliance on alternative special education literacy curricula to support literacy skill development in students with ESN. The use of packaged special education curricula such as those used by student participants in this study, Unique Learning Systems (News 2 You, 2014) or Early Literacy Skills Builder (Browder et al., 2008), can serve as a barrier to students accessing instruction in general education settings (Hanreddy & Ostlund, 2019). Special education curricula have also been found to lack the rich content, scope and sequence, and exposure to deep content discussion students gain from authentic books presented in general education settings (Taub et al., 2017). Together, these findings promote the use of modified grade-level books in place of packaged special education curricula in literacy instruction for students with ESN.
References


https://doi.org/10.1177/0271121415577399


http://doi.org/10.1177/1540796914534634


Evaluation.


Ruppar, A. L., Afacan, K., Yang, Y., & Pickett, K. J. (2017). Embedded shared reading to increase literacy in an inclusive English/language arts class: Preliminary efficacy and


Chapter Four: Investigation of Professional Development to Support Teacher Delivery of Individualized Shared Reading in Small Group General Education Reading Centers

Narrow definitions of literacy have acted as a barrier to students with extensive support needs (ESN) access to quality literacy instruction (Keefe & Copeland, 2011). Students with ESN are the 1% of students with low-incidence disabilities (i.e., intellectual disability, multiple disabilities, autism spectrum disorders) who qualify to take their state alternate assessment. They are two times more likely to receive instruction in separate special education classrooms rather than general education settings as compared to their peers with other disabilities (Morningstar et al., 2017; Thompson et al., 2018). Definitions of literacy that only consider basic skills of reading and writing risk marginalizing students with ESN who may struggle to master certain aspects of literacy, such as decoding text (Morgan et al., 2011). This barrier to rich literacy instruction occurs when it is assumed that students must master basic phonics and phonemic awareness skills prior to receiving instruction in comprehension strategies (Kliwer & Biklen, 2007). A broader definition of literacy that includes skills such as listening, communicating, and engaging with text, people, and the environment, as well as reading, writing, and spelling, should be considered within a broadened definition of literacy (Downing, 2007). Such a definition situates literacy as a human right, which is fundamental to developing relationships and interaction in all aspects of community life (Forts & Luckasson, 2011; Keefe & Copeland, 2011).

Kliwer and Biklen (2007) stress that literacy development is not a ladder with rungs to climb, stating, "some individuals will never learn to walk but with the right supports they may still become extremely mobile” (p. 2586). No student should need to display any prerequisite skill to access quality, age-appropriate literacy instruction because students can develop strong listening comprehension skills, and love for books without engaging in traditional decoding of
text. However, for students with ESN, literacy instruction is often provided in separate settings that do not provide access to rich literacy experiences (Kliwer & Biklen, 2007; Ruppar, 2017). One barrier to literacy instruction in general education settings for students with ESN that has been identified is teacher knowledge of how to integrate supports for students within typically occurring general education instruction (Ruppar et al., 2011; Roberts et al., 2013; Matzen et al., 2010). The investigation of literacy instructional strategies for students with ESN that can be easily embedded in typical instruction within general education is necessary to create a wide variety of evidence-based practices for teachers to use. Additionally, research on effective professional development on inclusive teaching strategies can address the knowledge barrier teachers experience. This study investigated the feasibility of embedding an individualized literacy intervention for a student with ESN within general education classroom literacy rotations through an instructional strategy called shared reading.

Inclusive Literacy Instruction and Research

The investigation of literacy instructional strategies that facilitate student access and progress in the general education curriculum within general education settings directly supports federal initiatives to improve education for all students. The Individuals with Disabilities Education Improvement Act (IDEA) mandates all students must access and make progress in the general education curriculum within the least restrictive environment (IDEA, 2004). Additionally, the Every Student Succeeds Act (ESSA) of 2015 identifies progress toward grade-level standards as a requirement for all students. Together, these legal acts promote inclusive literacy instruction for all students.

In addition to legal support, literacy instruction for students with ESN in general education settings has a base of research support. Research has shown that special education
classrooms that primarily support students with ESN do not provide the language and literature-rich environments that are naturally available in general education settings and necessary for literacy development (Buckley et al., 2006; Kurth et al., 2016; Turner et al., 2008). Kurth et al. (2016) conducted an ecological and behavioral analysis of special education classrooms for students with ESN, finding that students were rarely engaged in reading or writing activities with these activities accounting for 2% and 5% of observed time respectively. Additionally, this study described a significant lack of opportunities for students to use language to communicate with peers or adults due to adults showing low levels of responsiveness to students and the limited communication skills of other peers within the class. Buckley et al. (2006) conducted a comparative study of adolescents with Down Syndrome education is special education schools and general education classrooms. Their findings indicate higher growth in expressive language and literacy skills for students educated in general education classes than those in special education schools. These studies highlight the inadequacy of special education settings in creating a language-rich environment conducive to language and literacy development.

Legislation and research have demonstrated clear supports and benefits of inclusive literacy instruction. Recent research has developed an evidence base of literacy instructional strategies that are effective for students with ESN. Some strategies include time delay (Browder et al., 2006), shared story reading (Hudson & Test, 2011), repeated reading (Hua et al., 2012), and adapted age appropriate books (Kurth & Keegan, 2014). Although knowledge of these instructional strategies has improved access to literacy instruction for students with ESN, most of this research has been conducted in separate special education settings. This leaves the field of education, unaware of if and how research-based instructional methods can be used effectively to support students with ESN in general education settings. Additionally, research has often
investigated researcher-implemented one-to-one instruction rather than teacher implemented
whole or small group instruction (Browder, Ahlgrim-Delzell et al., 2008; Golloher, 2018; Rivera
et al., 2017; Wood et al., 2015). Research that is conducted under unnatural (researcher
implemented) or unsustainable (one-to-one instruction) conditions contribute to the “research-to-
practice gap” because strategies cannot be easily implemented by typical teachers in their
classrooms (Cook & Odom, 2013). This study investigated the efficacy of using professional
development and performance feedback to teachers to support the implementation of a shared
reading intervention that includes repeated reading of modified grade-level non-fiction books
during small-group shared reading instruction in general education classrooms.

Shared Reading

Previous research has shown that shared reading interactions can be an effective method
for increasing child engagement with literature, vocabulary knowledge, and text comprehension
(Hudson & Test, 2011, Browder et al., 2007; Simmons & Kame’enui, 1998, see chapter two).
Shared reading is an evidence-based literacy instructional strategy for students with ESN that is
described as an interaction between a fluent reader and listener in which the fluent reader
presents the books and pauses intermittently to engage the listener in interaction with the book
through discussion, question and response, or physical interaction (Hudson & Test, 2011).
Although there is ample support for shared reading in the extant literature and, most research
used to validate this teaching strategy for students with ESN has been conducted in separate
special education settings (Hudson & Test, 2011; see chapter 2).

Emerging research on shared reading has been completed with students with ESN in
inclusive settings. For example, Roberts and Leko (2013) provide an example of shared reading
embedded in a general education setting. Their study supported three middle school students
with ESN, one of whom was included in a general education literacy class to increase story comprehension through shared reading of adapted books with added picture supports. Instruction for the student with ESN in the general education setting occurred at a back table in a one-to-one student to teacher ratio. Shared reading has also been implemented to support students with ESN within whole group instruction in general education classrooms (Courtade et al., 2013). Courtade et al. (2013) supported general and special education teachers to collaboratively plan whole group shared reading instruction with supports embedded to increase the academic engagement of students with ESN. Task analyses were created to guide teacher incorporation of an adapted grade-level book into whole group instruction. Results indicate that teachers can reliably implement shared reading interventions in whole-group instruction, and this implementation supports students with ESN to increase their engagement in reading instruction.

A recent large, randomized control trial study conducted by Hunt et al. (2019) investigated the impact of a multi-component literacy intervention, which included a shared reading component, delivered in small groups within general education settings on the literacy skills of students with ESN. Although this study provided procedural fidelity data indicating that teachers were able to implement the multicomponent literacy intervention with high fidelity, specific procedural fidelity data for the shared reading component were not provided. Additionally, this large study utilized a special education curriculum implemented during center rotations rather than typical grade-level books. These studies represent an emerging base of support for the use of shared reading interventions in general education settings. However, no studies have been identified that investigate the use of shared reading interventions for students with ESN in small group instruction using modified grade-level non-fiction books in general education settings.
Teacher Skills Needed for Implementing Shared Reading

A variety of skills related to the implementation of inclusive shared reading are necessary to achieve positive student outcomes. Three such skills are considered here, including: (a) engaging students in the literacy lesson, (b) utilizing task analyses to guide questioning and provide constant time delay, and (c) collecting data on student response to book-based questions.

Engagement

One important feature of shared reading is the unique opportunity it provides for students to engage with books they may not access independently (Koppenhaver et al., 2001). Student engagement with books, including visual contact, physical book manipulation, and commenting on book content, are all skills that have been targeted through shared reading interventions for students with ESN (Browder, Ahlgrim-Delzell et al., 2008; Koppenhaver et al., 2001; Mucchetti, 2013). Engagement is one of the most common literacy skills that shared reading is used to support (see chapter 2).

Task Analysis and Time Delay

Time delay is a systematic prompting method often embedded in shared reading interventions in order to support student acquisition of literacy skills (Alison et al., 2017; Hudson & Browder, 2014; Ruppar et al., 2017). Task analyses break down the steps of complex tasks that include multiple dependent steps (Browder et al., 2006). Task analyses have been used to support teachers, paraprofessionals, and researchers to provide pre-planned engagement opportunities for students in academic activities such as shared reading interventions (Browder et al., 2007; Mims et al., 2009; Spooner et al., 2009). Browder et al. (2007) provided professional development to teachers to support their implementation of a shared reading intervention to small groups of students with ESN in special education classrooms. One of the key supports they
provided to teachers was a task analysis of each step of the shared reading lesson that included reminders to utilize time delay prompting to support student literacy skill development. Results indicated that special education teachers were able to implement the shared reading intervention with time delay prompting with fidelity following professional development. Further research is needed to identify if professional development can support general and special education teachers to implement shared reading interventions to students with ESN in small group settings within general education classrooms.

Data collection

Data collection and the use of data to plan instruction are research-based practices that are linked to increases in the academic skills of students with ESN (Browder et al., 2005; Jimenez et al., 2012). Data collection on student progress toward individualized goals is necessary to determine the efficacy of instruction and student learning; it further allows teachers to make timely instructional decisions to maximize instructional opportunities (Brown et al., 2016; Jimenez et al., 2012). As such, data collection and data-based instructional design are powerful tools to foster student learning. Student performance within teacher created literacy activities as well as standardized achievement measures can and should be used to (a) evaluate the efficacy of instruction; (b) modify existing instruction; (c) identify necessary individualized supports for student success (Good et al., 2001).

Professional Development and Performance Feedback

Time, deliberate practice in a natural context, and feedback that occurs in a repeating cycle are necessary for teachers to acquire and implement new skills, such as shared reading in general education settings (Bransford et al., 1999). Deliberate practice consists of built-in time for understanding a concept, immediate feedback, and repetition of the same or similar tasks
until the skill is used effectively. Ericsson et al. (1993) suggest that it takes a minimum of 10 years to master newly learned skills such as teaching, with the support of extended periods of feedback during the implementation of the new skill. The field of implementation science investigates the processes by which new practices are adopted (Cook & Odom, 2013). Some practices that have been identified as effective supports for teacher implementation of strategies include "pre-service and in-service training, ongoing consultation and coaching” (Cook & Odom, 2013 p.140). Therefore, it is clear that one-time, single-dose, “train and hope” professional development from an expert is not likely to be effective (Cook & Odom, 2013; Flint et al., 2011).

One method of professional development that supports a recurring implementation and feedback cycle is called practice-based coaching. Practice-based coaching is a form of professional development in which a teacher receives professional development on a new skill, performs that skill in their classroom, then receives performance feedback on their use of the new skill (Barton et al., 2016). A recent review of single-case research investigating performance feedback as a strategy for supporting teachers to implement new practices within schools identifies this approach as an evidence-based practice according to the standards published by the What Works Clearinghouse (Fallon et al., 2015). Providing performance feedback via post-observation email has been identified as one effective way to provide this type of support. For example, Barton et al. (2016) used performance feedback delivered via email to effectively support pre-service teachers in the use of new teaching behaviors, including providing choice, behavior-specific praise, and promoting social interactions within inclusive, preschool classrooms. This research utilized a combination of single in-person professional development with ongoing post-observation performance feedback delivered in the form of emails to support
teacher procedural fidelity in implementing the shared reading intervention in small-groups within general education classrooms.

**Research Question and Hypothesis**

Literacy is a fundamental skill and human right for all people (Keefe & Copeland, 2011). The general education setting where students can access the environment and instruction is most conducive to literacy skills development (Buckley et al., 2006). Shared reading is one evidence-based practice that has support for implementation in inclusive settings to promote literacy skill acquisition for students with ESN. Some of the multiple components associated with effective shared reading interventions include facilitating engagement, use of task analyses, time delay prompting, and data collection. In this study, teacher participants received professional development and performance feedback to lead small group, multicomponent shared reading lessons within general education classrooms that include at least one student participant with ESN. A multiple baseline across teaching skills design was used to address the following research questions.

1. Does professional development and performance feedback improve teacher implementation of a multicomponent shared reading intervention for students with ESN during small group reading instruction in inclusive, general education classrooms?

2. To what extent do teachers report training and performance feedback were helpful in improving the inclusion of students with ESN in small group reading instruction in general education classrooms?

It was hypothesized that teachers would show an immediate and sustained increase in procedural fidelity of the following three skills immediately following professional development
and ongoing performance feedback: (a) engaging students with the modified book; (b) using a task analysis with pre-planned comprehension questions and constant time delay; (c) and data collection.

**Method**

**Participants and Setting**

Following university human subjects, district research, and school principal project approval, special education teachers at one elementary school were asked to identify students who met the following inclusion criteria: (a) identified as having an intellectual disability, autism, or multiple disabilities and a concomitant cognitive disability; (b) the student attends a general education class during literacy rotations at least three times per week (or will attend a general education class during center rotations for the duration of the study), (c) the student’s general or special education teacher is willing to participate in the study, and (d) the student does not miss more than an average of one school day per month. Special education teachers contacted and received project consent from parents of three students who met the inclusion criteria. After receiving parent consent, special education teachers completed a student demographic survey and The Academic & Communication Assessment Survey (ACAS), an adapted version of the First Contact Survey from Dynamic Learning Maps (Nash et al., 2016) to provide detailed information about student support needs related to literacy, communication, and behavior. The demographic and ACAS surveys are found in Appendix B, Figure 1B, and Figure 2B, respectively.

Following receipt of parent consent from student participants, their general and special educators were recruited to participate in the study. Only one teacher per student participant was selected to participate in the study. The general education teacher was selected in the event that
both general and special education teachers volunteered to participate. Inclusion criteria for teacher participants included: (a) holds a valid teaching credential in general or special education; (b) has at least one student with ESN and who has received parent consent to participate in the study in their class, and (c) confirmed commitment to facilitate literacy rotations at least three times per week for the duration of the study. Three student and teacher pairs were identified as participants in this study. Teacher demographic information can be found in Table 8. Student demographic information can be found in Table 9. The student demographics form can be found in Appendix B, Figure 1. The teacher demographics form can be found in Appendix C, Figure 1.

All three teacher and student pairs were located at the same public elementary school in a suburb of a large midwestern city. The school had a student population of 306 with an average student to teacher ratio of 13 to 1. Of the 306 students, 36.9% qualified for free or reduced-price lunch. The majority of students at this elementary school were white (70.3%), followed by Hispanic (17.6%), then two or more ethnicities (5.2%). The school had a specialized program with three designated classrooms for students with autism. Students with autism from across the school district were enrolled at this school rather than their neighborhood schools. All three student participants in this study attended the autism program, which was not at their neighborhood school.

**Ms. Archer and Alex**

Ms. Archer is a fifth-grade general education teacher with a class of 13 students. No other adults work in Ms. Archer's class. However, two of her students leave her room every day during literacy instruction to receive individualized instruction in a resource room. She was in her fourth year of teaching fifth grade and had previously worked as a paraprofessional for eight and a half
years. Ms. Archer shared that she had not received any formal pre- or in-service professional development on how to support students with ESN in general education settings, but explained she had supported student with ESN in special and general education settings during literacy instruction through her work as a paraprofessional. Prior to the study, Alex, the fifth-grade student participant with ESN, did not spend time in Ms. Archer’s class. Ms. Archer completed the shared reading lessons in the library section of her classroom with Alex and four other fifth-grade students without an identified disability. All students and the teacher sat on a carpet on the floor, and each student had access to their own book. During the time Ms. Archer led the shared reading lesson with Alex and four general education peers, her other students worked on a weekly literacy packet independently or completed timed fluency reading activities in pairs.

Alex is a 5th grade, white, male student with autism and severe intellectual disability. He receives special education services within a separate special education classroom for most of the school day. Alex did not attend any academic instructional time in the general education classroom prior to his participation in this study. He communicates primarily through gestures and single words produced orally. Alex has consistent access to the Proloquo2Go (AssistiveWare, 2020) communication application on an iPad throughout the school day. He had recently gained access to this device at the beginning of the study and only used it with adult prompting for the duration of the study. Alex has a spontaneous vocabulary of approximately 21-51 words. Alex’s special education teacher reports that he follows a functional curriculum that does not include a focus on literacy instruction. For that reason, Alex did not frequently participate in book-based lessons at school. The special education teacher shared that Alex receptively identifies all letters and matches some letters to their corresponding sounds. Although Alex did not have a goal in the literacy section of his individualized educational
program (IEP), he had a pre-vocational goal related to answering questions about his daily schedule through the selection of text supported images.

