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EVIDENCE BASED READING STRATEGIES FOR STUDENTS WITH MILD TO MODERATE DISABILITIES

A MASTER'S THESIS

SUBMITTED TO THE FACULTY

OF BETHEL UNIVERSITY

BY

MACKENZIE THOMPSON

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EVIDENCE BASED READING STRATEGIES FOR STUDENTS WITH MILD TO MODERATE DISABILITIES

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APPROVED

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Abstract

The intended purpose of this paper is to examine successful literacy strategies for students with learning disabilities and to also determine how to scaffold literacy instruction to meet the needs of all learners, whether in the general education or Special Education setting. Students with mild to moderate disabilities may require additional supports in developing their reading skills. This paper addresses how research based literacy strategies can be implemented into daily literacy instruction and how they can have a positive impact on overall student learning. The research questions that are examined throughout this paper include: What are successful literacy strategies that are used to increase the reading and writing skills of students, whether in a general education team taught setting or special education setting? What are strategies used to scaffold literacy instruction to support Special Education students in working at grade level standards?

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CHAPTER I: INTRODUCTION

Students with mild to moderate disabilities may experience difficulties in developing their reading and writing skills (Alnahdi, 2015). Students with Specific Learning Disabilities (SLD), Autism (ASD) and even Physical Disabilities/Impairment (PI) are receiving literacy instruction within resource rooms and co-taught general education classrooms. For students with specific learning disabilities in the areas of reading and writing, learning and developing at grade level standards can be challenging. A student's ability to meet these standards may be impaired by their academic, emotional or behavior performance (Alnahdi, 2015). Students with severe reading disabilities may learn to read in a whole language, mainstream classroom, as long as appropriate, explicit instruction is provided, a variety of instructional techniques are employed, and the duration of the provided services are based on the individuals' needs (Sears, 1994).

Current Societal Issues and Trends with Literacy Instruction

Throughout history, literacy instruction has looked different for students in Special Education and is ever changing. These changes may be based on student needs, instructional strategies and programs offered within the academic setting. In the twenty-first century, it can be hard to identify what strategies will most benefit students with mild to moderate disabilities. In conducting observational research throughout each of these studies, it was determined that "students with disabilities are not receiving quality reading instruction in both the general education and special education setting" (Vaughn, p. 49). Alnahdi (2015) conducted research that determined that direct

and specialized literacy instruction strategies are most effective for students; while Lundberg (2013) reported that using reciprocal and inference teaching methods have shown benefit to overall student learning. With multiple research studies available to educators, how is one to know which strategies to implement into their daily teaching and literacy instruction?

The goal of literacy instruction in today's time is to provide students with instruction in the least restrictive environment. As long as a student's abilities demonstrate that they are able to participate in the general education setting, then placing them in a co-taught classroom with literacy strategies mentioned by Wexler (2018) might be a good option for them. If students are demonstrating a need for more direct and explicit instruction to support their literacy skills, then providing them with strategies researched by Vaughn (2014) could be an alternative. Students with disabilities in reading are showing a need for smaller group instruction and more hands-on literacy strategies (Santoro, 2016).

No matter the setting where instruction is taking place, students with mild to moderate disabilities in reading have the right to access quality literacy instruction to meet their level of needs. Which instructional strategies should educators be implementing into their daily instruction to best support the needs of students with disabilities? There is data to support various reading intervention strategies, evidence based reading programs, repeated reading strategies, read aloud strategies, reading and co-teaching, as well as reading an assistive technology; which are examined throughout this literature review. Even though students with disabilities may experience difficulties

in developing their reading skills, reading is the foundation of all aspects in life, therefore giving students' the opportunity to explore and experience language in a variety of forms is essential to their growth and development.

Definitions

Specific Learning Disability

A student may experience a learning difficulty in a specific topic or content area. Some examples of a specific learning disability may include dyslexia, auditory processing disorder, ADHD and also having a discrepancy between IQ score and test scores in math and/or reading.

Reading Comprehension

When a student demonstrates reading comprehension, they are able to process the text, understand what it means and respond to the text appropriately. This may include, but is not limited to, identifying the main idea of a text, knowing who the characters and setting of a book are, being able to make an inference based on what they have read and also being able to answer detail questions by using textual evidence to support their answer.

Explicit Instruction

Explicit instruction is a teaching technique used to engage students in a more active lesson, where they are participants rather than listeners'. Explicit instruction may take place in a whole classroom, or in smaller pullout groups. The goal of using this instructional technique is to provide students with more targeted support in their learning.

Accommodation

Providing students with accommodations may look like guided notes, preferential seating, preferential seating, or even assistive technology. The purpose of providing students with accommodations is for them to access the curriculum and daily lessons by being provided with an accommodation that does not alter or modify the curriculum that they are being exposed to.

Purpose of Research

The intended purpose of this paper is to examine successful literacy strategies for students with learning disabilities and to also determine how to scaffold literacy instruction to meet the needs of all learners, whether in the general education or Special Education setting. Students have needs not just in further developing their reading comprehension skills, but also in reading fluency, decoding, vocabulary, writing, etc. These needs are a priority, especially for students in the twenty-first century as technology advances and curriculum expectations and rigor increase. Both general education and Special Education teachers need to have the appropriate tools and resources in order to best support students in developing their literacy skills. This study will explore the questions: What are successful literacy strategies that are used to increase the reading and writing skills of students, whether in a general education team taught setting or special education setting? What are strategies used to scaffold literacy instruction to support Special Education students in working at grade level standards?