**Ms. Olson and Ben**

Ms. Olson is a fourth-grade general education teacher with a class of 17 students. No other adults work in Ms. Olson's class; however, four of her students leave her room every day during literacy center rotations to receive individualized instruction in a resource room. Ms. Olson was in her 11th year of teaching. Ms. Olson shared that she had not received any formal pre- or in-service professional development on how to support students with ESN in general education settings, but explained she had supported student with ESN who attended specials (music, art, and physical education) and science with her class each year. She did not have experience supporting students with ESN during literacy instruction in the general education setting prior to the study. Ms. Olson completed the shared reading lessons at a rectangular table designated for small group instruction at the back of her classroom. All students and the teacher had access to their own books. During the time Ms. Olson led the shared reading lesson with Ben and four general education peers, her other students completed 15 min of an online reading program called Istation (Imagination Station, 2019) on iPads and then read silently or completed unfinished work.

Ben is a fourth-grade, white, male student with autism and moderate intellectual disability. Prior to the study, Ben received special education services within a separate special education classroom for most of the school day. Ben attended Ms. Olson’s class without additional adult support during academic instructional time for approximately 1 hr a day, 15 min during morning silent reading time, and 45 min during science or social studies. His special education teacher explained that Ben did not attend the general education class more frequently
because of a lack of access to paraprofessionals to support him to access the general education curriculum. Ben communicates verbally in one- or two-word phrases and has an approximately 51-200-word spontaneous vocabulary. Ben's special education teacher reports that he reads independently as a middle to late first-grade level and has a literacy goal within his IEP related to answering “wh” comprehension questions about books he has heard read aloud. Ben receives literacy intervention in the special education classroom using an alternative special education curriculum, Unique Learning Systems (News 2 You, 2014), and teacher created intervention materials.

**Ms. Carter and Camilla**

Ms. Carter is a special education teacher of a class designated for students with Autism and extensive communication needs. This year, Ms. Carter has six students in her class. Ms. Carter has been a special educator for 14 years and was also a general educator for 5 years. She shared that she received pre-service but not in-service professional development in how to support students with ESN in general education settings. Ms. Carter also shared that she currently supports students with ESN in literacy instruction within the special and general education setting. Although Ms. Carter primarily teaches in the special education class, she delivered the shared reading lessons for this study within a general education first-grade classroom. The first-grade classroom had 16 students and two adults present during the shared reading intervention (Ms. Carter and the general education teacher, Ms. Smith). Ms. Carter led the shared reading center at a U-shaped table in the back of the classroom. Camilla, the student participant with ESN, and three first grade peers without an identified disability participated in the shared reading lessons. All students and the teacher had access to a copy of the book. During the time Ms. Carter led the small group lesson with Camilla and three general education peers,
the other first grade students participated in a Daily Five literacy center rotations (Boushey & Moser, 2006) including, reading to a peer, listening to a book on an iPad, reading silently, practicing spelling words, or writing. Ms. Smith led a second small group literacy lesson with three to five students during this time.

Camilla is a first-grade, white, female student with autism and moderate intellectual disability. She receives special education services within a separate special education classroom for most of the school day. Camilla attends the first-grade general education class without adult support during academic instructional times for 15 min a day to participate in a partner reading literacy center rotation. She communicates verbally in one- or two-word phrases and has a spontaneous vocabulary of approximately 51-200 words. Camilla’s special education teacher reports that she is currently working on learning letter names and sounds. Camilla has literacy-related IEP goals to expressively identifying upper and lowercase letters and identify the main idea of a book she has heard read aloud. She receives daily literacy intervention in the special education classroom using alternative special education curriculums such as Unique Learning Systems (News 2 You, 2014), Early Literacy Skills Builder (Browder, Mims, et al., 2008), and teacher created intervention materials.
Table 8

*Teacher Participant Demographics*

<table>
<thead>
<tr>
<th>Teacher Pseudonym</th>
<th>Age</th>
<th>Gender</th>
<th>Race/Ethnicity</th>
<th>Position</th>
<th>Grades Taught</th>
<th>Number of Students</th>
<th>Highest Degree</th>
<th>Credentials/Licensures Held</th>
<th>Years as General Educator</th>
<th>Years as Special Educator</th>
<th>Years as Para-professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Archer</td>
<td>51</td>
<td>Female</td>
<td>White</td>
<td>General Educator</td>
<td>5th</td>
<td>12</td>
<td>Bachelor’s</td>
<td>Elementary General Education</td>
<td>4</td>
<td>0</td>
<td>8.5</td>
</tr>
<tr>
<td>Ms. Olson</td>
<td>43</td>
<td>Female</td>
<td>White</td>
<td>General Educator</td>
<td>4th</td>
<td>17</td>
<td>Bachelor’s</td>
<td>Elementary General Education</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ms. Carter</td>
<td>50</td>
<td>Female</td>
<td>White</td>
<td>Special Educator</td>
<td>Kindergarten-5th</td>
<td>6-Special education class</td>
<td>Master’s</td>
<td>Elementary General Education and Low Incidence Special Education</td>
<td>5</td>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>
### Table 9

**Student Participant Demographics**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Grade</th>
<th>Age</th>
<th>Ethnicity</th>
<th>Primary Language</th>
<th>Primary Disability</th>
<th>Completes Alternate State Assessment</th>
<th>Behavior Support Plan</th>
<th>Communication</th>
<th>Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex</td>
<td>5</td>
<td>11</td>
<td>White</td>
<td>English</td>
<td>Multiple Disabilities (Autism and ID)</td>
<td>Yes</td>
<td>No</td>
<td>Primarily gestures and single words orally produced or use of AAC (high-tech and paper-based); uses approximately 21-50 words spontaneously</td>
<td>No literacy goal in IEP; independently matches some letters to letter sounds; infrequent opportunities to participate in reading activities in special education class; answers questions about books via an array of three pictures with text response options.</td>
</tr>
<tr>
<td>Ben</td>
<td>4</td>
<td>9</td>
<td>White</td>
<td>English</td>
<td>Autism</td>
<td>Yes</td>
<td>No</td>
<td>Single words or short phrases orally produced; uses approximately 51-200 words spontaneously</td>
<td>Has literacy goal to answer “wh” questions about books, reads independently at a first-grade level; frequently participates in reading activities in special education class; answers questions about books with 1-2-word oral responses.</td>
</tr>
<tr>
<td>Camilla</td>
<td>1</td>
<td>7</td>
<td>White</td>
<td>English</td>
<td>Autism</td>
<td>Too Young</td>
<td>Yes</td>
<td>Single words or short phrases orally produced; uses approximately 51-200 words spontaneously; speaks very softly</td>
<td>Has literacy goal in IEP to identify upper- and lower-case letters and identify the main idea of books; frequently participates in reading activities in special and general education settings; answers questions about books with 1-2-word oral responses.</td>
</tr>
</tbody>
</table>

*Note.* BSP = behavior support plan, AAC = augmentative and alternative communication, IEP = individualized educational program, ID= intellectual disability
Peers Without Disabilities

Three or four peers without disabilities were present during the shared reading intervention. Peers were not formally recruited for this study, and data on their progress on literacy goals were not collected. The school obtained a general video consent from all students in each participating classroom that was involved in this study. Individual parent consent was not obtained from peers who participated in the shared reading center lessons.

The Implementor of Professional Development and Performance Feedback.

Professional development and performance feedback were delivered by me, a doctoral student in special education with a valid K-12 special education teaching license, 5 years teaching experience, and experience designing and implementing shared reading interventions for students with ESN in inclusive elementary school classrooms.

Materials

The materials used in this study include (a) modified grade-level non-fiction books, (b) three lesson plans per book to support the repeated shared reading of each book, and (c) professional development supports such as, power points, video examples, and practice lessons. Each of these materials are described in the following section. Each book and accompanying three lesson plans took approximate one to 1.5 hr to prepare and assemble.

Modified Books

Modified books had consistent components across all participants which included modified text sections, repetitive text lines, embedded comprehension question prompts, pre-reading concept review sheets, and individualized response options for students. Examples all aspects of the modified books for each participant can be found in Appendix C, Figure 2. The non-fiction books used in this study were selected from grade-level curriculum or resources that
were already used by each teacher. Ms. Archer and Ms. Olson provided me with the books they
wanted to utilize from the Wonders curriculum. Ms. Carter asked I select any non-fiction book
from the Reading A-Z program the students were using during their reading center rotations.
Books modification was approached using the six-step process for modifying grade-level books
outlined by Apitz et al. (2017). Although this guide indicates steps to create a stand-alone
modified book, the book modifications in this study were embedded within the typical book.
This was done by scanning and printing the books on 11X17 paper, then gluing modifications
directly into the blank margins paper that extended beyond the printed book.

The within-book modifications used in this study were intended to supplement the typical
grade-level book rather than replace it. Each modified book included a repetitive text line that
appeared at least three times and three or four modified text sections that were added to highlight
key ideas or vocabulary. The modified text sections highlighted key information and were
written at an accessible listening comprehension level for each students participant. See the Pre-
Study Reading Sessions heading in the Procedures section for a description of the process for
identifying the type and intensity of book modifications for each student participant. Ms. Archer
was provided with a recordable voice output switch for Alex to read each repetitive text line to
his peers. In addition to within book adaptations, a pre-reading concept sheet was created for
each book. This sheet contained two to four images and each of the adapted book sections that
were added within the book. Five question prompts were embedded within the book below
selected adapted text section to serve as a reminder to teacher to ask those questions. The length
and complexity of modified text sections and comprehension questions were identified using a
systematic process of to ensure books were appropriately challenging for each student. This
process is described in the procedures section.
Students were provided with response options that had been adapted to support their expression of book comprehension. Alex received five 8.5X11 sheets containing the comprehension question and three answer options listed as text with a supporting image. The correct answer and image were identical to those found in the modified book. The two distractor answers and images were selected from a list of words Alex had shown mastery of identifying receptively when shown an array of five images. Ben received a one-page, comprehension question response sheet with five multiple-choice questions. Each of the three multiple choice options were one-to-three words and all were related or feasible answers. For example, the answers for the question, “What does a senator write?”, included “comics,” “laws,” and “mysteries.” These are all related answers because they are all things that people write. Camilla received five multiple-choice comprehension questions with three options that were embedded directly within the modified book. Each of the three multiple choice options were one or two words with one related distractor and one unrelated word. For example, the answers for the question, “What kind of water do whale sharks like?,” included the answer, “warm,” another temperature as the related distractor, “cold,” and the unrelated word, “paper.” Although teachers did not receive pre-planned questions or individualized response options during the baseline phase, Ms. Archer received two sheets of paper with picture and text supported answers options but no explicit printed questions. This was provided so Alex, who communicates through AAC, could potentially access key content words to answer questions about each book.

Lesson Plans

I provided teachers with three lesson plans, representing content for the three repeated reads of each book one to three days prior to the teachers leading the shared reading lessons. Lesson plans were printed on one double sided 8 1/2X11 paper. A full lesson plan from the final
phase of the study for Ms. Carter and Camilla can be found in Appendix C, Figure 3. Lesson plan format was consistent across all participants. The front of each lesson plan covered the content intended to be taught by the teacher for all lesson participants. The first lesson for each book focused on vocabulary, the second on use of non-fiction book features, and the third on comprehension. The front side of the lesson plan was provided to teachers in all phases of the study, including the baseline phase.

The back of the lesson plan provided guidance for the teacher on how to implement the shared reading intervention. This part of the lesson plan was presented in three distinct sections, representing the three components of the shared reading intervention: (1) engagement, redirection, and reinforcement, (2) use of a task analysis to ask pre-planned questions using constant time delay, and (3) data collection. Sections of the shared reading guidance document were provided to teachers in stages as they completed each professional development. For example, teachers received no shared reading lesson guidance in the baseline phase, received only the steps for engagement, redirection, and reinforcement during the first intervention phase, received the first area of guidance and a task analysis of pre-planned questions in the second intervention phase, and received the first two areas of guidance and a data collection sheet for all pre-planned questions in the third intervention and maintenance phases.

**Professional Development Materials**

Materials for each of the three professional development sessions included: (a) PowerPoints describing shared reading instruction components; (b) video examples of the targeted skills; and (c) practice lesson plans and books. Teachers participated in three separate professional development sessions that were staggered based on teacher mastery of the skills covered in the previous professional development session. I created three individualized
PowerPoint presentations for each teacher participant. The three PowerPoints covered the following three shared reading instructional skills: (1) engagement, redirection, and reinforcement; (2) use of task analysis and constant time delay; and (3) data collection.

**Response Definitions and Measurement Systems**

The primary dependent variable for this proposed study was teacher implementation of the multicomponent shared reading intervention during small group, inclusive shared reading center lessons. The three components are: (1) engagement, redirection, and reinforcement; (2) use of task analysis and constant time delay; and (3) data collection. A completed example of a procedural fidelity sheet can be found in Appendix C, Figure 4. Operational definitions, examples, and non-examples of each skill are found in Appendix C, Figure 5. Data were collected for all three skills during all sessions across all phases of the study.

**Engagement, Redirection, and Reinforcement**

The first skill, engagement, redirection, and reinforcement, was selected to ensure teachers actively engaged the students with ESN with the modified text sections and comprehension questions within each book. Procedural fidelity of this skill was split into three distinct activities: (1) ensuring engagement with the pre-reading concept sheet; (2) ensuring engagement with the modified text sections and repetitive text lines; and (3) gaining student attention before asking a comprehension question. In order for the teachers to receive a positive mark for completing each of these areas, they had to ensure the student displayed clear attention to the content through moving their eyes to the book from a different location, touching the modified text section, verbally saying they were ready to read or answer a question, or reading the modified text section on their own.

**Task Analyses and Time Delay**
The second skill, use of a task analysis of pre-planned comprehension questions and constant time delay, was selected to ensure teacher use of an evidenced-based systematic instructional practice to support student comprehension during the shared reading intervention. One task analysis containing five comprehension questions, their location within the book, and a reminder to use 5 s constant time delay was created for each book teachers read after they had received the second professional development session within this study. This means that the teacher asks the student with ESN the same questions during the three shared reading lessons book. This decision was made to give the student participants with ESN multiple opportunities to engage with the same comprehension questions.

Data Collection

In order to receive a positive mark for the use of the task analysis and time delay procedure, teachers had to complete two steps; (1) ask the question with the exact wording as written on the task analysis and provide access to the individualized response options; and (2) accurately use the 5s constant time delay procedure. The time delay procedure is defined as the teacher doing one of the following: (a) providing immediate praise to the student if they answered correctly within 5s; (b) delivering an immediate correction (pointing to and saying the correct answer) if the student answered incorrectly within 5s; or (c) delivering the controlling prompt (pointing to and saying the correct answer) if the student did not respond to the question within 5s.

The third skill, data collection, was selected to support teachers to not only deliver individualized instruction, but also collect progress monitoring data on student individualized goals within the general education setting. Accurate teacher implementation of data collection was recorded if the teacher marked the correct student response on the data collection space on
the task analysis sheet and that mark matched my recorded student response. Prior to the third intervention phase, videos were reviewed to identify if teachers were collecting data on student responses. No data collection was identified in the baseline, skill one, or skill two intervention phases. Teachers were only observed to collect data on student responses after they had received the third professional development in the progression of three professional development sessions related to this study.

**Student Response Measurement**

Although student response accuracy to comprehension questions during the shared reading intervention was not the dependent variable for this study, student response data were recorded. Comprehension questions answered accurately and independently within 5 s of the initial cue were recorded as correct. Responses were recorded incorrect if either the student gave an inaccurate response, failed to respond within 5 s of the question being asked, or the teacher provided any level of prompt after the initial cue and before the student response. Ben and Camilla answered questions orally or by pointing to text answer options and Alex responded by pointing to text answer options supported with an images. Questions that were recorded as comprehension questions consisted of “wh” questions (who, what, where, when, why, how). Examples of comprehension questions include, “Who invented flash photography?,” “What animal is this book about?,” “Where is Rocky Mountain National Park?,” “When do animals hibernate?,” “Why did the bear dig a hole?,” or “How do whale sharks move?.” Questions that that were not related to book comprehension, “What color is the fish?,” or required students to identify a picture in the book, “Can you find the fish?” were not recorded as comprehension. Therefore, student responses to these questions were not recorded.

**Experimental Design**
This study utilized three multiple baseline across teaching skills designs (one for each teacher-student dyad; Gast, Loyd, & Ledford, 2018) to evaluate the effect of professional development and performance feedback on teacher procedural fidelity in implementing a shared reading intervention in small group literacy centers rotations in general education classrooms. This design was selected for its feasibility to be implemented in typical school settings and the prevalence of this design in the extant research on shared reading interventions (See chapter 2). The multiple baseline design is particularly useful for this study because it would be unethical to remove the intervention if it is effective and allows for the intervention to follow the natural flow of academic interventions.