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

To conduct research for this thesis, the databases searched included publications in Academic Search Premier, ERIC, Education Journals, and EBSCO MegaFILE from 1997 – 2018. My research was narrowed as I reviewed evidence-based studies from peer-reviewed journals that focused on reading instruction, specific disabilities in reading and Special Education reading strategies. Key words that were used in these searches included “reading strategies for students with disabilities”, “reading interventions”, “Special Education reading strategies/interventions”, and “reading disabilities”. The purpose of this chapter is to review the literature on reading instruction for students with disabilities in eight sections in this order: Explicit Reading Instructional Strategies; Reading Intervention Strategies; Evidence Based Reading Programs; Read-Aloud Instructional Strategies; Repeated Reading Strategies; Reading and Assistive Technology; Reading Across All Content Areas; and Reading and Co-Teaching.

Explicit Reading Instructional Strategies

This section focuses on explicit reading instructional strategies that have been used to support students in further developing specific reading skills. These skills range from reading comprehension, fluency, vocabulary to reading discussions and application skills.

Alhahdi (2015) reviewed the instructional strategies that are being used to increase the reading skills of students with intellectual disabilities. Through this study,

various methods were looked at to determine which strategies are the most effective when teaching students with intellectual disabilities.

The research group performed a “literature review of 128 studies that focused on teaching reading to individuals with severe cognitive disabilities” (Alnahdi, 2015). The studies chosen focus on the research that was performed by Browder, Ahlgrim-Delzell, Courtade, Gibbs and Flowers, which presents information about how students with developmental disabilities can obtain early literacy skills through intensive instruction, but more research is needed in order to determine if this instruction with lead to learning to read (4). Through analyzing the 128 studies, the five following things were noted: (1) most of the studies targeted vocabulary and sight words, (2) only 28% of the studies targeted fluency, (3) a third of the studies focused on picture identification, (4) less than a third of the studies focused on reading comprehension and (5) no studies used a longitudinal approach to literacy (Alnahdi, 2015).

Throughout this research review, it was made evident that direct and specialized instruction strategies were most effective in increasing the reading abilities of students with intellectual disabilities (Alnahdi, 2015). In the area of explicit instruction, there were six steps identified by the literature review performed by Rupley et al. (2015). These six steps are as follows: (1) review and check previous work, (2) present new material, (3) provide guided practice, (4) provide feedback and corrections (5) provide independent practice and (6) provide weekly and monthly reviews (Alnahdi, 2015). This meta-analysis also noted that taking the time to teach students with intellectual

disabilities these reading strategies is critical to their overall progression in the area of reading and writing. It was also found that developing a system in which students can practice and track their progress would positively impact their growth in reading. Having a system in which students are exposed to reading materials, whether vocabulary or explicit interventions, is needed in order to properly prepare students for future experiences (Alnahdi, 2015). Students with disabilities perform better when they know a routine and can follow the routine to work on specific skills, such as literacy strategies. In the Alnahdi literature review, it was stated that even though a comprehensive approach is recommended for use with students with intellectual disabilities, there were many strategies that focused on teaching one skill at a time when it comes to increasing the reading ability of students with intellectual disabilities. In conclusion, it really comes down to the academic level of the students in your class and what their needs are in the areas of reading and writing. This will heavily impact the strategies that are used within the classroom and the pace at which the teacher goes through the curriculum.

In the Roberts study, they examined evidence-based instruction for students that struggle with reading in late elementary, middle and high school. Recommendations to support these students are organized into five categories: (1) word study, (2) fluency, (3) vocabulary, (4) comprehension and (5) motivation (Roberts, 2008). The National Reading Panel identified the same five areas. Within each of these different types of literacy strategies, the instruction was tailored to meet the individual needs of each student. The study tracked the progress of the students based on the type of instruction

that they received, which showed whether or not the students reading skills increased from the intervention (Roberts, 2008). The follow information outlines the summary of the results in each of the five areas from this study.

Word Study

This study analyzed words using the meaning and structure of their parts. This strategy teaches students how to break down unknown or difficult words and relate them to smaller chunks or words that they already know (Roberts, 2008). In reviewing this strategy, it was found that students had a positive effect when measured on word reading and comprehension. In using this strategy, the standardized measures showed that the effect was .68 (95^{th} percentile) (Roberts, 2008). Even though these results show great progress, there were only 4 students that were tested using these standardized measures. This review also stated that a word study can be effective over a long period of time, but cannot stand alone in improving the reading ability of students with learning disabilities.

Fluency Instruction

Roberts stated that many students with learning disabilities struggle with reading, because they spend more time trying to understand the words they are trying to read rather than actually doing the reading. In a review of this fluency instruction with a group of older students with learning disabilities, there were no significant changes in their fluency abilities. For younger students, it was found that repeated reading strategies proved to have a positive impact on the students reading abilities

(Roberts, 2008). The main idea of using fluency instruction is to help students to identify words with automaticity, but it was recognized in the study by Roberts that explicit instruction in these areas is always best practice.