A multiple baseline across skills deigned requires the identification of three skills that are functionally independent (Gast & Ledford, 2018). The shared reading intervention in this study was segmented into three independent skill components: (1) engagement, redirection, and reinforcement; (2) the use of the task analysis and constant time delay; and (3) data collection. These three skills can all be performed separately which decreases the likelihood of covariation. The criterion for teacher procedural fidelity of each skill that dictated the introduction of the next level of the independent variable (professional development) was at least three days of intervention with at least two consecutive days at 80% or higher procedural fidelity or at least three days of stable or decreasing baseline data. When this criterion was met the teacher received professional development for the next skill. Each teacher-student dyad in this study represent a separate multiple-baseline across skills design. Data for each of the three pairs were analyzed separately.

**Procedures**

**Pre-study Reading Sessions**
A systematic process was necessary to identify the appropriate difficulty level of questions along with the types and intensity of modifications required for each student to access the grade-level non-fiction books. I read 5-15 books with each student before beginning the study procedures described in the following sections. Pre-study reading sessions lasted 20 to 30 min and occurred 5 to 15 times. The modification intensity decision making process began with the reading of non-modified grade-level non-fiction book with grade level comprehension questions, and expected oral responses. My criteria for adding additional modifications or supports was the occurrence of no response to two consecutive questions or incorrect response to five questions in a row. I provided increments of more intense book modification, more simplified questions, and different response mode options until the student could consistently answer most but not all of the questions after the first read. When adequate supports for access had been identified, I created a checklist that contained the exact characteristics of the book modifications that would be provided in order to ensure consistency across books.

**Baseline**

The shared reading lessons were delivered by the participating teachers during literacy center rotations in general education classrooms with groups of four to five students, including one student participant with ESN. No professional development on the shared reading intervention or materials was provided in the baseline phase. Prior to the first week of the study, when all skills were in the baseline phase, I handed each teacher a folder with the first week of lesson materials. Each folder contained six identical modified grade-level non-fiction books and three lesson plans. No guidance was given to the teachers related to the individualized shared reading intervention. Pre-planned comprehension questions and individualized response options
were not provided to teachers in the baseline phase and teachers received no explanation of the materials or modifications.

As teachers began to enter the intervention phase for the first skill, the lesson plans they received contained guidance on engagement, redirection, and reinforcement opportunities within each lesson. Upon achieving an 80% or above procedural fidelity criteria for engagement, redirection, and reinforcement opportunities across two shared reading sessions, teachers received professional development for skill two, use of a task analysis with pre-planned comprehension questions and constant time delay and began to received lesson plans with guidance on opportunities to implement both engagement, redirection, and reinforcement and the use of the task analysis and constant time delay. Once a teacher achieved 80% procedural fidelity in the use of the task analysis and time delay, they received the final professional development session on data collection and the final skill entered the intervention phase. During this final phase, teachers received lesson plans that included guidance on opportunities to engage in the previous two skills and an embedded data collection sheet for each of the five pre-planned comprehension questions per session. The duration of the baseline phase for each skill was dependent on the teacher reaching a stable baseline or meeting the procedural fidelity criteria of 80% across two consecutive sessions for the previous skill.

**Professional Development**

Once each teacher achieved at least two days of stable baseline or shared reading implementation above 80% procedural fidelity of a skill in the intervention phase, each teacher received a professional development in order to advance to the next phase of the study. Only one skill was covered in each professional development session. Each session followed the same structure: (1) introduces the skill through a PowerPoint presentation.; (2) The teacher viewed one to
three videos of me implementing the skill with the student participant.; (3) I roll played a shared reading session with the teacher taking the role of the student with ESN.; (4) We switched roles and the teacher practiced delivering the shared reading intervention until they achieved 80% or higher procedural fidelity in the targeted skill across two practice lessons. After the teacher met the 80% procedural fidelity criteria across two practice lessons, they were given a folder with lesson plans for their current or next non-fiction book that included guidance on the opportunities to use that skill during their next shared reading sessions. Each teacher participated in three professional development sessions that had an average duration of 62 m 35 s (range 27 m - 101 m 57 s). The longest professional development on average was for skill 1, engagement, redirection and reinforcement, at an average of 80 m 47 s (range 65 m 21 s - 100 m 57 s. This particular professional development included a general introduction to the practice of shared reading which was not included in the professional development for skills two and three. Professional development for skill 2, the use of a task analysis and constant time delay, averaged 68 m 23 s (range 46 m 43 s – 83 m 53 s), and 38 m 34 s for skill 3 (range 27 m – 57 m 44 s), data collection.

Professional development continued throughout the intervention phase via performance feedback. In the evening following teacher implementation of the shared reading intervention, I watched the video of their implementation, identified their level of procedural fidelity, then prepared and performance feedback email for the teacher that provided guidance for the skills which were in the implementation phase. For example, if the teacher had only received professional development the first two professional developments in engagement, redirection, and reinforcement, and use of the task analysis and time delay, a digital feedback email would not include information on their data collection practices. Each email followed a specific format:
(1) two statements of praise related to teacher implementation of the shared reading lesson; (2) a
statement of the procedural fidelity score for each skill in the implementation phase and a
specific description of any steps the teacher missed; (3) explicit guidance on how the teacher
could improve their procedural fidelity during the next session on any skill in which their scored
below 100%; (4) a closing in which the teacher is thanked for their continued support and
dedication to learning this new instructional strategy. Teachers received an email each night that
they led a shared reading lesson until their entered the maintenance phase. Each teacher was
required to respond to the performance feedback email prior to their next shared reading session.

Shared Reading Skill Intervention Phases

The intervention phase for each of the three shared reading skills occurred after teacher
received professional development in a particular skill. During intervention phases, teachers
were provided lesson plans that included specific guidance on each opportunity to use the
intervention phase skill within the shared reading lessons and teachers received performance
feedback in the evening after their implementation of each shared reading lesson. The only phase
changed that resulted in the teachers receiving additional materials was when they entered the
intervention phase for skill two, use of the task analysis and constant time delay. During this
phase, question prompts were embedded within the modified books and teachers were provided
with individualized response options for each student to support their response to the five pre-
planned comprehension questions.

Maintenance

Maintenance procedures mirrored those of the skill three intervention phase in which
teachers received a folder with six adapted books and three lesson plans that included guidance
on opportunities to implement all three shared reading skills during lessons. The only difference
in the maintenance phase is that teachers no longer received performance feedback emails. Three sessions of maintenance were completed immediately after each teacher met the procedural fidelity criteria for skill three, data collection. After the first three days of maintenance data collection, there was a scheduled one month pause in interaction between myself and the teacher participant. After one month, the teacher was scheduled to be given a folder with three lesson plans and one book. Delayed maintenance data were collected for three additional sessions for a total of six maintenance sessions.

**Frequency and Duration**

Teachers were asked to implement the shared reading lessons three days per week for the duration of the study. The lessons for each book were designed to fit within the typical rotation time for each class. Center rotations were approximately 30 min in Ms. Archer’s class, 25 min in Ms. Olson’s class, and 20 min in Ms. Carter’s class. The total number of sessions competed by each participant and average session length varied by teacher. Ms. Archer completed 13 sessions that had an average length of 22 min 40 s (range 11 min 0 s – 37 min 14 s). Ms. Olson completed 20 sessions that had an average length of 20 min and 58 s (range 15 min and 11 s – 28 min 11 s). Ms. Carter completed 14 sessions that had an average length of 18 min 13 s (range 13 min 3 s – 23 min 1 s).

**Data Analysis**

Procedural fidelity data for teacher delivery of a multicomponent shared reading intervention were collected during baseline, intervention, and maintenance sessions. Data on procedural fidelity were analyzed and graphed daily after teacher led lessons; these data were used to determine when teacher participants were ready to move to the next phase of the study. Once all data were collected, I used a structured visual analysis procedure to analyze the data for
each teacher participant separately (Ledford, Lane, & Severini, 2017). The guide supported me to analyze six main characteristics of the data including, level, trend, variability, consistency, overlap, and immediacy within and across tiers. A functional relation between the professional development and performance feedback and a teacher procedural fidelity in implementing a multicomponent shared reading intervention inclusive shared reading intervention was established when: (a) the level of change in procedural fidelity after professional development is consistent across the three skills; (b) there are no inconsistent trends in the data; (c) there is no unexpected variability in the data; (d) the data are consistent as the condition change; (e) the procedural fidelity data do not overlap between conditions; (f) there is an immediate change in teacher procedural fidelity after professional development.

**Interobserver Agreement**

All sessions were video recorded to facilitate a second rater to complete interobserver agreement (IOA) on teacher procedural fidelity data student responses to comprehension questions. A second rater viewed 36% of total sessions across teachers (38% for Ms. Archer, 35% for Ms. Olson, and 36% for Ms. Carter) and phases (36% all skills baseline, 40% skill one intervention, 33% skill one and two intervention, 33% all skills intervention, 38% maintenance). IOA was calculated using point-by-point agreement using the following formula

\[ \text{IOA} = \frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100 \]

Each IOA data collection sheet was unique to the book used in each session and identical to the data collection sheet used my me to collect the initial data. A sample data sheet is found in Appendix C, Figure 4. Overall IOA for procedural fidelity across all teacher participants, phases, and skills was calculated at 97.4% (90.6%-100%). Overall IOA across teachers by skill was calculated at 97.3% (range 86.4%-100%) for engagement redirection and reinforcement, 95.3% (range 80%-100%) for use of the task analysis
and constant time delay, and 100% for data collection. IOA was also calculated for each teacher participant separately with Ms. Archer at 98.7% (range 96.5%-100%), Ms. Olson at 97.2% (range 93.1%-100%), and Ms. Carter at 96.4% (range 90.6%-100%).

Overall IOA for student response data across all student participants was 95.8%. IOA was also calculated for each student participant separately with Alex at 100%, Ben at 100%, and Camilla at 85.7% (range 60%-100%). Consensus was met on all disagreements and is reflected in the reported data. Disagreement on Camilla’s responses to comprehension questions were most often related to difficulty in hearing her very soft speaking voice.

**Professional Development and Performance Feedback Procedural Fidelity**

Procedural fidelity data for professional development sessions were collected by direct, systematic, observational recording via video using a trial-based behavioral checklist (available in Appendix C, Figure 6). Procedural fidelity was assessed for 30% of professional development sessions. This resulted in procedural fidelity recorded for one randomly selected session out of the three sessions that occurred for each teacher for a total of three out of nine professional development sessions. Procedural fidelity for my delivery of professional development across all participants was 100%. Procedural fidelity data were also collected on 39% of performance feedback emails (40% for Ms. Archer, 33% for Ms. Olson, and 44% for Ms. Carter). The procedural fidelity form used to assess performance feedback emails can be found in Appendix C, Figure 7. Overall procedural fidelity for my delivery of performance feedback was 100% for all teachers and emails.

**Social Validity**

Following the completion of the study, the teacher participants were asked to complete a Likert style social validity survey and in-person interview. The goal of the survey and interview
was to investigate the extent to which each teacher felt the professional development and performance feedback left them prepared to continue providing the intervention in future and if they felt shared reading in this format was feasible and meaningful to student learning. The social validity survey and in-person interview questions are found in Appendix C, Figure 8 and Figure 9 respectively.

**Results**

The impact of professional development and performance feedback on teacher procedural fidelity in leading a multicomponent shared reading intervention was investigated in the context of a multiple baseline across behaviors three skills design. Professional development and performance feedback resulted in an increase in procedural fidelity in the areas of: (a) student engagement, reinforcement, and redirection; (b) use of a task analysis and constant time delay; and (c) data collection. Results for each of the three teacher-student pairs are presented in three different multiple baseline designs and described in the following section.

**Ms. Archer and Alex**

Ms. Archer led shared reading lessons in her general education fifth-grade classrooms with four or five students including Alex. Graphed data for Ms. Archer’s procedural fidelity in the delivery of three shared reading skills are presented in Figure 4. Her procedural fidelity was low and stable in the baseline phase for all three shared reading skills. An immediate and consistent increase in procedural fidelity was observed after Ms. Archer received each of the three professional development sessions. A minimum three total sessions and two consecutive sessions at 80% implementation fidelity were required to meet the skill mastery criterion in this study. Ms. Archer needed four sessions to master the engagement, redirections, and
reinforcement skill, and three sessions to meet the mastery criterion for use of that task analysis and time delay as well as the data collection procedure.

In the case of the first two skills (engagement, redirection, and reinforcement and use of a task analysis and constant time delay), Ms. Archer’s procedural fidelity continued to increase after the initial post-professional development increase with the delivery of the performance feedback. Ms. Archer immediately implemented the data collection procedures with 100% fidelity after receiving the professional development. There were no occurrences of overlapping data between the baseline and intervention phases for any of the three skills. Maintenance data were not collected for Ms. Archer due to a national health emergency mandating the closure of the school for the remainder of the school year. A functional relation between professional development with performance feedback and teacher implementation of a multicomponent shared reading intervention was established due to immediate and consistent high level of change in procedural fidelity across all three shared reading skills after Ms. Archer received each professional development and continuing performance feedback.
Figure 4

Procedural Fidelity Results for Ms. Archer
Ms. Olson and Ben

Ms. Olson led shared reading lessons in her general education fifth-grade classrooms with five students, including Ben. Graphed data for Ms. Olson’s procedural fidelity in the delivery of three shared reading skills are presented in Figure 5. An increasing trend was initially observed in the first shared reading skill because Ms. Olson began explicitly engaging Ben with the adapted text sections prior to receiving professional development. Her procedural fidelity on skill one stabilized at 40% for two days before the introduction of the first professional development. Ms. Olson’s procedural fidelity was low and stable in the baseline phase for skills two and three (use of a task analysis and constant time delay and data collection). An immediate increase in procedural fidelity was observed after Ms. Olson received each of the three professional development sessions. The immediate level of increase in procedural fidelity was high for student engagement and data collection. An increase in procedural fidelity was present but lower for the use of a task analysis and constant time delay. Ms. Olson quickly incorporated the delivery of all question prompts on the task analysis. However, she struggled with the systematic implementation of the time delay procedure. With the provision of performance feedback after each intervention session and required response to confirm receipt of feedback, Ms. Olson’s procedural fidelity in the use of the task analysis and constant time delay continued to increase until the mastery criterion was met.

Ms. Olson needed three sessions to meet the mastery criterion across all three shared reading skills. There were no occurrences of overlapping data between the baseline and intervention phases for any of the three skills. Maintenance data indicate that Ms. Olson retained the ability to implement all three skills in the multicomponent shared reading intervention one week and one month after the performance feedback had been removed. A functional relation
between professional development with performance feedback and teacher implementation of a multicomponent shared reading intervention was established due to immediate and consistent high level of change in procedural fidelity across all three shared reading skills after Ms. Olson received each professional development and continuing performance feedback.
Figure 5

Procedural Fidelity Results for Ms. Olson
Ms. Carter and Camilla

Ms. Carter led her shared reading lessons in a first-grade general education classroom with four students, including Camilla. Graphed data for Ms. Carter’s procedural fidelity in the delivery of three shared reading skills are presented in Figure 6. Her procedural fidelity was low and stable in the baseline phase for all three shared reading skills. An immediate and consistent increase in procedural fidelity was observed after Ms. Carter received each of the three professional development sessions. Ms. Carter needed three sessions to meet the mastery criterion for the first skill (engagement, redirection, and reinforcement), six sessions for skill two (use of a task analysis and time delay), and three sessions for skill three (data collection).

In the case of the first two skills (engagement, redirection, and reinforcement and use of a task analysis and constant time delay), Ms. Carter’s procedural fidelity continued to increase after the initial post-professional development increase with the delivery of the performance feedback. There was one occurrence of overlapping data between the baseline and intervention phase within Ms. Carter’s use of the task analysis and constant time delay procedure. During session 10, Ms. Carter did not provide explicit praise when Camilla answered a question correctly in 4 out of 5 opportunities. Although she had been delivering explicit praise previously, in this session, she responded to Camilla’s correct responses by saying, “She pointed to (answer),” to the peers in the group. Coaching was provided in the performance feedback to remind Ms. Carter to give Camilla immediate reinforcement after a correct response. Following the delivery of the performance feedback, Ms. Carter’s procedural fidelity returned to 100% and remained at that level for the rest of the study sessions. Only two days of maintenance data were collected for Ms. Carter due to a national health emergency mandating the closure of the school for the remainder of the school year. A functional relation between professional development
with performance feedback and teacher implementation of a multicomponent shared reading
intervention was established due to immediate and consistent high level of change in procedural
fidelity across all three shared reading skills after Ms. Carter received each professional
development and continuing performance feedback.
Figure 6

Procedural Fidelity Results for Ms. Carter
Student Response Accuracy

Student response accuracy data were collected to ensure that the shared reading intervention did not negatively impact student comprehension of grade-level non-fiction books. Table 10 displays the percentage of comprehension questions responded to correctly and independently by each student participant during each shared reading session. The information in Table 3 also indicates the phase of the professional development intervention for each student's teacher. These data indicate that students answered fewer comprehension questions correctly before their teachers received the second professional development on the use of a task analysis with pre-planned comprehension questions and constant time delay. These data indicate that the shared reading intervention did not negatively impact student comprehension of grade-level non-fiction books. Descriptively, it appears student comprehension improved with the introduction of pre-planned comprehension questions with individualized response options and teacher use of constant time delay prompting. These data are descriptive and are only intended to indicate that student comprehension was not negatively impacted by the intervention. No experimental conclusions can be drawn from these data.
Table 10

**Student Response Accuracy by Teacher’s Phase of Professional Development**

<table>
<thead>
<tr>
<th>Phase of Teacher’s Professional Development</th>
<th>Alex</th>
<th>Ben</th>
<th>Camilla</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session</strong></td>
<td><strong>Score</strong></td>
<td><strong>Session</strong></td>
<td><strong>Score</strong></td>
</tr>
<tr>
<td>All Skills Baseline</td>
<td>1</td>
<td>0%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>14%</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0%</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Skill One Intervention</td>
<td>4</td>
<td>0%</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>0%</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>11%</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Skill One and Two Intervention</td>
<td>8</td>
<td>100%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>60%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>80%</td>
<td>11</td>
</tr>
<tr>
<td>All Skills Intervention</td>
<td>11</td>
<td>60%</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>80%</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>80%</td>
<td>14</td>
</tr>
<tr>
<td>Maintenance</td>
<td>15</td>
<td>50%</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>57.1%</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>57.1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>33.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>83.3%</td>
<td></td>
</tr>
</tbody>
</table>
Social Validity

The research design included social validity data from surveys and interviews from all three teacher participants. However, due to the national health emergency, this data was collected in a modified form. I was unable to successfully contact Ms. Archer after the school closure caused by the national health emergency previously mentioned. Additionally, I was only able to collect the social validity survey from Ms. Carter. For this reason, these results highlight the social validity survey data from Ms. Olson and Ms. Carter, as well as a single in-person interview with Ms. Olson. Social validity survey data are displayed in Table 11. Ms. Carter and Ms. Archer had participated in social validity interview related to a different study (see chapter 3) in which they discussed some of their feelings about the current small group shared reading study. Quotations from this previous interview have been included here.

Shared Reading Intervention Validity

Both responding teachers strongly agreed that the shared reading intervention supported their students with ESN to access the general education curriculum and that the students’ support needs were such that they warranted the use of individualized modified materials for successful access. Ms. Carter wrote in her social validity survey that Camilla "enjoyed reading with her peers, and this activity boosted her confidence, especially the repetitive texts that she got to read to her peers.” Ms. Archer shared that she felt it was important for Alex to “have the larger pictures as an answer base, you know to draw [his] attention to the focus and the questions” related to the non-fiction books.

Neither teacher felt that the intervention negatively impacted the learning of the general education peers in the shared reading group. Ms. Olson shared, “I don't think it's harmful at all. I think there are times, maybe the time that you are devoting to [Ben] during the session may take
away from them a little bit, but also part of teaching is teaching that everyone's different when
you get in the real world.” Ms. Carter had expressed some concern prior to the study that Camilla
would struggle to focus and participate in small group literacy instruction because she typically
receives literacy intervention in a one-on-one format in the special education classroom.
However, Ms. Carter later shared that she was pleased with Camilla’s behavior and ability to
participate in the small group shared reading lessons. She stated, “[Camilla] really was pretty
much almost getting one-on-one because the other kids were so good that were chosen to be part
of the study. Especially the girls did such a great job not seeming slighted that more attention
was kind of focused on [Camilla].”

Ms. Olson and Ms. Carter also agreed or strongly agreed that they enjoyed teaching the
small group shared reading lessons. Ms. Olson felt that shared reading “is a great teaching
strategy, and it makes them (general education peers) more aware of how they can help [Ben]
when they are sitting next to him.” She went on to explain that she had observed her students
talking about vocabulary words and asking Ben questions about content with answer options as
they had observed her do during the small group shared reading lessons. Ms. Archer, who had
not previously led small group reading rotations in her class, shared that she appreciated the
opportunity to “get to kind of work closely and get to see [her students] a little bit more one-on-
on than I usually get to.” Ms. Archer also added that the small group lessons allowed her to adapt
her teaching to target the literacy needs of each of her students. She thought, "for a teacher, it
does give you a little bit of time to focus on whatever you choose to make the focus…You know
I have different kids”.

Teacher opinions on the efficacy and meaningfulness to student learning of each
component of the shared reading intervention were collected in the social validity survey. Ms.
Olson agreed and Ms. Carter strongly agreed that the engagement, redirection, and reinforcement strategies were meaningful to their student's learning. Both teachers strongly agreed that the time-delay prompting procedure was effective. Teacher opinions differed related to if the embedded data collection procedure in the shared reading lesson was a meaningful addition to their existing data collection practices. Ms. Olson, the general education teacher who previously had no experience collecting data on Ben’s academic progress in her class, strongly agreed that the embedded data collection procedure was a meaningful addition to her existing data collection practices. As the special education teacher, Ms. Carter had a robust existing data collection system for Camilla’s progress toward her IEP goals. She only slightly agreed that the embedded data collection procedure was a meaningful addition. During the in-person interview, Ms. Olson shared that both teachers felt the task-analyzed lesson plans that were provided were the least useful aspect of the shared reading intervention. Ms. Olson explained that "it wasn't that [the lesson plans] weren't helpful. It's just you had already explained it so word for word what you wanted, so I didn't really use them."

**Professional Development and Performance Feedback Validity**

Ms. Olson and Ms. Carter strongly agreed that the amount of in-person professional development was necessary for their implementation of the shared reading intervention. Although Ms. Olson felt it was important to meet three times for professional development on each of the shared reading components separately, Ms. Carter felt that the professional development sessions could have been combined. Ms. Olson cautioned against combining the sessions, stating, "I think if you would have given me too much to worry about the first time, you know, the first time I was all worried about doing it wrong anyway. If I had too much to worry about, I would have messed it up even more, or not even been able to focus on specific things."
So, I think you broke it into sections enough so I could focus on one particular part, get it under control or get it fixed, and then move on to the second part because I already knew the first part and could add a little bit more.” Both teachers strongly agreed that the role-playing lesson practice opportunities within the professional development were important to their learning of the new shared reading skills.

Performance feedback emails were well received by both teachers. Ms. Olson shared that she “liked the feedback that you gave explaining to me what I did wrong because even if I didn't notice it myself, I could go back and say, ‘oh that's what she's talking about.’ And not only did you point out what I did wrong, you told me how to fix it.” Ms. Olson and Ms. Carter both strongly agreed that the performance feedback emails were important to their accurate implementation of the new shared reading skills. Ms. Olson was particularly appreciative that the feedback was delivered in the evening of the day she led each shared reading session. She shared, “I like getting that feedback right away. So I could work with [Ben] the next day without lots of days in between.”

Overall, teachers expressed a high level of satisfaction with the combination of in-person professional development and performance feedback used in this study. Ms. Olson and Ms. Carter expressed that they would continue to use one or more of the skills they learned through professional development. Additionally, both teachers felt the professional development provided them with the knowledge they needed to plan and prepare small group shared reading instruction with modified grade-level books in the future. At the time of the in-person social validity interview, Ms. Olson had already created three modified books and continued to include Ben in three weeks of shared reading center rotation lesson without input from me. She shared that the intervention had been much easier to implement when she was provided with the
modified book and pre-planned comprehension questions. She explained, “I don't re-print [the books] like you did. I just cut them (the modification) out and glue them on there…When I had to do it without you, I spent not a lot of time, you know, about an -hour and a half. I'm sure I’ll get quicker as time goes on, but it’s an hour and a half each week to come up with the questions for [Ben] and give him his little repeated passage.”

Although Ms. Olson independently began to create modified books on her own, both teachers disagreed or slightly disagreed that the time required to prepare materials for the shared reading intervention was reasonable. In an in-person interview, Ms. Archer shared that she would need support from the special education teacher to prepare the modified materials in order to continue to implement the shared reading lessons in the same way. She explained, "It's difficult for one person to do all of this. Making all the copies (of the modified books), I mean, with what regular ed teachers already have on their plate. It would make it almost impossible to do effectively…Support would be great."
Table 11

Social Validity Survey Responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Ms. Archer</th>
<th>Ms. Olson</th>
<th>Ms. Carter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students with significant support needs can learn academic content in the general education classroom</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2. This process supported (student’s) progress on their individual learning goals.</td>
<td>NR</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>3. The shared reading intervention I provided was effective in supporting (Student’s) access to general education curriculum.</td>
<td>NR</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>4. The shared reading intervention I provided was effective in supporting (Student’s) access to a typical general education class activity.</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>5. The shared reading intervention I provided was effective in supporting (Student’s) access to interaction with peers in the general education class.</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>6. (Student’s) learning needs in my class are significant enough to justify the use of adapted texts and this kind of shared reading intervention.</td>
<td>NR</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7. The shared reading intervention negatively impacted the learning of typically developing students in my reading group.</td>
<td>NR</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8. I liked this teaching the shared reading lessons.</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>9. The engagement, redirection, and reinforcement strategies used in this intervention were meaningful to (Student’s) learning.</td>
<td>NR</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. The time delay method used in this intervention was effective and meaningful to student learning.</td>
<td>NR</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>11. The data collection embedded in the shared reading lesson is a meaningful addition to my existing data collection methods.</td>
<td>NR</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>12. The presence of the task analysis (lesson plan) was an integral part of my success implementing the shared reading intervention.</td>
<td>NR</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>13. I will use some of the strategies or supports (book adaptations, planned questions, time-delay, data collection) to support other students with extensive support needs again in the future.</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>14. I would recommend using shared reading with adapted texts to other teachers.</td>
<td>NR</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>15. The demands on my time needed to create materials for this type of shared reading intervention are reasonable.</td>
<td>NR</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>16. I have the skills and knowledge to create the materials necessary for shared reading interventions in the future.</td>
<td>NR</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
17. The amount/duration of in-person professional development was necessary for my implementation of this intervention.

<table>
<thead>
<tr>
<th>Please also circle one:</th>
<th>Less would have been OK</th>
<th>The amount was just right</th>
<th>More would have been better</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NR</td>
<td>6</td>
<td>6 (The amount was just right)</td>
</tr>
</tbody>
</table>

18. The **lesson practice opportunities** within the professional development were important in my learning of the shared reading skills

|                         | NR | 6 | 6 |

19. The e-coaching emails were helpful in my implementation of the shared reading intervention

|                         | NR | 6 | 6 |

*Note. NR = no response, 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree*
Discussion

The impact of professional development and performance feedback on teacher procedural fidelity in the implementation of a multicomponent shared reading intervention was investigated in this study. Three independent multiple baseline across skills designs were used to systematically introduce professional development on three separate skills that comprise the shared reading intervention to three teacher participants. The skills in the shared reading intervention included: (1) engaging students with the modified text sections in a book; (2) using a task analysis with pre-planned comprehension questions and constant time delay; (3) and data collection. A functional relation between professional development and performance feedback and teacher procedural fidelity in implementing the multicomponent shared reading intervention was established for all three teacher participants. Additionally, teachers participants expressed that they felt the professional development and performance feedback was a positive experience that left them feeling comfortable delivering the small group shared reading intervention. In other words, the professional development package was effective in supporting teachers to: engage students with the adapted text sections, use a task analysis to ask pre-planned comprehension questions with a constant time delay prompting procedure, and collect in the moment data on student responses to comprehension questions.

This study adds to the growing base of research supporting the use of shared reading of modified grade-level books to support access to literacy instruction in general education settings by demonstrating both general and special educators can embed shared reading with individualized supports for a student with ESN. It is also promising teachers did not cite any negative impact of the intervention on the literacy instruction for the general education peers who were included in the group. In fact, two of the teachers cited academic and social benefits
the small group shared reading for the general education students such as increased opportunities for to understand the support needs of their peers with ESN and increased time the teacher to focus instruction on the needs of individual students in the small group.

All teacher participants were able to easily integrate data collection on individualized goals during typically occurring instruction. It is particularly noteworthy that all teachers were able to immediately implement accurate data collection on student responses with 100% fidelity within small group instruction using grade-level books in the general education classroom. Comprehension questions were designed to support students to work on existing IEP goals, and student response data indicate that each student responded to a majority of questions correctly when provided with the supports design for the shared reading intervention.

These findings support other research in the field of education to confirm that progress towards individualized academic goals for students with ESN can be facilitated and monitored within general education settings (Kurth et al., 2019). In turn, these data negate claims in the field of education that students with ESN require special education environments in order to access quality education to support their individualized goals (Kauffman et al., 2020). For example, Alex did not have a literacy goal in his IEP. However, he did have a goal related to responding to questions about his schedule using picture response cards. In this shared reading intervention, Alex modified text sections that were supported by images, then responded to questions about that content from picture and text response options. Although these questions were not directly about Alex’s daily schedule, he was gaining relevant practice in his goal by responding to questions about information he had heard and was able to show accuracy in his responding. This is just one example of how a learning goal that is significantly different than
those of peers in the environment can be effectively targeted without the need for a separate special education placement.

The importance of a professional development package that included guided content delivery and performance-based feedback is highlighted in this study. Visual analysis of the graphed data for all three participants indicates that each had at least one skill in which their initial procedural fidelity after receiving the professional development continued to increase with the provision of practice-based feedback. Teachers reported that the performance feedback emails were integral to their mastery of the new shared reading skills. Additionally, Ms. Olson shared that immediacy in which the performance feedback was received helped her understand how she could improve her practice. These findings further support the idea that single-dose professional development without continuing support of practice-based feedback can be inadequate for teachers to integrate new skills into their practice with fidelity (Cook & Odom, 2013; Flint et al., 2011).

**Limitations**

There are several limitations to consider when interpreting the results of this study. The results of one, isolated, single-case design study prohibits making any claims of generalizability to other groups of teacher populations. Although the professional development package was identified as effective in this study and replicated across three independent designs, it is possible that there were characteristics of myself as the trainer, the individual participating school, or region that could have contributed to the outcomes. Replication of this study conducted by other independent reasearchers with teachers from different geographical areas, levels of experience, and student demographics would support more complete knowledge of the impact of professional development and performance feedback on teacher implementation of shared
reading interventions for students with ESN in general education settings. An additional
limitation of this study is that the professional development and lesson materials were prepared
and delivered by myself, a researcher, rather than a teacher or other school associate such as an
assistant principal or special education coordinator. Future research should investigate how
teachers in the field can utilize the resources available at their schools to learn and implement
new instructional strategies, such as how to implement and individualized shared reading
intervention to a student with ESN during small group instruction in a general education
classroom.

Near the end of the study for two of the three participants, a national health emergency
occurred, causing all schools in the participating state to close for the remainder of the school
year. This resulted in two specific limitations. First, I was not able to complete the maintenance
phase for Ms. Archer and Ms. Carter. This phase would have allowed me to determine if these
teachers were able to maintain their high level of implementation of shared reading skills after
the removal of performance feedback. Second, I was not able to collect social validity survey or
interview data for this study prior to the school closure. This valuable information would have
indicated teacher perceptions of the utility of the intervention and professional development.
Additionally, teachers could have shared if they intended to continue to provide shared reading
instruction to the student participants with ESN in the general education classrooms.

During the completion of IOA for procedural fidelity for Ms. Carter, it was identified that
there was one missed use of time delay that had not been accounted for in the data for session
eight. This impacted Ms. Carter’s procedural fidelity score so that she had not actually met the
mastery criterion for the use of the task analysis and constant time delay prior to receiving the
professional development for the data collection skill. In other words, Ms. Carter should not have
moved to the final skill (data collection) until session 13. Although this error occurred, Ms. Carter did eventually meet the mastery criterion for the use of the tach analysis and time delay in session twelve. Therefore, the conclusions drawn from this data remain valid.

**Implications for Research**

Replication and extension of research on the impact of this professional development and performance feedback package are necessary to understand if results can be generalized to teachers across the country. This may be achieved through the implementation of group-level randomized control trial studies or replication of this single-case design across teachers from different geographical areas, levels of experience, and student demographics. Future research should identify how typical school staff can collaborate to effectively and efficiently deliver professional development for teachers that result in the delivery of shared reading interventions for students with ESN in general education settings and the creation of materials such as modified books to increase student access. For example, research should investigate the impact of district or school level group professional development followed by teachers working together to provide performance feedback on their creation of accessible instructional materials and implementation of shared reading in general education settings. Lesson study is a professional development structure in which teachers watch each other conduct lessons before providing immediate performance feedback (Perry & Lewis, 2008; Takahashi et al., 2013). Lesson Study brings teachers together to collaboratively plan, make goals, observe one another, and provide feedback within their collaborative groups (Gersten et al., 2010). Future investigation is needed to determine how teachers may use the Lesson Study professional development structure to support each other in the integration of shared reading interventions for students with ESN in general education settings.
Implications for Practice

There are clear implications for educational practice based on the evidence from this study. It was possible for these three teacher participants to implement shared reading with high-fidelity in group instruction after participation in professional development and performance feedback. This knowledge of the possibility of inclusive small group shared reading delivery did not previously exist in the extant literature on shared reading interventions for students with ESN (see chapter 2). These findings, coupled with evidence showing students with ESN who participated in this study can access individualized comprehension goals through shared reading of modified non-fiction books in general education settings (see chapter 3), suggest that the intervention is not only feasible but may also support student progress toward individualized literacy goals. Due to the feasibility of embedded individualized instruction and data collection within general education settings, pre- and in-service professional development should focus on the development and mastery of such inclusive practices. Additionally, based on teacher concern related to the time required to prepare shared reading materials that are accessible to students with ESN in general education settings, they should be provided with the collaborative planning and material preparation time necessary to implement embedded individualized interventions.

One commonly cited barrier to the implementation of literacy instruction for students with ESN in general education settings is lack of knowledge of effective instructional strategies (Ruppar et al., 2011; Roberts et al., 2013; Matzen et al., 2010). The first implication for practice is that teacher preparation programs for special educators should ensure teachers are leaving teacher preparation programs with knowledge of how to embed systematic instruction for students with ESN, such as the use of constant time delay, and data collection on individualized goals within general education content instruction through practices such as shared reading.
University methods course instruction should focus on evidence-based practices; however, examples, readings, and assignments should highlight the use of those practices in general education settings.