Vocabulary Instruction

Within this study, one group of students was explicitly taught a set of vocabulary words that they would be exposed to within the reading and the other group was not pre-exposed to these words. The results showed that students who are pre-taught the meanings of words, will be more successful in identifying these words within the reading which will overall increase their ability to comprehend the text (Roberts, 2008). Even though teaching explicit vocabulary instruction strategies can benefit a student in the short-term, having them read routinely, whether aloud or independently, is still the best way to expose them to a wide range of rich vocabulary.

Reading Comprehension Instruction

Throughout 12 different sample studies of implementing reading comprehension instruction, there were only two samples that showed little improvement in students reading skills (Roberts, 2008). Through these sample studies, it was identified that in order to increase the readers' comprehension, it's important for teachers to pre-teach concepts, locate headings/titles, incorporate graphic organizers into the reading lessons and connect prior knowledge to new content (Roberts, 2008). The purpose of using comprehension instruction is to assist students in making connections to the reading from what they already know. Students with learning disabilities may benefit from

identifying difficult words in a text by creating images or relating to known concepts (Roberts, 2008). It's always best practice to scaffold reading material and bring students back for review and feedback for them to track their progress and overall understanding.

The Sears study looked at the development and the implementation of meaning-based reading instruction for students with disabilities. A group of classroom teachers collaborated on developing a reading curriculum that would meet the needs of their students by tailoring instructional models for each student's individual learning level. Throughout the study, teachers looked at 3 elements of a meaning-based reading instruction, which include: assisted reading, informal assessment, and contextualized strategy instruction (Sears, 1994).

In this study, the teachers based their data from the three strategies that they implemented into their reading instruction: assisted reading, informal assessment and contextualized strategy instruction. Throughout the study, teachers identified the process that takes place before, during and after the reading instruction. They also noted when guided and independent practice of these skills was implemented and provided to the students and to what extent it impacted their abilities and learning (Sears, 1994).

Sears (1994) concluded, "students with severe reading disabilities may learn to read in a whole language, mainstream classroom, as long as appropriate, explicit instruction is provided, a variety of instructional techniques are employed, and the

duration of the provided services are based on the individuals' needs" (p. 636). Throughout this study, the teachers reported that in using assisted reading, students were more supported in learning grade level content. In utilizing a reading record, the teachers were able to track and monitor each student's progress and then individualize the instruction based on student needs (Sears, 1994). The teachers stated that, "meaning-based programs expose students to real texts, emphasize understanding as the purpose of reading, and support students as readers and learners" (p. 637). Even though this was a preliminary study, the results support that these instructional reading strategies are having a positive impact on the learning of students with disabilities.

Taylor examined teachers' perceptions about using a structure literacy curriculum that incorporates explicit instruction that involve time delay, error correction and prompting strategies (Taylor, 2010). This study also investigated which teaching strategies positively impact the learning of students with disabilities, as using standardized testing might not provide the most accurate measure of a students' understanding and ability. The research in this study was conducted in classrooms for students with severe, multiple disabilities, moderate cognitive disabilities and Autism (Taylor, 2010). This study also analyzed how motivated students were to participate in a read aloud activity in small groups and how that could possibly impact their overall understanding of the text. This study explicitly utilized the Early Literacy Skills Builder (ELSB) curriculum, which is part of the RAISE (Reading Accommodations and

Interventions for Students with Early Literacy) project to conduct their test group and data collection.

The data in this study was collected via observations and interviews with the 6 teachers that volunteered to participate in the RAISE project. In being mindful about the teachers that they chose from each of the instructional programs, the study sought to gather data that covered a wide range of academic abilities from students with developmental disabilities and how the RAISE project affected their learning (Taylor, 2010). Teachers were observed in the classroom setting, as they implemented the experimental curriculum and extensive interviews were conducted to gather data on how effective each teacher thought the curriculum was for their students. After observations and interviews were complete, the authors of this study did a comparative analysis to determine what themes or topics were common among all interviews (Taylor, 2010). Some of the common themes that were identified from reviewing the interviews included: classroom description, instructional goals, student description and teacher description.

This study concluded that the RAISE project had an impact on student learning, especially in the areas of knowledge of print, phonics and phonemic awareness and reading comprehension (Taylor, 2016). Throughout the study, teachers were asked to answer questions about how students' learning was impacted in various areas. In the area of *concepts of print*, one teacher had commented that her students were developing an understanding of how a book reads from left to right and how each letter

has a sound correspondence (p. 532). In the area of *phonics and phonemic awareness*, 3 of the 6 teachers reported that they were seeing improvement in their students' performance. These teachers noted that their students were starting to recognize the relationship between letters and their sounds and were using these skills to start reading words on their own (p.533). In the area of *sight word recognition*, four out of the six teachers identified their students as making progress with this skill. One of the teachers noted that her students enjoyed participating in the activities that were integrated into the curriculum, which lead to them being able to identify sight words on their own (p. 533). Lastly, in the area of *reading comprehension*, most of the curriculum is modified in the form of providing visuals with the reading. Some students with severe cognitive disabilities may be nonverbal, therefore the teachers documented that this curriculum provided all students in their classroom with an opportunity to demonstrate their understanding of the reading (p. 534).

All teachers that participated in this experimental curriculum shared with the researchers that their students were able to increase their knowledge of concepts of print, which according to the National Reading Panel, is a key component of reading (Taylor, 2016). One of the teachers reported that this curriculum provided her with valuable lessons and materials that she didn't have to search for and create on her own. Other teachers did note that this curriculum provided strong instruction and resources for identifying sight words and phonics but was lacking in the area of measuring a students' reading comprehension. Teachers shared that the curriculum was very

engaging, as it utilized various manipulatives for students, such as puppets, picture clues and interactive activities (Taylor, 2016). This study also addressed the importance of self-efficacy and teacher effectiveness. Through individual and panel interviews with these teachers, it was revealed that some teachers came out of this experience and test group, feeling more confident in teaching literacy skills to students with significant developmental disabilities (Taylor, 2016).

The main purpose of the Fenty study was to examine the impact that providing explicit instruction in content literacy within the elementary classrooms for students that might be at risk for experiencing difficulties in reading (Fenty, 2017). This study was specifically targeted to educate teacher candidates on how to implement these specific content literacy skills within the lessons and then show how this can benefit the overall comprehension of students that might be labeled as “at risk” students in the area of reading. This research was conducted through afterschool tutoring in all subject areas where students who struggle in reading were able to access literacy strategies to support their reading and writing development (Fenty, 2017).

The groups were thoughtfully picked for this study, as well as preplanning the assessments that would be used to measure student growth during this study. In reviewing teacher candidate interview responses and lesson plans, the study group compared responses and assessment scores to determine if there was a trend in literacy strategies that are benefitting struggling readers (Fenty, 2017). The lesson plans and assessments were used across all content areas (math, social studies, etc.), which

allowed for the study group to get a wide range of results. In viewing the pre- and post-assessment scores, all content areas increased their post-assessment scores by at least 21% by incorporating the literacy strategies into daily instruction (Fenty, 2017).

To gather quality data that targeted the impact of these literacy strategies being incorporated across all content areas to benefit struggling readers, focus groups were created to conduct interviews, lesson plans were monitored, and students were provided with meaningful questionnaires. There were three stages to the teacher candidate focus groups: (1) incorporating content and literacy instruction provides more practice in literacy, (2) planning time and ranges in student literacy skills are barriers to incorporating literacy and content instruction, (3) incorporating content and literacy instruction increases student interest and engagement (Fenty, 2017). Through each of the stages, teacher candidate would answer open-ended questions related to each of the three themes of literacy strategies and instruction, which provided the study group with quality feedback on what was working for students and what wasn't. This study also reviewed over 240 lesson plans that incorporated these literacy strategies through the lesson to best support learner needs in reading (Fenty, 2017).

In reviewing pre- and post-assessment scores, in content areas such as math, science and social studies, students "increased their post-assessment scores by at least 21%" (p. 233). Focus group feedback from the teacher candidate interviews also increased by at least 19%, stating that the strategies were proving to have a positive impact on student learning and reading skills. Lastly, in reviewing the student

questionnaire responses, “60% of students believed that the “project” helped them to become better readers and 33% of students reported that the after-school project made them more interested in writing” (p. 234).

The main purpose of the Buchnowski study was to look at current evidence-based instructional strategies that are being used in the Special Education setting and what schools and teachers can do to implement more of these strategies into their everyday lessons and instruction. This study also describes the implementation process for these research-based practices and what the finding of this research entails.

There was not a select group of students that participated in this study, but the research describes the benefits that these interventions would have on overall student learning (Buchnowski, 2006). The initial study took place over 3-day training sessions involving teachers and administrators to determine instructional strategies that would improve student learning in the Special Education setting.

Initial results from this study indicate that 76% of the instructional strategies that were implemented were most successful when used with the PBS program (Buchnowski, 2006). Teachers reported that there was more response and participation from students when the strategies were presented in this manner. Teachers also reported that having the manuals to use while implementing these strategies was helpful, as it laid out ideas for how they could use the strategies to best support student needs at the time. Overall, the instructional strategies that were implemented

throughout this study have shown to improve student achievement in the academic setting (Buchnowski, 2006).

Lykken et al. (2014) looked at the effects of using the SRA Decoding Strategies text on word recognition with a student with learning disabilities. Direct instruction strategies were used throughout this study to provide the student with meaningful lessons to support his reading skills development. This study is best suited for students that have access to a Special Education setting at some point throughout their academic day and have a learning disability in reading.

In order to gather quality data throughout this study, the SRA Decoding Strategies text, data sheets and flash cards were used (Lykken et al., 2014). The text provided the Special Education teacher with intervention resources, such as how to assist the student in further developing his letter sounds, word decoding, comprehension and fluency (Lykken et al., 2014). Before starting the SRA intervention, the researcher gathered baseline data on the student's word recognition ability, which was then used to compare final results after the 10-week study had ended. The teacher and researcher would record student responses with data sheets to determine word accuracy, fluency and overall comprehension. "The researcher and Special Education Teacher had a 95% agreement rate on the student's responses to reading questions" (p. 20).

In reviewing the data from this study, it was determined that the SRA decoding program was successful for this student. The baseline data that was collected showed

that the student was able to read 0% of the words, where after the SRA program he was able to read 72% of the words correctly (Lykken et al., 2014). In using the flash cards and various reading materials, the teacher reported that the student increased his fluency and overall confidence in his reading abilities. The SRA decoding program helped this student to increase his word recognition, reading fluency and reading comprehension skills (Lykken et al., 2014.