It is particularly important that assignments and fieldwork opportunities require the implementation of practices such as shared reading with students with ESN in general education settings, collaborative practices that facilitate inclusive service delivery, and material modification to increase student access to academic content to facilitate teacher candidate access to performance feedback from university faculty. A repetitive loop of professional development, practice, and practice-based feedback are essential to ensuring teachers learn to implement instructional strategies with fidelity (Bransford et al., 2000; Brownell et al., 2015; Yates et al., 2020). Without feedback, teachers are likely to internalized ineffective modifications to targeted instructional strategies (Ericsson et al., 1993). This research and the work of others show professional development and performance feedback are effective in supporting teachers to master new skills (Barton et al., 2016; Ward-Horner & Sturmey, 2012). It is for this reason that universities must ensure teacher candidates have access to an instruction and feedback loop that will leave them confident in their ability to deliver inclusive special education services to students with ESN.

A second implication for practice that is highlighted by this research is that school administrators must provide teachers with enough time to collaboratively plan for and create the materials necessary for shared reading interventions using modified grade-level books. The creation of modified books that are aligned with content that is covered in the general education classroom requires collaboration to know what books or content to modify and time to create modifications (Agran et al., 2002; Leko et al., 2015; Kurth & Keegan, 2014). Unfortunately,
many teachers report that access to collaborative planning time is a barrier to the design and delivery of special education services in general education settings (Saloviita, 2015; Santoli et al., 2008). Ms. Archer shared that she felt the intervention was meaningful for all of her students, including Alex, but she would need support from a special education teacher to plan and prepare materials if she were to continue the intervention. Collaborative planning time facilitates the sharing of expertise between general and special educators in order to maximize student access to instruction (Murawski & Hughes, 2009). Appropriate time for collaborative planning and material preparation may support teachers to decrease reliance on separate special education placements for students with ESN. It is essential that teachers advocate for, and administrators provide structures and time for teachers to plan for and implement inclusive practices.
References


AssistiveWare. (2020) Proloquo2Go (Version 7.2) [Mobile application software].

http://itunes.apple.com


and Practice for Persons with Severe Disabilities, 33, 3-12.

https://doi.org/10.2511/rpsd.33.1-2.3


https://doi.org/10.1177/001440290607200401


https://doi.org/10.1177/001440291307900201


https://doi.org/10.1177/875687051303200402


Imagination Station. (2019) istation.com (2.10.3) [Mobile application software].


https://doi.org/10.2511/027494811800824507


https://doi.org/10.1080/10349120120094284


https://doi.org/10.1177/1540796916661492


Persons with Severe Disabilities, 36, 112-120.  
https://doi.org/10.2511/027494811800824516


https://www.n2y.com/products/unique/


https://doi.org/10.1002/bin.1339


https://doi.org/10.1177/1540796915592155

Chapter Five: Summary and Conclusion

The three studies that comprise this dissertation investigate different aspects of shared reading interventions for students with extensive support needs (ESN). Shared reading is a book-based interaction between a fluent reader and listener in which the reader presents the book and pauses intermittently to engage the listener in interaction with the book through discussion, question and response, or physical interaction (Hudson & Test, 2011). This literacy intervention is the focus of my dissertation because of existing literature showing a moderate level of evidence for the efficacy of shared reading in supporting literacy skill development for students with ESN (Hudson & Test, 2011). More knowledge is needed in the field to identify if shared reading is a practice with strong support. Additionally, there is an urgent need for increased research on literacy instruction for students with ESN in general education settings (Toews & Kurth, 2019). Research on shared reading interventions is necessary to identify if and how they are effective when embedded in general education settings. This dissertation contributed to knowledge in the field of shared reading interventions for students with ESN through three studies. The following sections provide a summary of the findings and implications of these three studies.

Chapter Two: Evaluation of the Evidence Base for Shared Reading to Support Literacy Skill Development for Students with Extensive Support Needs

Chapter Two of this dissertation was a systematic literature review of empirical research on the use of shared reading as an instructional strategy to support literacy skill development of students with ESN. Findings from 32 included articles indicate that research on shared reading interventions most often occurs in one-on-one groupings with a student with ESN and a researcher or special education teacher in a special education setting. The most common
materials used during shared reading interventions were modified books which most often included simplified wording, added pictures, and repetitive text lines. Systematic instruction, including a system of least prompts, constant time-delay, and the use of a task analysis or scripted lesson guide, was the most common systematic instructional practices embedded within shared reading interventions. I completed quality indicator coding (Test et al., 2009) for all 32 articles to identify if shared reading could be considered a practice with a strong base of research evidence. Only four of the 32 studies could be considered high-quality. As five high-quality studies are necessary for a practice to have a strong evidence base, shared reading continues to have a moderate evidence base.

The findings from this literature review highlight and reaffirm the need in the field of education for increased research on instructional strategies for students with extensive support needs in general education settings (Agran et al., 2019; Toews & Kurth, 2019). Only two studies (Courtade et al. 2013; Ruppar et al. 2017) were conducted entirely in general education settings in one-on-one groupings. Researchers, rather than natural intervention agents such as teachers, paraprofessionals, related service providers, and peers, implemented most of the shared reading interventions in existing research. The major implications for future research from this literature review are that future investigation of shared reading interventions for students with ESN should be implemented in general education settings, by natural intervention agents in small and whole groups of students. Teachers have reported that they do not include students with ESN in general education settings because they are unsure of strategies for inclusive service delivery (Ruppar et al., 2011; Roberts et al., 2013; Matzen et al., 2010). For this reason, dissemination of the strategies in research such as this could support teachers in the field to obtain knowledge of an
effective and feasible literacy instructional strategy for students with ESN in general education settings.

Chapter Three: Comparison of Shared Reading Using Modified and Non-Modified Grade-Level Books on Student Comprehension

The study in Chapter three compared the impact of modified and non-modified grade-level non-fiction texts on student book comprehension when used during one-on-one shared reading sessions in general education classrooms. Both student participants with ESN expressed higher comprehension of modified books compared to non-modified books, as shown by their higher number of accurate responses to comprehension questions about modified books. These findings support existing research in the field that shows students with ESN can access grade-level texts in general education settings with the appropriate adaptations (Courtade et al. 2013; Ruppar et al. 2017). This research also adds to research supporting shared reading as a literacy intervention that may support the comprehension skill development of students with ESN in general education settings. Together these findings support the use of typical grade-level texts in literacy instruction for students with ESN rather than special education curricula that can serve as a barrier to students receiving quality instruction in the general education setting (Hanreddy & Ostlund, 2019; Taub et al., 2017).

Although the intervention was successful, the general and special education teachers of the student participants report they would not have time to create the modified books or provide one-on-one intervention in the general educations setting. These teacher sentiments reflect a need for school administrators to ensure teachers have adequate collaborative planning and material preparation time built into their teaching contracts to support inclusive service delivery. Future research is needed that investigates methods for embedding shared reading interventions for
students with ESN into small and whole group instruction to address teacher difficulty in allotting 15 to 20 minutes for frequent one-on-one instruction with a single student. The fact that I, a researcher, was the interventionist and created the materials in this study impact the social validity of the findings. As noted previously and in a recent literature review on academic interventions for students with ESN in general education settings, there is a need for more research that is implemented by natural intervention agents (Kuntz & Carter, 2019). Lastly, the field of education needs more research strategies teachers can use to effectively identify the type and intensity of book modification needed to create access to grade-level books for students with ESN. This research should also strive to identify efficient material preparation strategies that are feasible for teachers to complete with their existing resources.

**Chapter Four: Investigation of Professional Development to Support Teacher Delivery of Individualized Shared Reading in Small Group General Education Reading Centers**

Within the study described in Chapter Four, three teachers received professional development and ongoing digital performance feedback to integrate a multicomponent shared reading intervention into small group literacy center rotations that included one student with ESN in general education classrooms. All teachers implemented engagement strategies, systematic instruction, and in the moment data collection with high fidelity following three separate professional development sessions and continued to increase in their procedural fidelity with the receipt of daily digital performance feedback. Additionally, there was no negative impact on student comprehension of books read during center rotations with the introduction of professional development for their teachers.

Findings from this study add to the growing base of research showing that teachers can implement individualized literacy interventions for students with ESN in general education
settings. The identified feasibility of teacher implemented specialized instruction and data
collection on the individualized educational goals of students with ESN in general education
settings provides more evidence that special education placements for students with ESN are not
necessary for individualized service delivery or progress monitoring. However, teachers can be
hesitant to include students with ESN in general education content instruction if they are unsure
of their ability to do so effectively (Matzen et al., 2010; Ruppar, 2017; Saloviita, 2015). This fact
highlights the importance of in- and pre-service professional development on specific strategies
for inclusive service delivery. It is important that university teacher preparation programs
provide opportunities for practice and individual performance feedback for teacher candidates in
systematic literacy instruction for students with ESN, such as shared reading, in general
education settings. Additionally, it is essential that future research investigates how districts and
teachers could work together to learn new instructional strategies from one another through
collaborative professional development structures such as Lesson Study (Gersten et al., 2010;
Perry & Lewis, 2008; Takahashi et al., 2013).

Conclusion

In summary, these three dissertation studies strengthen the base of evidence available
showing shared reading interventions can be effective in supporting engagement and book
comprehension for students with extensive support needs. Additionally, initial evidence in shared
reading demonstrates general and special educators can embed shared reading interventions for
students with ESN in small group literacy center rotations in general education settings. The
main implications of this dissertation are more research is needed on shared reading
interventions, implemented by natural intervention agents, in small and whole group instruction,
within general education settings. More empirical research on shared reading interventions for
students with ESN in general education settings could support teachers to know the strategies necessary for effective and efficient implementation and material preparation. Additionally, these studies provide further evidence that students with extensive support needs, who have a right to receive an education in the least restrictive environment, should be receiving that instruction within the general education setting with the appropriate accommodations for their success.

Shared reading with modified grade-level non-fiction texts is one strategy that was effective in providing access to grade-level instruction in general education settings for the participants in these dissertation studies.
References


Matzen, K., Ryndak, D., & Nakao, T. (2010). Middle school teams increasing access to general education for students with significant disabilities: Issues encountered and activities

https://doi.org/10.1177/0741932508327457


### Figure 1

**Shared Reading Coding Matrix**

<table>
<thead>
<tr>
<th>ID</th>
<th>Date Entered</th>
<th>Title</th>
<th>Author(s)</th>
<th>Year</th>
<th>Research Team (author/name of university)</th>
<th>Inclusion of Article based on Article Content (1 = Yes, 0 = No)</th>
<th>Explain why if removing from review</th>
<th>Peer Reviewed or dissertation (1 = Yes, 0 = No)</th>
<th>Experimental design</th>
<th>Research Questions</th>
<th>Number of participants (Students and teachers separately if teachers are considered participants?)</th>
<th>Student Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Education level (EL, MS, HS)**  
**Disability**  
Relevant student skill information (if present) ex. reading level, mode of communication)  
**Setting** (Inclusive class, segregated setting, 1:1 etc.)  
Secondary setting (if applicable)  
**Interventionist**  
**Included subjects without disabilities? (1 = Yes, 0 = No)**  
Describe role of students w/o disabilities or type NA  
**Materials** (Explicitly explain materials books, task analyses, lesson guides, curricula, etc.)  
**Training** if described (For who, how long, provided by who)  
**Data collector** (researcher, para, teacher, computer program etc.)

<table>
<thead>
<tr>
<th>Independent Variable (Intervention and or training)</th>
<th>Dependent Variable (what is being measured as Outcomes of the IV)</th>
<th>Frequency / Duration</th>
<th>Results DV</th>
<th>Results Social Validity</th>
<th>Results IOA</th>
<th>Results Implementation Fidelity</th>
<th>Implications</th>
<th>Notes</th>
<th>Articles for Ancestral Search</th>
<th>Other articles of interest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** EL = elementary school, MS = middle school, HS = high school
**Figure 2**

**Quality Indicators for Single-Case Research**

<table>
<thead>
<tr>
<th><strong>Description of Participants</strong></th>
<th><strong>Setting</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participants are described with sufficient detail to allow others to select similar individuals (e.g., age, gender, disability, diagnosis).</td>
<td>Age, disability, gender reported, and the description provided allows for possible replication of the study. Participants were operationally described.</td>
</tr>
<tr>
<td>2. The process for selecting participants is described with operational precision.</td>
<td>The process by which students were selected for participation is replicable. Participant selection was operationally described (or description of participants thorough enough that selection for future researchers is clear).</td>
</tr>
<tr>
<td><strong>Dependent Variable</strong></td>
<td><strong>Independent Variable</strong></td>
</tr>
<tr>
<td>3. Critical features of the physical setting are described with sufficient precision to allow replication.</td>
<td>Operational descriptions of the setting were provided. Another researcher should be able to use the description of participants and setting to recruit similar participants who inhabit similar settings.</td>
</tr>
<tr>
<td>4. Dependent variables are described with operational precision.</td>
<td>What is being measured in the study was operationally defined. Each dependent variable is described for valid consistent assessment of the variable.</td>
</tr>
<tr>
<td>5. Each dependent variable is measured with a procedure that generates a quantifiable index.</td>
<td>Measure of dependent variable is quantifiable (e.g., frequency and time) or observable.</td>
</tr>
<tr>
<td>6. Measurement of the dependent variable is valid and described with replicable precision.</td>
<td>The assessment process for each dependent variable can be replicated based on the description of measurement provided.</td>
</tr>
<tr>
<td>7. Dependent variables are measured repeatedly over time.</td>
<td>The dependent variable is measured repeatedly to allow for observation of patterns prior to intervention and comparison of performance across conditions or phases.</td>
</tr>
<tr>
<td>8. Data are collected on the reliability or interobserver agreement associated with each dependent variable, and IOA levels meet minimal standards (e.g., IOA = 80%; Kappa = 60%).</td>
<td>Interobserver reliability data were collected repeatedly throughout various phases of the study (e.g., not only in baseline).</td>
</tr>
</tbody>
</table>

**Independent Variable**

| 9. Independent variable is described with replicable precision. | The independent variable was operationally defined to allow both valid interpretation of the results and accurate replication of the procedures and may include descriptions of materials and specific actions but should avoid only generic descriptions (e.g., cooperative play) that are prone to high variability in implementation. |
| 10. Independent variable is systematically and under the control of the experimenter. | The independent variable was systematically manipulated (actively manipulated) by the researcher (not a naturally occurring event). The researcher determined when and how the independent variable would change. |
| 11. Overt measurement of the fidelity of implementation for the independent variable is highly desirable. | Documentation of procedural fidelity measures were provided, either through a continuous direct measure of the independent variable’s implementation or some other measure that is reported. |

**Procedures**
12. Most single-subject studies will include a baseline phase that provides repeated measurement of a dependent variable and established a pattern of responding that can be used to predict the pattern of future performance, if introduction or manipulation of the independent variable did not occur. The dependent variable was observed until a pattern of responding is consistent to allow for prediction of future responses (five or more are recommended, fewer are acceptable if pattern established).

13. Baseline conditions are described with replicable precision. Baseline conditions described with replicable procedures. Baseline should be described to the same level of detail as a treatment phase to allow for comparisons and replication of the study.