In summary, explicit reading instructional strategies have proven to increase student participation, have a positive impact on overall student learning and experiences, as well as increase students' knowledge base in the content area of reading. Each of these studies also had data to support the statement that providing students with a variety of instructional strategies are beneficial to a student's reading comprehension and that it exposes them to real texts. In each of these studies, students were able to increase their skills in the areas of vocabulary, fluency, reading comprehension and discussion techniques.

Reading Intervention Strategies

In this section each research study looked at various intervention strategies that are being used to support readers with disabilities. Some of the interventions that are examined in the following studies include story mapping, word studies, metacognitive reading strategies, and reciprocal/inference teaching interventions and also how to develop meaningful conversations around reading. All of these reading intervention

strategies were recommended because they focus on supporting students with disabilities in further developing their reading and comprehension skills.

The purpose the Vaughn (2014) study was to look at the interventions that are currently being used to support students with disabilities in reading and compare those to more intensive interventions that are proving to be beneficial for other students. This study used "three different data sources to support their reasoning for why students with disabilities in reading require ongoing intensive interventions, rather than having access to low level tasks in the Special Education setting" (Vaughn, 2014). The main goal of this study was to "examine appropriate instructional practices for individuals with reading disabilities" (p. 46).

This research involved various observations across both the general education and Special Education settings to determine what reading instruction best supports the needs of students with reading disabilities (Vaughn, 2014). Through various observations across both settings, a major factor that was noted was the amount of time that students with disabilities were not engaged in the reading instruction that was taking place. Observations that were made also looked at the amount of "instructional time that was spent on teaching explicit reading skills and the size of student groups" (p. 48). In order to gather data in this study, they used observational research from 1990 – 2014 to determine the amount of reading instruction that has been provided to students with Special Education services (Vaughn, 2014). These observations examined student participation in large group instruction, small group and individual instruction. It

was found that before 1990, there was more individual instruction for students with disabilities, but after 1990, classroom instruction began to change to small/whole group instructional models (Vaughn, 2014).

In reviewing the observational research that was conducted, it was determined that "students with disabilities are not receiving quality-reading instruction in both the general education and Special Education settings" (p. 49). The study also noted that the instructional group size impacts the outcome of the reading interventions that are used. Smaller group sizes had better outcomes, while the larger instructional groups showed no difference or even a decrease in skills. The main take-away from this study was to look at the interventions that are currently being used in the classroom, the size of instructional groups and the duration of the interventions themselves.

The Alturki study was conducted to determine the effectiveness of using group story mapping of English as a second language (ESL) on students with learning disabilities in reading and comprehension. "The five main areas of recording a narrative story were researched, which involve: setting, characters, problem, solution, and opinion" (p. 915).

In both the control and experimental groups, the researcher provided the students with the same non-fiction story to read. The researcher connected with the Special Education Teachers prior to picking a story, to ensure that it was at the right reading level for each student (Alturki, 2017). The researchers then took the results from the non-fiction story and created an intervention for students to go through using

group story mapping. There were two separate groups for this study, an experimental and control group. The control group was given small group reading instruction by the researcher and was also asked to read the passage aloud. After completing the short story, the researcher as the control group students five different questions to gauge their level of learning and understanding. The experimental group was given the same short story to read but introduced the group story-mapping strategy to the students (Alturki, 2017). By introducing the story-mapping strategy to the experimental group, the researcher wen through each step with the students, first through guided practice and then through independent work. After completing the story mapping activity, the experimental group of students then completed comprehension questions to demonstrate their learning and understanding. After completing the study, the researcher collaborated with the Special Education Teachers to determine another appropriate short story at each student's reading level for them to practice the story-mapping strategy on their own. The main form of gathering data from this study was through a post-text design, which determined the impact of using the story-mapping strategy with students to increase reading skills (Alturki, 2017).

The main findings of this study revealed that the story-mapping strategy had a "positive impact on students reading comprehension skills" (p. 920). From the comprehensive survey questions that the test groups were given after each short story reading, the researcher determined that students were able to remember what they read, identify whether the text was fiction or non-fiction, use prior knowledge to assist

in answering questions and also identify all characters present in the story (Alturki, 2017). The students that were in the control group that did not utilize the story-mapping strategy did not answer the comprehension questions correctly and scored a 5/10 on the comprehension questions. "The students that were in the experimental group scored a 7/10 and 10/10 on the comprehension questions; only two scores are reported as there were just two students in this study" (pg. 921). The main difference between the control group and the experimental group, is that students reported by using the story-mapping strategy, they were able to better understand the materials that they were reading.

These strategies have shown to help students improve upon their skills when asked to review, summarize, predict and make connections with their text. In reflecting upon all of these reading strategies to help students with learning disabilities to increase their reading skills, the most important thing that teachers can do at this point is to help students find a motivation to read. When students have a motivation to read, they are typically more interested in understanding the text and taking the time to use these strategies to increase their overall reading abilities (p. 67).

The Berkeley study examined the effects of various reading comprehension strategies on students with reading disabilities in 7-9th grade (Berkeley, 2011). There were six different comprehension strategies that were explicitly taught in this research which included: (1) setting a purpose, (2) previewing, (3) activating background knowledge, (4) self-questioning, (5) summarizing, and (6) strategy monitoring (p. 23).

During the research period, students were given pre-, during and post-test assessments to track data on their comprehension skills. In each assessment that was given, students were tested on the six different comprehension strategies that were presented to them. To ensure that all students were presented with the same materials, teachers and researchers read from a premade script to teach the lessons. In doing this, all lessons were consistent and gave credibility to the data that was collected (Berkeley, 2011).

In reviewing the pretest and post-test scores, “all test groups increased their post-test scores after participating in the reading comprehension strategy instruction” (p. 27). Students also indicated after participating in the study, that they felt more comfortable and confident in their reading skills. From the research findings, it has been concluded that students need to be explicitly taught comprehension strategies that they can apply to all classes in order to help them investigate and learn new content (Berkeley, 2011).

The Boardman study looked at different Collaborative Strategic Reading (CSR) strategies for implementing strategic reading strategies in a Language Arts and Science classroom for students with mild to moderate disabilities (Boardman et al., 2016). This research consisted of a “randomized control group of students that went through the CSR process” (p. 646). In each of the test groups, teachers followed the same procedures for introducing the content and vocabulary to students, as well as utilizing the same before, during and after reading strategies (Boardman, et al, 2016). Each

session was approximately 50 minutes in duration and in study I, took place during two separate lessons each week and took place for 1 day a week in study II.

In order to gather quality data that represented the study well, an *Implementation Fidelity Checklist* was used to assist the observers in determining the quality of the instruction of CSR during each session (Boardman et al., 2016). After each session, teachers would report on student engagement and total minutes that were spent during the lesson using the CSR method. Throughout the study, "in-class observations were conducted that examined student behaviors, teacher behaviors and the overall quality of instruction that was taking place" (p. 649). The quality of the teacher's instruction using the CSR strategy was rated on a scale of 1 (low) to 7 (high). During study I, there was a total of 4 formal observations that were conducted using the rating scale to determine quality of instruction and student engagement. The quality of the CSR strategy was also measured by using the *Gates-MacGinitie Reading Test,* which included pre- and post-tests to measure student achievement after each study (Boardman et al., 2016).

In reviewing both studies that were conducted using the CSR strategy, results show that the studies included quality instruction and that it was beneficial for students with mild to moderate disabilities (Boardman et al., 2016). In examining post-test scores, it was determined that "students scored higher on reading comprehension after having participated in the CSR study" (p. 654). An important aspect of the data included

that “the quality of the instruction outweighed the quantity of lessons that were provided to students” (p. 655).

Girli (2017) studied the relationship between using levels of metacognitive reading strategies with students that are identified has have a Specific Learning Disability (SLD) and their self-efficacy in comparison to their same age peers without disabilities. The Metacognitive Awareness of Reading Strategies Inventory was one form of data collection that was used in this study. “This strategy inventory checked for reliability and validity using a 5-point scale with options of (1) never, (2) rarely, (3) frequently, (4) generally and (5) always” (p. 94-95). This gave the researcher information on how useful the strategies were to the students and what they benefited from the most. The Academic Self-Efficacy Scale was also used in this study, which looked at the students’ skills, environment and quality of education (Girli et al., 2017). Once all data was collected, a software was used to compare the reading strategies, academic self-efficacy and self-respect levels of students with Specific Learning Disabilities (SLD) to that of their general education peers (Girli et al., 2017).

In reviewing the data from this study, it was reported that the effects of the metacognitive reading strategies did not have of large as an impact of students with Specific Learning Disabilities (SLD), as it did on their general education peers (Girli et al., 2017). It was determined that students with SLD had difficulties in utilizing the reading strategies that were presented, whereas the general education students already had prior knowledge on how to use the strategies and had the required skills to do so. It also

came out in the data that many students with disabilities do not have a high level of self-efficacy; therefore being confident to try new reading strategies when reading comes a challenge was not a priority for these students.

Hollenbeck studied how to involve students in meaningful conversations about the texts that they are reading in class. This study examined explicit reading instruction strategies that support students in generating their own questions from the text. This research was also aimed at making a connection between comprehension strategies and active reading (Hollenbeck, 2011).

Throughout this research study the teacher, Wendy, shared that she felt as though helping students to understand their individual goals and areas of strength and improvement greatly benefits the students' motivation in the classroom and overall success. During the classroom observations, Wendy was observed using questioning strategies to support the students reading comprehension, which could be utilized in a variety of learning environments.

Data was gathered through classroom observations, where Wendy would provide small group reading instruction for students with learning disabilities or push into general education classes to support students as needed (Hollenbeck, 2011). "Wendy utilized the "Soar to Success" instructional method that used reciprocal teaching strategies" (p. 214). During observations of Wendy's lessons in guided reading groups, it was noted that there were different stages to the questions that were presented to students throughout each lesson. For example, the following steps were

used: (1) developing questioning skills, (2) developing active reading practices and (3) meaningful conversations about texts (Hollenbeck, 2011). In the first state, developing questioning skills, the teacher encourages students to focus on their writing skills by creating a set of questions that reflects what they just read in the text. The goal is for students to activate their background knowledge and expand upon the material that they have read to further their comprehension skills (Hollenbeck, 2011). The teacher would provide students with follow-up questions as needed to support students in adding more detail to their questions. In the second stage of this instructional strategy, developing active reading practices, the teacher has students actively participate in the reading by asking and answering questions about events that are occurring within the text (Hollenbeck, 2011). By participating in an open conversation about the text, students are able to further their understanding about the characters, setting, plot, etc. During these conversations, the teacher also implements various reading strategies and has students identify which strategy was just used to assist them in answering their own questions about the text. In the last stage, meaningful conversations about texts, the goal is to support students in facilitating and participating in discussions about the book, students' thoughts and take-away (Hollenbeck, 2011).