**Experimental Control/Internal Validity (Results/graph/design)**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>The design provides at least three demonstrations of experimental effect at three different points in time. At least three demonstrations of effect of the intervention were demonstrated at three points in time with one participant or across at least three participants. A demonstration of effect is an increase (desired increase), decrease (desired decrease), or desired reversal in direction of the anticipated pattern of data, with the introduction of the independent variable. Look at graphs for this evidence. A functional relationship is compromised when (a) there is a long latency between manipulation of the IV and a change in the DV, (b) mean changes across conditions are similar to changes within conditions, or (c) trends do not follow those predicted by introduction of the IV.</td>
</tr>
<tr>
<td>15.</td>
<td>The design controls for common threats to internal validity (e.g., permits elimination of rival hypotheses). Experimental control demonstrated through (a) introduction and withdrawal of the independent variable, (b) staggered introduction of the independent variable, or (c) manipulation of levels of the independent variable across observation periods.</td>
</tr>
<tr>
<td>16.</td>
<td>Experimental effects are replicated across participants, settings, or materials to establish external validity. External validity is enhanced through replicable descriptions of (a) participants, (b) study context, and (c) factors influencing behavior prior to intervention. Also enhanced through use of multiple participants or settings and multiple measures of the DV in one study. Weakened by selection and attrition bias. Demonstrated through systematic replications of studies across multiple locations and researchers.</td>
</tr>
</tbody>
</table>

**Social Validity**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>The dependent variable is socially important. The dependent variable selected is important for the individual(s) included in the study. A measure (interview and survey) strengthens quality of the study without a measure, only acceptable.</td>
</tr>
<tr>
<td>18.</td>
<td>The magnitude of change in the dependent variable is socially important. The amount of change in performance (dependent variable) has social significance, according to the author’s analysis of the SV measure. The amount of increase or decrease in a behavior as a result of the manipulation of the IV matters.</td>
</tr>
<tr>
<td>19.</td>
<td>Implementation of the independent variable is practical and cost effective. Costs reported and the procedures associated with the IV were determined by the author (or stakeholders) to be practical and cost efficient. Consider number of people required to implement the intervention, time allocated for the intervention, required manipulation of the setting, required materials.</td>
</tr>
<tr>
<td>20.</td>
<td>Social validity is enhanced by implementation of the independent variable over extended time periods, by typical intervention agents, in typical physical and social contexts. Typical intervention agents reported the procedures to be acceptable, feasible, and effective and choose to continue to the intervention after the study. This is enhanced by studies that demonstrate use of the IV with typical intervention agents (e.g., parents and teachers), in contexts that are not overly disruptive to regular class or home routines.</td>
</tr>
</tbody>
</table>
Appendix B

Figure 1B

Student Demographic Survey

<table>
<thead>
<tr>
<th><strong>Student Demographic Survey</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Please provide the student’s first name: ______________________</td>
</tr>
<tr>
<td>Your relationship to the student: ____________________________</td>
</tr>
<tr>
<td>The student’s primary disability label their IEP: ___________</td>
</tr>
<tr>
<td>The student’s secondary disability label their IEP (if applicable): ______________</td>
</tr>
<tr>
<td>The student’s race or Ethnicity: ______________</td>
</tr>
</tbody>
</table>

1. Is the student eligible for free and reduced lunch?  
   - Yes  
   - No  
   - Don’t know

2. Is there a behavior plan in student’s current IEP?  
   - Yes  
   - No

3. Is there a health care plan in student’s current IEP?  
   - Yes  
   - No

4. Student’s current (or anticipated) course of study:  
   - General diploma  
   - Certificate of Completion  
   - Other, please describe: ______________

5. How many hours does this student spend in general education coursework with general education peers (general education English, Science, Math or other academic courses)?  
   - 0 hours  
   - Less than 1 hour  
   - Between 1-3 hours  
   - Between 4-5 hours  
   - Full day

6. How many hours does this student spend with non-disabled peers outside of academic coursework (lunch, free time, fine arts elective, etc):  
   - 0 hours  
   - Less than 1 hour  
   - Between 1-3 hours  
   - Between 4-5 hours  
   - Full day

7. Please indicate student’s level of intelligence (estimated is fine):  
   - IQ within normal limits (70 and above)  
   - Mild intellectual disability (IQ 60-69)  
   - Moderate intellectual disability (IQ 45-60)  
   - Severe/Profound (IQ 44 and below)
8. Please describe how this student communicates *most of the time*: (check all that apply)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1: No support</strong></td>
<td>The student is able to perform the task on his/her own with no prompts or assistance</td>
</tr>
<tr>
<td><strong>2: Indirect support</strong></td>
<td>- <em>Indirect (Verbal or Nonverbal)</em> – tell the student that something is expected, but not exactly what (e.g., “Now what?” “What’s next?”), etc. or use body language (e.g., expectant facial expression, questioning hand motion with a shrug, etc.)&lt;br&gt;  - <em>Direct Verbal</em> – tell the student what he/she is expected to do or say (e.g., “Turn your powerchair right.”)</td>
</tr>
<tr>
<td><strong>3: Gestures or Modeling Prompts</strong></td>
<td>- <em>Gesture</em> – indicate with a motion what you want the student to do (e.g., pointing)&lt;br&gt;  - <em>Modeling</em> – show the student what you want him/her to do</td>
</tr>
<tr>
<td><strong>4: Physical Assistance</strong></td>
<td>The student requires physical assistance, such as touching his/her elbow and gently nudging the student to prompt the student to pick up a pencil. This could also include using hand-under-hand or hand-over-hand guidance.</td>
</tr>
<tr>
<td><strong>5: Full Assistance</strong></td>
<td>An adult generally completes the task for the student</td>
</tr>
</tbody>
</table>

9. Please rate the frequency the student needs support in each type of activity, using the definitions above.

<table>
<thead>
<tr>
<th></th>
<th>1 – no support (0 times in an average week)</th>
<th>2 – Infrequent support (3-5 times in an average week)</th>
<th>3 – Frequent support (3 or more times in an average day)</th>
<th>4 – Extraordinary support (5 or more times in an average day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-care (managing clothing, eating, hygiene)</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Learning academic knowledge or skills</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Regulating and managing appropriate behavior</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Communicating with others</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note. IEP = individualized education program*
Figure 2B

**Academic & Communication Assessment Survey**

<table>
<thead>
<tr>
<th>Academic &amp; Communication Assessment Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID:</td>
</tr>
<tr>
<td>Grade:</td>
</tr>
<tr>
<td>Teacher ID:</td>
</tr>
</tbody>
</table>

**Communication**

**Speech Communication (Expressive Skills)**

1. Does the student use speech to meet expressive communication needs?
   - Yes
   - No

2. Estimate student’s spontaneous spoken vocabulary (select one):
   - Does not use speech
   - 1-5 words
   - 6-20 words
   - 21-50 words
   - 51-200 words
   - greater than 200 words
   - Expected # or words in spontaneous vocabulary: ______________

3. Choose the statement that best describes the student’s expressive communication with speech; spoken words can be word approximations as long as meaning can be deduced by a familiar person (choose the highest level that applies):
   - Regularly combines 3 or more spoken words, at least approximating grammatical rules, to accomplish a variety of communicative purposes (e.g., sharing complex information, asking/answering longer questions, giving directions to another person)
   - Usually uses 2 spoken words at a time to meet a variety of communicative purposes (e.g., obtaining things including absent objects, social expressions beyond greetings, sharing information, directing another person’s attention, asking/answering questions, and commenting)
   - Usually uses only 1 spoken word to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, making choices, requesting attention, greeting, and/or labeling)
   - Occasionally uses 1 spoken word to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, making choices, requesting attention, greeting, and/or labeling)
   - Imitates, repeats, or produces single words or phrases, but spontaneous use for simple communicative purposes is rare or non-existent
   - Does not use speech

4. What spoken vocabulary does the student use in naturalistic school settings? (select all that apply)
   - Academic content vocabulary related to general education grade-level content (e.g., identifiers or descriptive language)
   - Grammatical vocabulary used in constructing sentences (e.g., articles, prefixes, conjunctions)
   - Vocabulary for describing notable events and personal experiences, past present, and future (e.g., trip to museum, grandma’s house)
   - Basic academic vocabulary (e.g., colors, numbers, shapes, letters)
   - Community living or self-help vocabulary (items of clothing, places in the community)
   - Emergency or health vocabulary (e.g., illness, pain, medications, physical discomfort)
   - Social Vocabulary (e.g., greetings, names of people)
   - Functional request or reject vocabulary (e.g., food, drink, “want”, “more” “no!”)
   - Does not use speech

**Sign Language**
5. Does the student use sign language expressively in addition to or in place of speech to meet expressive communication needs?
   - Yes
   - No

6. Select the student’s primary sign system (choose the highest level that applies):
   - American Sign Language (ASL)
   - Signed Exact English (SEE)
   - Hybrid or idiosyncratic/personalized signing system
   - Other (specify)
   - Does not use sign language

7. Estimate this student's spontaneous sign vocabulary (select one):
   - Does not use sign language
   - 1-5 words
   - 6-20 words
   - 21-50 words
   - 51-200 words
   - greater than 200 words

8. Choose the statement that best describes the student’s expressive communication with sign language; signed words can be sign approximations as long as their meaning can be deduced by a familiar person (select one):
   - Regularly combines 3 or more signed words, at least approximating grammatical rules, to accomplish a variety of communicative purposes (e.g., sharing complex information, asking/answering longer questions, giving directions to another person)
   - Usually uses 2 signed words at a time to meet a variety of communicative purposes (e.g., obtaining things including absent objects, social expressions beyond greetings, sharing information, directing another person’s attention, asking/answering questions, and commenting)
   - Usually uses only 1 signed word to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, requesting, making choices, securing attention, greeting, and labeling)
   - Occasionally uses 1 signed word to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, requesting, making choices, securing attention, greeting, and/or labeling)
   - Imitates or produces signs when directed to do so, but spontaneous use for simple communicative purposes is rare or non-existent
   - Does not use sign language

9. What signing vocabulary does the student use in naturalistic school settings? (Indicate all that apply)
   - Academic content vocabulary related to general education grade-level content (e.g., identifiers or descriptive language)
   - Grammatical vocabulary used in constructing sentences (e.g., articles, prefixes, conjunctions)
   - Vocabulary for describing notable events and personal experiences, past present, and future (e.g., trip to museum, grandma’s house)
   - Basic academic vocabulary (e.g., colors, numbers, shapes, letters)
   - Community living or self-help vocabulary (items of clothing, places in the community)
   - Emergency or health vocabulary (e.g., illness, pain, medications, physical discomfort)
   - Social Vocabulary (e.g., greetings, names of people)
   - Functional request or reject vocabulary (e.g., food, drink, “want”, “more” “no!”)
   - Does not use sign language

Augmentative and Alternate Communication (AAC)

10. Does the student use AAC in addition to or in place of speech or sign language to meet expressive communication needs?
    - Yes
    - No
11. Estimate this person's spontaneous symbol/word vocabulary across all AAC system(s) (choose the highest level that applies)
   - Does not use AAC
   - 1-5 pictures, symbols, words, keys, or rote phrases
   - 6-20 pictures, symbols, words, keys, or rote phrases
   - 21-50 pictures, symbols, words, keys, or rote phrases
   - 51-200 pictures, symbols, words, keys, or rote phrases
   - greater than 200 pictures, symbols, words, keys, or rote phrases

12. Choose the statement that best describes the student’s expressive communication with AAC (select one):
   - Regularly combines 3 or more symbols, at least approximating grammatical patterns, to accomplish a variety of communicative purposes (e.g., sharing complex information, asking/answering longer questions, giving directions to another person)
   - Usually uses 2 symbols at a time to meet a variety of more complex communicative purposes (e.g., obtaining things including absent objects, social expressions beyond greetings, sharing information, directing another person’s attention, asking/answering questions, and commenting)
   - Usually uses only 1 symbol to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, making choices, requesting attention, greeting, and labeling)
   - Occasionally uses 1 symbol to meet a limited number of simple communicative purposes (e.g., refusing/rejecting things, making choices, requesting attention, greeting, and labeling)
   - Imitates or produces a device-consistent response when directed to do so, but spontaneous use for simple communicative purposes is rare or non-existent
   - Does not use AAC

13. How many symbols does the student choose from when communicating? (select one level that best applies)
   - Does not use symbols
   - 1 or 2 at a time
   - 3 or 4 at a time
   - 5 to 9 at a time
   - 10 or more at a time

14. What types of symbols does the student use? (select all that apply)
   - Real objects
   - Tactile symbols
   - Pictures, photos, line drawings
   - Representational symbol systems (e.g., Picsyms, Semantic Compaction; Bliss symbols)
   - Text and letters
   - Does not use symbols

15. What voice output technology does the student use? (select all that apply)
   - None
   - Single message devices (e.g., BIGmac)
   - Simple devices (e.g., GoTalk; QuickTalker; SuperTalker)
   - Complex speech generating devices (e.g., Tobii-DynaVox, PRC, ProLoQuo)

16. What level of system complexity does the student work with on a daily basis? (select the highest that applies)
   - Does not use symbols
   - One level or page; other pages do not exist or they are not functional or not used
   - One level or page; support person can change pages, and student then responds
   - Autonomously switches from pages based on needs or changing activities

17. What AAC vocabulary (pictures, words, symbols, letters) does the student use in naturalistic school settings? (indicate all that apply)
   - Academic content vocabulary related to general education grade-level content (e.g., identifiers or descriptive language)
   - Grammatical vocabulary used in constructing sentences (e.g., articles, prefixes, conjunctions)
o Vocabulary for describing notable events and personal experiences, past present, and future (e.g., trip to museum, grandma’s house)
  o Basic academic vocabulary (e.g., colors, numbers, shapes, letters)
  o Community living or self-help vocabulary (items of clothing, places in the community)
  o Emergency or health vocabulary (e.g., illness, pain, medications, physical discomfort)
  o Social Vocabulary (e.g., greetings, names of people)
  o Functional request or reject vocabulary (e.g., food, drink, “want”, “more” “no!”)
  o Does not use AAC

Other Communication Modalities

18. If the student does not use speech, sign language, or augmentative or alternative communication, which of the following statements best describes the student’s expressive communication? (select the statement that best applies)
  o Uses conventional gestures (e.g., waving, nodding and shaking head, thumbs up or down), looking, pointing, purposeful eye-gazing, and/or vocalizations to communicate intentionally but does not presently use symbols or sign language
  o Uses in an intentional manner unconventional vocalizations (e.g., making noise for attention, grunts to express satisfaction), unconventional gestures (e.g., opening mouth to indicate hunger and closing mouth to indicate done), and/or body movements (squirming to indicate discomfort) to communicate with others
  o Exhibits only behaviors that may be reflexive and are not intentionally communicative but are interpreted by others as communication (e.g., turning away, crying, laughing when physically stimulated, spitting out food, reaching for an object, pushing an object away)
  o Does not apply

Understanding Language (Receptive Skills)

19. How consistently does the student recognize the sight, sound, or touch of desired people, places, or things? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
  o Never or Almost Never (0-20% of the time)
  o Occasionally (21-50% of the time)
  o Frequently (51-80% of the time)
  o Consistently (more than 80% of the time)

20. How consistently does the student match equivalent things in the immediate vicinity when asked (e.g., pictures, objects, symbols, or other referents)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
  o Never or Almost Never (0-20% of the time)
  o Occasionally (21-50% of the time)
  o Frequently (51-80% of the time)
  o Consistently (more than 80% of the time)

21. How consistently does the student point to, look at, or touch things in the immediate vicinity when asked (e.g., pictures, objects, symbols, other referents)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
  o Never or Almost Never (0-20% of the time)
  o Occasionally (21-50% of the time)
  o Frequently (51-80% of the time)
  o Consistently (more than 80% of the time)

22. How consistently does the student perform simple actions, movements, or activities when asked (e.g., comes to teacher’s location, gives an object to teacher or peer, locates or retrieves an object)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
  o Never or Almost Never (0-20% of the time)
  o Occasionally (21-50% of the time)
  o Frequently (51-80% of the time)
  o Consistently (more than 80% of the time)
23. How consistently does the student respond appropriately, using speech, sign, gestures, facial expression, when offered a favorite item that is not present or visible (e.g., “Do you want ice cream?”)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

24. How consistently does the student respond appropriately in any modality (speech, sign, gestures, facial expressions) to single words that are spoken, signed, or pointed to? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

25. How consistently does the student respond appropriately in any modality (sign, gestures, facial expressions) to phrases and sentences that are spoken, signed, or pointed to? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

26. How consistently does the student follows directions involving more than one step when prompted to do so (e.g., gets a worksheet or journal and begins to work; distributes items needed by peers for a lesson or activity; looks at requested or desired item and then looks at location where it should go)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

27. How proficient/consistent is the student in showing understanding of discourse, using spoken words, symbols, signs, yes/no responding, or conventional gestures that express understanding (e.g., smiles, laughing, looks of acknowledgement) in conversations about events, materials, or activities occurring in the immediate environment (context supported discussion)?
   - Frequently does not use or show understanding of language about something occurring in the immediate environment; e.g., teacher is describing the actions of another person in room, and the student does not recognize how the words map onto the actions
   - Frequently uses or shows understanding of language about something occurring in the immediate environment; e.g., teacher is describing the actions of another person in room, and the student shows understanding of the description as it is presented
   - Frequently uses or shows understanding of language about something occurring in the immediate environment, and can add to it; e.g., teacher is describing the actions of another person in the room, and the student can add something not yet mentioned about what is being observed

28. How proficient/consistent is the student in showing understanding of discourse, using spoken words, symbols, signs, yes/no responding, or conventional gestures that express understanding (e.g., smiles, laughing, looks of acknowledgement) in conversations about events, materials, or activities that were experienced or observed by the student in the past (experience supported discussion)?
   - Frequently does not use or show understanding of language that identifies or represents something that that occurred in the student’s past; e.g., an outing last week to a museum is discussed and no recall is expressed in student’s reactions or communications
Frequently uses or shows understanding of language that describes something that occurred in the student’s past; e.g., an outing last week to a museum is discussed and descriptions prompt remembering, as evidenced by the student’s expressions or communications.

Frequently uses or shows understanding of language that describes something that occurred in the student’s past, and the student can add a detail, additional fact, or wants to know more; e.g., an outing last week to a museum is discussed and the student can provide an additional detail.

29. How proficient/consistent is the student in showing understanding of discourse, using spoken words, symbols, signs, yes/no responding, or conventional gestures that express understanding (e.g., smiles, laughing, looks of acknowledgement) in conversations about the world we live in that the student has been instructed on in lessons and educational activities (academically supported discussion)?
   - Frequently, does not name, identify, or show by some other means (e.g., yes/no answers) recognition of people, places and things from school lessons when prompted or asked to do so; e.g., does not readily match pictures to spoken words of animals without assistance, despite weeks of instruction.
   - Frequently names, identifies, or shows by some other means (e.g., yes/no answers) recognition of people, places and things from school lessons when prompted or asked to do so; e.g., readily matches pictures to spoken words of animals following periods of instruction without assistance.
   - Frequently names, identifies, or shows by some other means (e.g., yes/no answers) multiple characteristics of things being studied when prompted or asked to do so; e.g., can define several qualities of a mammal, or give several examples and non-examples.