This study did not include statistical or numerical data as a form of results, as this research gathered data through classroom observations and teacher discussions (Hollenbeck, 2011). In reviewing the benefits that these instructional strategies had on the students in Wendy's class, it was determined that having students actively

participate in the reading process is beneficial. Students will be more successful if they are taught explicit strategies to use before, during and after reading (Hollenbeck, 2011). Wendy reported that her students, and any student with a learning disability, are more successful when they are encouraged to have conversations about the materials that they are reading and when they participate in hands-on activities that utilize comprehension strategies they have been taught.

The main purpose of the Lundberg study was to examine the effects that reciprocal teaching (RT) and inference teaching (IT) had on students with learning disabilities in the areas of reading. Within the reciprocal teaching method, students were presented with four different reading intervention strategies, where the inference teaching provided them with strategies on answering inference questions. The goal of this study was to gather data on how to support students with disabilities in becoming more active and successful participants in the classroom.

In order to gather quality data in this study, students were given pre- and post-tests to determine the effectiveness of both the reciprocal and inference teaching strategies. The inference teaching was used as the controlled strategy in order to measure the effects of the reciprocal teaching strategies in each test group (Lundberg, 2013). In order to meet student accommodations and conduct meaningful lessons, students were divided into small groups of 3-4 students. Students participated in the study by receiving direct instruction in small group settings for eight weeks in two weekly 30-minute sessions (Lundberg, 2013). When examining the inference teaching

strategies, students were asked to answer three types of questions about what they have read. The reciprocal teaching method exposed students to four different strategies, which included: prediction, clarification, question generation, and summarization (Lundberg, 2013). Teachers leading the small group sessions took a text and broke it down into smaller parts for the students to read during each lesson. After each reading, students were to utilize one of the strategies that were introduced during the lesson. The researcher would then collect data from the pre- and post-tests to determine which of the strategies was proving to be most beneficial (Lundberg, 2013).

Overall, after participating in the eight-week study, students' post-test scores had improved from their pre-test scores (Lundberg, 2013). Researchers also had the reading sessions recorded to collect data on students' reading abilities, fluency, comprehension, etc. In reviewing the audio recordings, students that participated in the reciprocal teaching group showed slight improvement with their skills. The reciprocal teaching strategy proved to be more student centered, where as the inference teaching strategies resulted in the teaching talking more than the students (Lundberg, 2013). In reviewing all data that was collected throughout this study, it was determined that "even if there were not major improvements in the reading skills of students with learning disabilities by using the reciprocal teaching method, it provided students with more opportunities to discuss the materials that they are reading and give them confidence in their work" (p. 98).

Kourea (2018) examined three different domains of culturally responsive reading instruction for students with learning disabilities, which included instructional delivery, environmental support and curriculum context. The goal of this study was to help to inform teachers of how they can meet the needs of all students in the classes, whether a general education or Special Education academic setting. The study wanted to gather as much data as possible on different ways to teach reading in a culturally responsive classroom, giving teachers appropriate and useful resources to best support their students. “Skills/strategies that were examined in this study include: reading, writing, explicit instruction, peer tutoring, opportunities to respond and how to gather performance feedback” (p. 158). This study also analyzed the environment in which students were receiving instruction, such a technological and instructional supports.

In order to gather quality data in this study, the researchers examined culturally responsive teaching strategies in the following areas: explicit instruction, small group instruction, cooperative learning groups, and peer tutoring. When breaking apart each instructional strategy, “the explicit instruction focused on teacher modeling and providing examples during the lesson that students can relate to” (p. 157). The goal through explicit instruction is that students will participate in guided practice with their teacher and then eventually be able to manipulate the strategy in various scenarios as needed. When looking at small group instruction, this study recommended that students be grouped based on ability level and only be in groups of three to six students, allowing for more one-one-on support. It was found that students receiving

small group reading instruction performed better that students remaining in large classroom settings (Kourea, 2018). This type of teaching is also considered to be tier teaching, as it is part of the RTI framework that many schools have begun to implement as a school-wide instructional support system. The next instructional strategy that was reviewed was cooperative learning groups. The purpose of these groups is to have students work together to accomplish an assigned task, where they need to collaborate and learn the required tasks to solve the problem (Kourea, 2018). For students from CLD (culturally and linguistically diverse) backgrounds, they are able to practice their oral language skills in a small group setting to build their confidence and overall skill set. Lastly, this research reviewed the benefits of peer tutoring. Students with higher-level abilities are paired up with students of lower abilities and are then asked to work on an assigned activity together (Kourea, 2018). The goal is for the students to receive positive and corrective feedback from one another in a safe and encouraging environment, where students with lower level skills can increase their knowledge base in that content area. This study determined that “peer tutoring could be an effective strategy for all students, especially those with learning disabilities in reading” (p. 158). Teachers were able to gauge the level of student participation, skills and overall performance by integrating performance feedback and various opportunities to respond in each of these instructional strategies. The purpose of performance feedback is to provide students with timely and positive comments on their reading skills to help the students understand what they are doing well with and what they might be able to improve upon. By incorporating multiple opportunities to respond in each lesson, students with

different learning styles are able to participate in the lesson and show the teacher what they know (Kourea, 2018).