30. In what way does this student presently acquire new vocabulary, in any modality? (choose the highest level that applies)
   - Does acquire new words *incidentally* when being used by adults and peers on a weekly or daily basis that are related to the naturalistic activities of instruction in which he/she is participating.
   - Does acquire new words *with instruction or encouragement* when being used by adults and peers on a weekly or daily basis that are related to the naturalistic activities of instruction in which he/she is participating.
   - Does acquire new words *with instruction* when targeted as part of daily or weekly ongoing instruction in the natural environment (e.g. embedded instruction).
   - Does acquire new words that are targeted in daily or weekly instruction through *intensive training and practice routines*.
   - Does acquire new words mostly over a long period of time (e.g., months); *intensive training and practice routines* occur on a daily or weekly basis but vocabulary acquisition does not readily occur.
   - Acquires new words rarely or not at all; may have a basic vocabulary used either expressively or receptively, but instruction either focuses on other more functional learning targets, or has not been very successful so far.

**ACADEMICS**

**Attention and Understanding of Instruction**

31. Student’s level of attention to teacher-directed instruction (select the highest level that applies)
   - Generally sustains attention to teacher-directed instruction.
   - Demonstrates fleeting attention to teacher-directed instructional activities and requires repeated bids or prompts for attention.
   - Demonstrates little or no attention to teacher-directed instructional activities.

32. Student’s level of attention to computer-directed instruction (select the highest level that applies)
   - Generally sustains attention to computer-directed instruction.
   - Demonstrates fleeting attention to computer-directed instructional activities and requires repeated bids or prompts for attention.
   - Demonstrates little or no attention to computer-directed instructional activities.

33. Student’s general level of understanding instruction (select the highest level that applies)
Applies understanding of skills and concepts to novel instructional activities (e.g., generalizes learning to new settings, uses previously learned skills in unfamiliar problems or situations; may require reminders or nondirective prompts)

Demonstrates recall of previously instructed skills and concepts in similar situations without prompting and support (e.g., uses previously learned skills in familiar problems or situations without prompting or instructional support)

Demonstrates partial recall of previously instructed skills and concepts with prompting and support (e.g., uses previously learned skills only with explicit prompts and/or instructional support)

Participates in instructional activities with prompting and support (e.g., participates but does not readily apply previously taught skills to familiar situations even with explicit prompts or instructional support)

Does not participate in instructional activities even with prompting and support

Literacy Skills: Reading

34. How consistently does the student recognize single symbols presented visually or tactually (e.g., letters, numerals, environmental signs such as restroom symbols, logos, trademarks, or business signs such as fast food restaurants)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

35. How consistently does the student understand purpose of print or Braille but not necessarily by manipulating a book (e.g., knows correct orientation, does find beginning of text, understands purpose of text in print or Braille, enjoys being read to)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

36. How consistently does the student enjoy hearing familiar stories read out loud, responding sometimes to critical events? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

37. How consistently does the student look through certain familiar books, using the pictures to know the stories? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

38. How consistently does the student match sounds to symbols or signs to symbols (e.g., matches sounds to letters presented visually or tactually, matches spoken word or signed words to written words)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
</table>
| 39. How consistently can the student be taught a task or routine through pictorial or video-based instruction? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 40. How consistently does the student follow a social story that is presented in pictures or read out loud by an adult? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 41. How consistently does the student read words, phrases, or sentences in print or Braille when symbols are provided with the words? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 42. How consistently does the student identify individual words without picture support (e.g., recognizes words in print or Braille; does choose correct word using eye gaze)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 43. How consistently does the student participate in shared reading activities with peers by reading portions of the text, pointing to or identifying key words, or directing attention to pictures in relation to what is being read? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 44. How consistently does the student read text presented in print or Braille but does not answer questions or interpret the text? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 45. How consistently does the student read text in print or Braille, showing comprehension by locating answers in text, answering questions, retelling after reading, or completing maze tasks)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
| 46. How consistently does the student associate something read with something in personal life? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”) | Never or Almost Never (0-20% of the time)  
Occasionally (21-50% of the time)  
Frequently (51-80% of the time)  
Consistently (more than 80% of the time) |
Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)

47. How consistently does the student explain or elaborates on text read in print or Braille? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)

Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)

48. Student’s approximate instructional reading level in print or Braille (choose the highest level that applies)

Does not read any words when presented in print or Braille (not including environmental signs or logos)
Reads only a few words or up to pre-primer level
Primer to first grade level
Above first grade level to second grade level
Above second grade level to third grade level
Above third grade level

Literacy Skills: Writing

49. How consistently does the student make marks or scribbles with a marker on a paper; or, randomly taps keys on a key board and looks at screen to see effect? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)

Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)

50. How consistently does the student know to mark in particular places and not others (e.g., name at top of page; mark a picture that is an answer)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)

Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)

51. How consistently does the student produce letters or symbols when asked to write, without regard to meaning (e.g., writes single letters or numbers with a crayon, randomly selects letters from alphabet or on keyboard, randomly selects symbols from communication board)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)

Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)

52. How consistently does the student copy or trace letters and words with marker or with keyboard but does not independently write? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)

Never or Almost Never (0-20% of the time)
Occasionally (21-50% of the time)
Frequently (51-80% of the time)
Consistently (more than 80% of the time)
53. How consistently does the student select symbols to express meaning when asked to write (e.g., forms words with pencil or pen or by choosing letters on keyboard, selects symbols on communication board)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

54. How consistently does the student dictate several ideas or experiences for a partner to write which are aligned with a theme, teacher- or self-selected? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

55. How consistently does the student write word sequences using word banks to select or copy words (e.g., copies words with pencil or pen, copies words using keyboard, selects words on communication board)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

56. How consistently does the student write (paper, keyboards or AAC symbols) words showing awareness of letters as sound in words and the interchangeability of letters/sounds across words? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

57. How consistently does the student write (paper, keyboards or AAC symbols) to convey simple experiences, thoughts, or ideas? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

58. How consistently does the student use spelling (not always correct) to write simple phrases and sentences (e.g., writes phrases and sentences independently without copying, uses keyboard or other technology to produce phrases and sentences without copying)? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

59. How consistently does the student produce paragraph-length text via writing, keyboarding, or other technology that presents opening, content, and closing ideas without copying? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)
60. How consistently does the student produce by writing, keyboarding, symbol selection, or dictation a story sequence aligned with a theme or experience? (if the student previously demonstrated and no longer receives or needs instruction, mark “consistently”)
   - Never or Almost Never (0-20% of the time)
   - Occasionally (21-50% of the time)
   - Frequently (51-80% of the time)
   - Consistently (more than 80% of the time)

61. Student’s approximate instructional writing level in print or technology: Choose the highest one that applies
   - Does not write any words when presented with pencils, markers, or technology
   - Writes only a few words or up to kindergarten level
   - Kindergarten to first grade level
   - Above first grade level to second grade level
   - Above second grade level to third grade level
   - Above third grade level
Figure 3B

Initial Teacher Interview

Initial Teacher Interview Literacy Practices
1. What is the typical structure of a literacy block the general education class? For example, what teaching structures do you use, including lecture, station rotations, Daily 5, readers theater, or other structures?

2. How frequently do you or the general education teacher currently meet with small groups for book reading during center rotations if you do center rotation? If you do not currently do center rotations would you be willing to meet with small groups for a short reading center three times per week for 20 minutes for 6-8 weeks for this project?

3. As part of this project I will be creating short lessons to go with short nonfiction texts. Are there any specific science or history topics you would like me to target in these books? Additionally, are there any specific comprehension strategies you would like me to target in lessons?

4. What does a typical day look like for the target student participant during literacy center rotations? Do they follow the same rotations as their peers?

5. Do you currently support (Target student name) during small group literacy stations? If not, do you have any concerns about supporting (Target student name) in a small group reading center group? Please describe those concerns?

Initial Teacher Interview on Student Characteristics
1. Can you describe the current present levels of performance in literacy skills (i.e. engagement with books, phonemic awareness, phonics, fluency, vocabulary, comprehension) for (Target student name)?

2. Can you describe the current literacy interventions or programs the student participates in either within the general education classroom or special education setting?

3. What are (Target student name) preferred response modes the student uses (e.g. verbal, aided augmentative and alternative communication (AAC), unaided AAC)?

4. Does (Target student name) use any behavior support systems? What types of things are most motivating for (Target student name) to do work?

5. Is there any other information you think is important me to know before working on reading with the (Target student name) (e.g., student interest or triggers for frustration)?
Figure 4B

Book Characteristics

<table>
<thead>
<tr>
<th>Participant</th>
<th>Non-Modified</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do You Know?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ben</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Discoveries Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. What are the scientists trying to discover?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What kind of animal did we read about on this page?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What kind of animal lives in a plant?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What animal helps plants grow?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. What kind of discoveries did we read about in this book?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant</th>
<th>Non-Modified</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camilla</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Big Lizards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Komodo dragons are the biggest lizards in the world. Lizards are reptiles. Snakes, turtles, and alligators are also reptiles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. What kind of animal is a Komodo Dragon?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What size are Komodo Dragons?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Where do Komodo Dragon live?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What is in the Komodo Dragon's nest?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. What is this book about?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Figure 5B**

*Procedural Fidelity Form*

Procedural Fidelity Data Sheet: Book _____

<table>
<thead>
<tr>
<th>Date:</th>
<th>Rater:</th>
<th>Condition: Modified Book / Non-Modified Book</th>
<th>Tally Occurrence of Behavior</th>
<th>Expected Number of Tallies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Test Procedure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greet student by name</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tell student we are going to read together</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tell student you are going to ask questions about a book you have not read</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Remind student it is ok if they do not know the answer</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Show student the book.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ask a comprehension question listed on the data collection sheet</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Provide 5 s response interval</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Say, “Thank you” after a student response</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Provide praise of any kind after a student response</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Say, “Thank you” and tell student you will now read a book after last question on data sheet</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Book Reading Procedure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tell student we are going to read together</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><em>(Mod Only)</em>- Review all text and pictures on vocabulary/concept sheet before reading</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Read all text out loud</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Gain student attention before starting to read each page- e.g. point to a word, read a sight word, verbally say “ready”, have student interact by turning the page, state that you are going to start reading and student looks at page.</td>
<td></td>
<td></td>
<td>Number of pages in book including cover</td>
<td></td>
</tr>
<tr>
<td><em>(Modified Condition Only)</em>- Paused to point to a picture supporting adapted text.</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><em>(Modified Condition Only)</em>- Gain student attention before reading adapted text.</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><em>(Modified Condition Only)</em>- Read adapted text before asking question.</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Asked student to engage with the text (e.g. point to a picture or word, turn a page, ask an opinion)</td>
<td></td>
<td></td>
<td>Number of pages in book including cover</td>
<td></td>
</tr>
<tr>
<td><strong>Post-Test Procedure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The implementer says, “(Name) I have a question, are you ready?” and waits for verbal or physical response from student before asking question.</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>The implementer asks a question as it is listed on the data collection sheet</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>*(Modified Condition Only)*Student’s preferred response mode is made available</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Provide 5 s response interval before delivering the controlling prompt if no response, deliver correction for incorrect, or praise for correct.</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Says “let’s keep reading” or other attention getter before resuming reading.</td>
<td></td>
<td></td>
<td>5 or 4 if last question occurs at end of book</td>
<td></td>
</tr>
<tr>
<td>Thanks the student for reading together</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Figure 6B

*In-Person Social Validity Interview*

RA Teacher Exit Interview

1. Could you see yourself or paraprofessionals implementing a 1:1 shared reading intervention in the general ed. setting like the one I have done? -Probe for who they would see implementing the intervention.

2. What benefits do you see to this intervention?

3. What barriers or negative effects do you see related to delivering this intervention? -Probe for both barriers and negative effects if only one is mentioned.

4. Were there any unexpected impacts this intervention had on student access to general education content or progress in their individualized goals?
**Teacher Social Validity Survey**

*Teacher Social Validity Form*

**Teacher:** Thinking about the process of delivering the shared reading intervention 1:1 within the general education classroom with your student, please answer the following questions.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students with ESN can learn academic content in the general education classroom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>This process supported (student) progress on their individual learning goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The shared reading intervention seems effective in supporting (student) access to general education curriculum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>(Student’s) learning needs are significant enough to justify the use of adapted texts and this kind of shared reading intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The intervention is practical for myself or a para-professional to implement in the general education classroom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I will use some of the strategies or supports (modified books, planned questions, time-delay) to support students in the future.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I would recommend using shared reading with modified non-fiction text to other teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The demands on my time to create materials for this type of shared reading intervention are reasonable.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The cost related to this intervention are feasible with the resources I have.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Were there any unexpected, or unintended outcomes, of providing this shared reading intervention?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any unexpected, or unintended outcomes, of providing this shared reading intervention?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other things you would like us to know:

Appendix C

Figure 1

Teacher Demographics Form

TEACHER DEMOGRAPHIC SURVEY

1. What is your current role?
   ____ General Education Teacher  ____ Special Education Teacher

2. What valid teaching credentials do you currently hold? Please check all that apply. If no credential held please indicate if you are working toward a credential. Leave this question blank if no options apply to you.

   Special Education
      _______ Mild/Moderate (High Incidence)  _______ Severe /Profound (Low Incidence)
   General Education
      _______ Multiple Subjects (Elementary)  _______ Single Subjects (Secondary)
         _______ Art  _______ English  _______ Mathematics
         _______ Music  _______ Science  _______ Social Science
         _______ Foreign Language

   Development
      _______ Currently working toward teaching credential
      _______ I have taken college level child development or education courses. Please indicate number of courses ______

3. What is your gender?

      _______ Female  _______ Male  Prefer to self-describe________________________

4. What is your current age?

      _______ years

5. What is your ethnicity?

      _______ White  _______ Black or African-American  _______ Native American
      _______ Asian  _______ Latino or Hispanic  _______ Two or more
      _______ Choose not to disclose

6. For how many years have you worked in any of the following roles, including this year?

      _______ Years as a general education teacher
      _______ Years as a special education teacher
      _______ Years as an administrator
Years as a paraprofessional
Other (describe)

7. Please indicate the highest degree you have completed:
   - Some High School Completed
   - High School Diploma
   - Associates degree
   - Bachelor’s degree
   - Master’s degree
   - Doctoral degree

8. What are the grade levels you currently teach/support?
   - Pre-School
   - Elementary (grades K-5)
   - Secondary (grades 6-12)

9. Think about the classes you teach/support. How many students, on average, are in your classes? If you are special education teacher, how many students are on your caseload this year? If you are a paraprofessional, how many students are you expected to support?

10. The school that you work at can best be described as:
    - A neighborhood school (students from the local neighborhood attend)
    - A charter school
    - A private school
    - Other (describe)

11. Thinking about your teacher preparation or job training (both pre- and in-service), have you ever had any preparation or training in inclusive education for students with severe disabilities? Please check all that apply.
    - Yes, in my teacher preparation program (e.g., coursework)
    - Yes, as an in-service training
    - Yes, in my new hire job training
    - None
    - Other (describe)

12. Have you worked in an inclusive setting, now or in the past, in which you (alone or in collaboration with others) have included students with severe disabilities in general education academic instruction?
    - Yes, I regularly do this now
    - Yes, I regularly did this in the past
    - Yes, I have done this on a few occasions now or in the past
    - No, I have never or have rarely done this
    - Other (describe)

13. Please tell us about your typical workday. What do you do each hour? If it helps, you can write down what you did yesterday. For example, co-teaching math, prep period, etc.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 8 AM</td>
<td></td>
</tr>
<tr>
<td>8-9 AM</td>
<td></td>
</tr>
<tr>
<td>9-10 AM</td>
<td></td>
</tr>
<tr>
<td>10-11 AM</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Details</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>11-12 Noon</td>
<td></td>
</tr>
<tr>
<td>12-1 PM</td>
<td></td>
</tr>
<tr>
<td>1-2 PM</td>
<td></td>
</tr>
<tr>
<td>2-3 PM</td>
<td></td>
</tr>
<tr>
<td>3-4 PM</td>
<td></td>
</tr>
<tr>
<td>4-5 PM</td>
<td></td>
</tr>
<tr>
<td>Evenings (work related)</td>
<td></td>
</tr>
</tbody>
</table>
### Figure 2

**Examples of Adapted Books**

<table>
<thead>
<tr>
<th>Teacher and Student/Book Source</th>
<th>Modified Text Sections and Embedded Question Prompt</th>
<th>Repetitive Text Lines</th>
<th>Pre-Reading Concept Review</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Archer and Alex/ Wonders for 5th Grade by McGraw Hill and Reading A-Z Level X</td>
<td>![Image of modified text sections and embedded question prompt]</td>
<td>![Image of repetitive text lines]</td>
<td>![Image of pre-reading concept review]</td>
<td>![Image of response options]</td>
</tr>
<tr>
<td>Ms. Olson and Ben/ Wonders for 4th Grade by McGraw Hill</td>
<td>![Image of modified text sections and embedded question prompt]</td>
<td>![Image of repetitive text lines]</td>
<td>![Image of pre-reading concept review]</td>
<td>![Image of response options]</td>
</tr>
</tbody>
</table>
Figure 3

Sample Lesson Plan

<table>
<thead>
<tr>
<th>Book title: Whale Sharks (Pages 1-10, 14-15)</th>
<th>Lesson number: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson Length: 15-20 Mins</td>
<td>Grouping: 3-5 students</td>
</tr>
</tbody>
</table>

Today’s Topic: Non-Fiction Book Features

KSDE 1st Grade ELA Standards Addressed:

Reading: Informational

Craft and Structure

RI.1.5 Know and use various book features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a book.

Topic Introduction:

- Show students the title page. Discuss the information on the page (title of book, author’s name).
- Tell students you will be looking at labels in the book today. Explain that labels are the words within a picture that help the reader understand information about or parts of an animal, person, or thing.

Suggested Discussion, Questioning, and Teaching Strategies:

As you read, pause before images with labels. Ask students to read the labels within the image and discuss what new information they learned.

Example discussion:

- P. 4- Teacher- Point to the label on the whale shark and the human then read them. Discuss how they show the size of a whale shark in relation to a human.

Other labels to discuss:

- P. 8 – image: What Makes a Whale Shark a Fish- Point to and read each label.
  - Ask students to turn and talk to share 1 thing they learned about the whale shark from the labels.
- P. 10- image: Where Whale Sharks Live- Point out that the label helps the students understand where whale sharks live.

Wrap up the reading by reminding students how labels can help a reader understand what they are reading in a non-fiction book. Ask if any student wants to share one thing they learned from reading the labels on pictures in the book today.
Engage, Redirect, or Reinforce Points for Student C:

a. Teacher drew student attention to the pre-reading sheet and each picture supported vocabulary/concept on pre-reading sheet before reading book.

<table>
<thead>
<tr>
<th>General Attention to Pre-Reading Sheet</th>
<th>Ocean/Warm Water</th>
<th>Fish</th>
<th>Swim</th>
</tr>
</thead>
</table>

b. Teacher gained student attention, redirected attention, or reinforced student for attending to the book before reading adapted text (yellow text or blue repeated text line) or reinforced the student for their clear attention.

|---------------|-----------------------------------|---------------|---------------------------------|---------------|-------------------------------|-----------------------------|-----------------------------|

c. The teacher gained the student attention before asking a question. (Minimum 5 opportunities)

* Do not count questions posed to whole group. Only record questions directed to student C.

<table>
<thead>
<tr>
<th>Q1-P. 5</th>
<th>Q2-P. 7</th>
<th>Q3-P. 9</th>
<th>Q4-P. 10</th>
<th>Q5-P. 15</th>
</tr>
</thead>
</table>

Planned Questions and Time Delay

<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
<th>Time Delay</th>
<th>Data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ask question after reading adapted text P. 5</td>
<td>5 Second</td>
<td>Correct Independent Incorrect/Prompted</td>
</tr>
<tr>
<td></td>
<td>Point to question green question and options, “What do whale sharks eat? People, Nine, Fish”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Ask question after reading adapted text P. 7</td>
<td>5 Second</td>
<td>Correct Independent Incorrect/Prompted</td>
</tr>
<tr>
<td></td>
<td>Point to question green question and options, “Where do whale sharks live? Forest, Ocean, Red”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Ask question after reading adapted text P. 9</td>
<td>5 Second</td>
<td>Correct Independent Incorrect/Prompted</td>
</tr>
<tr>
<td></td>
<td>Point to question green question and options, “What kind of water do whale sharks like? Warm, Paper, Cold”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Ask question after reading adapted text P. 10</td>
<td>5 Second</td>
<td>Correct Independent Incorrect/Prompted</td>
</tr>
<tr>
<td></td>
<td>Point to question green question and options, “How do whale sharks move? Running, Yellow, Swimming”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Ask question after reading adapted text P. 15</td>
<td>5 Second</td>
<td>Correct Independent Incorrect/Prompted</td>
</tr>
<tr>
<td></td>
<td>Point to question green question and options, “What is this book about? Whale Sharks, Pencil, Dinosaurs”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Figure 4

**Sample Procedural Fidelity Sheet**

<table>
<thead>
<tr>
<th>Date: 3.12.20</th>
<th>Rater: SGT</th>
<th>Condition:</th>
<th>All Baseline</th>
<th>Skill One Intervention</th>
<th>Skill Two Intervention</th>
<th>Skill Three Intervention</th>
<th>All Skills Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher: Ms. Archer</td>
<td>Student with ESN: Alex</td>
<td>Number of Peers: 4</td>
<td>Session occurred in the general education classroom: Yes</td>
<td>The Student with ESN was included in the literacy center with their peers: Yes</td>
<td>The teacher read all pages of the book: Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Behavior

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage, Redirect, Reinforce</td>
</tr>
</tbody>
</table>

- **a.** Teacher drew student attention to each picture supported vocabulary/concept on pre-reading sheet before reading book and each time it is said aloud while reading pre-reading sheet.
  - 3:08-United States
  - 3:08-point to United States 1st sentence
  - 3:08-point to United States 2nd sentence
  - 3:26-Three Branches
  - 3:26-point to Three Branches 1st sentence
  - 3:26-point to Three Branches 2nd sentence
  - *All repeated again around 5:00*

- **b.** Teacher gained student attention, redirected attention, or reinforced student for attending to the book before reading adapted text (yellow text or blue repeated text line) or reinforced the student for their clear attention.
  - 7:00-p. 2-Rep Line
  - 9:18-p. 2-Adapted text: Need Govt.
  - 10:12-p. 3-Rep Line
  - 12:58-p. 3-Adapted text: Live US
  - 13:43-p. 12-Rep Line
  - 14:35-p. 12-Adapted text: 3 Branches
  - 27:12-p. 15-Adapted text: Create Govt

- **c.** The teacher gained the student attention before asking a question. (Minimum 5 opportunities)
  - *Do not count questions posed to whole group. Only record questions directed to student with ESN.*
  - 9:28-Where do they need a government?
  - 13:14-Where do you live?
  - 14:46-How many branches are there?
  - 28:20-What does the government have?
  - 29:37-What place did we read about?

**Total opportunities = # pre-reading opportunities+ # Adapted text sections + number of questions asked (minimum 5 opportunities)**

6+8+5=19

**Procedural Fidelity = # tallies/opportunities**

19/19=100%

### Task Analysis and Time Delay

<table>
<thead>
<tr>
<th>CI-Correct Independent, PC-Prompted Correct, I-Incorrect/No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Teacher asks student with ESN a question about the book. (first 5 questions in baseline or all 5 questions on TA after intervention)</td>
</tr>
<tr>
<td>- 9:29-C</td>
</tr>
<tr>
<td>b. Teacher provides 5 s before providing the controlling prompt, provides praise for a correct answer, or correction for an incorrect answer.</td>
</tr>
<tr>
<td>- 9:28</td>
</tr>
<tr>
<td>Time</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>28:20</td>
</tr>
<tr>
<td>29:37</td>
</tr>
</tbody>
</table>

**Total opportunities = 5**

Procedural Fidelity = \( \frac{\text{#tallies that overlap between a and b}}{5} \)

\( \frac{4}{5} = 80\% \)

**Data Collection**

Teacher records data on student with ESN response to questions related to the book and that recorded response matched the researcher’s recorded response.

- CI
- CI
- CI

- CI - Disagreement: I recoded a prompted response due to teacher providing a gestural cue toward the correct answer.

- CI

**Total opportunities = 5**

Procedural Fidelity = \( \frac{\text{#tallies}}{5} \)

\( \frac{4}{5} = 80\% \)
### Figure 5

**Shared Reading Skills, Operational Definitions, and Examples**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Skill Components</th>
<th>Operational Definition</th>
<th>Examples</th>
<th>Non-Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex</td>
<td>(1) Engage student with pre-reading vocabulary/concept sheet</td>
<td>Prior to reading the first page in the book, the teacher will: &lt;br&gt; (1a) Either actively direct student attention to or verbally reinforce the student for their focus on the 2 picture-supported vocabulary/concept sections before reading both sentences that support each picture. &lt;br&gt; (1b) Each time the teacher reads one of the two targeted vocabulary/concept words, they point at the supporting picture as they read the word aloud. &lt;br&gt; The number of opportunities is equal to two (picture supported vocabulary/concept words) plus the number of times those words occur in the sentences on the pre-reading sheet.</td>
<td>Alex</td>
<td>(1a) “(Name), do you see the picture of the _____? Let read about it together.” + Waits for student do bring eyes to picture/text. &lt;br&gt; While pointing to picture, “(Name) can you touch the picture of the _____ while I read about it?” &lt;br&gt; Ask student to repeat the word under the picture after you before reading a sentence about it. &lt;br&gt; (1b) Teacher points back to the picture each time the descriptor below the picture is said aloud on the pre-reading sheet.</td>
</tr>
<tr>
<td>Ben</td>
<td>Prior to reading the first page of the book the teacher will: &lt;br&gt; Either actively direct student attention to each of the three or four picture supported vocabulary/concept text sections if the student is not</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
clearly looking already, or verbally reinforce the student for their focus.

The number of opportunities of words/concepts on the pre-reading sheet and is always three or four.

definition” + Reads word for student to repeat.

While pointing to picture, “(Name) can you touch the picture of the ______ while I read the definition?”

(1b) The teacher points to a picture of ___ as they read that word in a sentence on the pre-reading sheet.

(1b) The teacher reads a sentence that contains one of the vocabulary/concept words but does not touch the picture of that word as they read it.

Cam. Prior to reading the first page of the book, the teacher will:

(1a) Gain or reinforce student’s attention to look at the pre-reading sheet before reading the first sentence that states what the book will be about.

(1b) The teacher will either actively direct student attention to or verbally reinforce the student for their focus on each of the three picture-supported vocabulary/concept sentences.

(1a) “Let’s look at this page to learn what we are going to read about before we start the book”+ Waits for student do bring eyes to picture/text.

(1b) “(Name), do you see the picture of the _____? Let read about it together.” + Waits for student do bring eyes to picture/text.

While pointing to picture, “(Name) can you touch the picture of the ______ while I read about it?”

Cam. (1a) Teacher attempts to gain student attention, but begins reading text before student has shifted attention to pre-reading sheet.

Cam. (1b) Teacher reads definition/concept and then asks student to point to picture
<table>
<thead>
<tr>
<th>(2) Gain attention before reading modified text</th>
<th>Prior to reading the first word of the repetitive text line or modified text section, the teacher will either actively direct student attention to the word/picture/text, or the teacher will verbally reinforce the student for their focus on the adapted text before beginning to read. The number of opportunities is equal to the number of repetitive text lines plus the number of modified text sections in the book.</th>
<th>Point to repetitive text line and wait for student to also point to the line before reading. Give student an opportunity to read repetitive text line to the group with the recorded switch or their voice. The teacher says “(Name), I see yellow text, that means this is important information” + waits for student eyes on book. “(Name), can you touch the picture of while we read about it?”</th>
<th>Teacher begins reading a modified text section, realizes student is looking away, gains student attention and picks up reading where they left off without starting from the beginning of the modified text section. Teacher tries to gain student attention but does not wait to confirm student is looking at book before beginning to read.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) Gain attention before questioning</td>
<td>The teacher gains student attention by explicitly stating the student’s name and saying, “I have a question. Are you ready?” and waiting for the student to look at them and say “yes”, or say “ready” The total number of opportunities for this will match the number of comprehension questions asked to the student by the teacher directly to the student with ESN. The following question types are not to be counted: Show me (picture in text); Point to the _____ in the book.; “Which picture in the book is <strong><strong>?”; Questions asked by peers; Questions that are not related to comprehension. For example, counting syllables, reading page numbers, “What is your favorite</strong></strong>?” “What color is the ____ in the picture?”</td>
<td>The teacher finishes reading a section of yellow highlighted text, pauses, and says, “Name”, I have a question. Are you ready?” and the student says “ready”, redirects eyes to book or teacher, or nods head in response. The teacher says, “I have a question. Are you ready?” and then states the question before the student has acknowledged the verbal reminder. Teacher asks question without explicitly gaining student attention.</td>
<td></td>
</tr>
<tr>
<td>Task Analysis and Time Delay</td>
<td>Teacher asks the five questions that are listed prompts on a task analysis during skill the skill two intervention phase and beyond, the teacher asks at least five comprehension question per session during the baseline phase for skill two. The number of opportunities is always five and the teacher must complete the time delay procedure correctly to receive a positive mark for each question.</td>
<td>The teacher asks a student, “What do the firefighters drop on the fire?” and this is a question listed on the task analysis.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>(1) Ask comprehension questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Utilize constant time Delay</td>
<td>Teacher provides 5 s after asking each comprehension question before providing the controlling prompt or provides immediate praise for a correct answer, or immediate correction for an incorrect answer. The number of opportunities is always five.</td>
<td>The teacher asks a student, “What do the firefighters drop on the fire? then waits five seconds before pointing to the correct answer and saying the correct answer</td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td>Teacher records data on student with ESN response to questions related to the book and that recorded response matched the researcher’s recorded response.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Figure 6

**Professional Development Procedural Fidelity Data Form**

<table>
<thead>
<tr>
<th>Date: _______ Teacher: _________</th>
<th>Training Topic:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer: _______ Rater: _________</td>
<td>☐ Engage, Redirect, Reinforce</td>
</tr>
<tr>
<td>What was the duration of the training? ____</td>
<td>☐ Skill 2</td>
</tr>
<tr>
<td>☐ Skill 3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Observed</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer announces topic of the training</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>First content slide of PowerPoint presentation contains desired outcomes of training</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Training incorporates at least one video example of each target skill</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Training includes description and images of sample materials</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Example materials or books used in training are identical to books used by the teacher in their classroom intervention.</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Trainer leads one full shared reading session using target skill with teacher playing the role of student.</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Teacher participant implements two full lesson plan incorporating training skill.</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Trainer or other person present collects procedural fidelity data of teacher implementation of two shared reading lesson.</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>Teacher achieves 80% procedural fidelity on two consecutive lessons.</td>
<td>☐ Yes ☐ No</td>
</tr>
</tbody>
</table>
Figure 7

*Digital Performance Feedback Procedural Fidelity Data Form*

Date:_________ Teacher:__________  
Rater:_____________

Teacher Completed Trainings:  
☐ Engage, Redirect, Reinforce  
☐ Task Analysis and Time Delay  
☐ Data Collection

<table>
<thead>
<tr>
<th>Email Characteristic</th>
<th>Present</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher is greeted by name</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Email begins with exactly two positive comments about implementation</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Procedural fidelity percentage is stated for skill one</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Procedural fidelity percentage is stated for skill two</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Procedural fidelity percentage is stated for skill three</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Specific missed steps are explained for skill one</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Specific missed steps are explained for skill two</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Specific missed steps are explained for skill three</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Suggestion for improving implementation are provided for each missed step for skill one</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Suggestion for improving implementation are provided for each missed step for skill two</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Suggestion for improving implementation are provided for each missed step for skill three</td>
<td>Yes No</td>
<td></td>
</tr>
<tr>
<td>Email ends with a statement of gratitude for teacher participation.</td>
<td>Yes No</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8

Social Validity Survey

Thinking about the process delivering the shared reading intervention within your inclusive, small group literacy centers, please answer the following questions:

Participant Pseudonym (What I will call you in my paper. Cannot be your real name):

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students with significant support needs can learn academic content in the general education classroom</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>This process supported (student’s) progress on their individual learning goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The shared reading intervention I provided was effective in supporting (Student’s) access to general education curriculum.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The shared reading intervention I provided was effective in supporting (Student’s) access to a typical general education class activity.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The shared reading intervention I provided was effective in supporting (Student’s) access to interaction with peers in the general education class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>(Student’s) learning needs in my class are significant enough to justify the use of adapted texts and this kind of shared reading intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The shared reading intervention negatively impacted the learning of typically developing students in my reading group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I liked this teaching the shared reading lessons.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The engagement, redirection and reinforcement strategies used in this intervention were meaningful to (Student’s) learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The time delay method used in this intervention was effective and meaningful to student learning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>The data collection embedded in the shared reading lesson is a meaningful addition to my existing data collection methods.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
The presence of the **task analysis (lesson plan)** was an integral part of my success implementing the shared reading intervention.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I will use some of the strategies or supports (book adaptations, planned questions, time-delay, data collection) to support other students with extensive support needs again in the future.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I would recommend using shared reading with adapted texts to other teachers.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

The demands on my time needed to create materials for this type of shared reading intervention are reasonable.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

I have the skills and knowledge to create the materials necessary for shared reading interventions in the future.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

The amount/duration of in-person professional development was necessary for my implementation of this intervention.

Please also circle one:

<table>
<thead>
<tr>
<th>Less would have been OK</th>
<th>The amount was just right</th>
<th>More would have been better</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The **lesson practice opportunities** within the professional development were important in my learning of the shared reading skills.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

The e-coaching emails were helpful in my implementation of the shared reading intervention.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>

Were there any unexpected, or unintended outcomes, of providing this shared reading intervention?

Other things you would like us to know:
In-Person Exit Interview Questions

Teacher Exit Interview

1. Do you think that the small group shared reading activity was beneficial to (Target student name)? If so, please explain.

2. Do you think the shared reading activity was beneficial for the rest of your students? If so, please explain.

3. Did you feel the training was helpful in supporting your use of the share reading instructional strategy?

4. Did you feel the email feedback was helpful in supporting your use of the share reading instructional strategy?

5. What were the most useful parts of this instructional strategy? For example, there was the adapted books, lesson plans, engagement strategies, planned student questions, and data collection sheet?

6. What were the least useful aspects of this teaching strategy?

7. Do you feel confident that you could make the materials necessary to continue using the shared reading teaching strategy now that this study is over?

8. Now that the study is over do you think you will continue using this shared reading strategy? What thinks will you change or keep the same?

9. Have there been any unexpected outcomes of (Student Name’s) participation in this study? (More time in your class, more peer interactions etc.)