In conclusion, this study emphasized the importance and benefits of utilizing strategies outlined within the RTI framework (Kourea, 2018). The study reported that students placed into smaller groups with teacher modeling and real-life examples were more successful in further developing their reading skills than other students (Kourea, 2018). This study also determined that the RTI framework is relevant to the needs of students from CLD backgrounds that have learning disabilities.

In summary, the Kourea, Lundberg, Hollenbeck, Girli, Boardman, Berkeley, Roberts and Alturki studies all provided meaningful research in the area of reading intervention strategies. Some of the research studies found that the size of the instructional groups could have an impact on student success in reading and also how the instruction is delivered to the students. These studies also found that providing students with various opportunities to respond throughout instruction, scaffolding the interventions and utilizing pre- and post-tests were beneficial to overall student success. Even in using the reciprocal and inference teaching interventions in the Lundberg study, students were able to make gains in making predictions, clarification, questioning and summarization. Overall, each study determined that students were able to make an improvement in their overall reading skills by participating in these reading interventions.

Evidence Based Reading Programs

This section reviews three different reading program that use a variety of strategies to support readers with specific learning disabilities. The main goal in each of these reading programs is to provide students with the tools necessary to further develop their reading skills. Even though each of the following reading programs focus on different steps to best support students, their target audience is students with disabilities and understanding how to provide them with access to grade level materials.

A study from What Works Clearinghouse looked at the effective of the Reading Mastery Program that is used for elementary age students to increase their reading performance. “This program is used as a supplemental resource to other reading programs or as a stand-alone reading program for students with disabilities” (p. 1).

There was a control group in the study and a comparison group, which received a more “fast track” approach to the program and longer sessions. Pre- and post-tests were used to determine the effectiveness of each program and how the duration of the lesson impacted student learning and overall success. Various pre- and post-tests were given to both test groups throughout the Reading Mastery Program. To measure growth in alphabetics, Letter-Word Identification and Word Attack subtests from the Woodcock-Johnson were utilized. Students’ reading comprehension was measured by using the Passage Comprehension subtest from the Woodcock-Johnson, which was combined with the Letter-Word Identification subtest to obtain a broad reading score for each student. In order to gather this quality data, teachers were required to have

training in using the Woodcock-Johnson, as well as being trained in the Reading Mastery Program (WWC, 2012).

In reviewing data from the Reading Mastery Program, a reported "30 students were shown to have increased their alphabetic skills after participating in the program" (p. 5). In the study, there was no data that demonstrated a significant increase in students reading comprehension. Overall, the evidence that was provided to support the effectiveness of the Reading Mastery Program was small in comparison to other research that is out there.

The Jackson study examined the RIDD (Read, Imagine, Decide and Do) strategy to support students with mild learning disabilities to develop reading strategies. (Jackson, 1997). The goal of this study was to look at how to support students with learning disabilities in utilizing strategies to engage them in reading when behaviors occur and improving their overall reading comprehension. This study also looked to improve the self-esteem and self-efficacy for students with learning disabilities in the academic setting (Jackson, 1997).

Students were instructed by using the four steps of the RIDD strategy. Step 1 involves reading the passage from the first capital letter to the last end mark without stopping. Step 2 has the students imagine or make a mental picture of what they have read. Step 3 has students decide what to do and finally step 4 requires the students to do the work (Jackson, 1997). "Each of these steps is designed to support students in

becoming more efficient and focused readers, as behaviors have been shown to impact a student's ability to read in the classroom" (p. 240).

Data on this study was collected over a three-week period in which concluded that students increased their mean score by using the RIDD strategy from 71.5 to 85.4 (Jackson, 1997). "Teachers noted that students were more motivated to participate in this study when they were in the resource room setting, rather than their regular classroom setting" (p. 246). Even though this strategy proved to be successful for these students, the results were inconclusive, as the study did not last an entire grading period, but only three weeks.

The purpose of the Kumar study was to look at the effects of the PASS Reading Enhancement program (PREP) in reading and spelling deficits of students with reading disabilities. To gather quality data during this study, the researcher used the Cognitive Assessment System (CAS) to assess the cognitive functions of the brain for the student participants (Kumar et al., 2015). "The CAS consists of four subtests that include planning, attention, simultaneous and successive which make up the program of the PASS reading enhancement program that was examined in this study" (p. 408). In addition to the CAS, students were also given pre- and post-tests to examine the impact the program had on their spelling and reading abilities.

The findings of this study provide evidence that the PREP program was successful in helping students with learning disabilities to increase their spelling and reading skills (Kumar et al., 2015). There was significant growth in the experimental

group when comparing students' pre- and post-test scores. The results also indicated that introducing each set of skills and strategies to the students was proven to be more successful in small group settings (Kumar et al., 2015).

In summary, the Reading Mastery Program, the Pass Reading Enhancement Program and the RIDD strategy all had data to support that students increased their reading skills. When comparing pre- and post-test scores, students were able to make gains in the areas of reading comprehension, vocabulary, spelling and discussion techniques. Each of these reading programs was implemented into a small Special Education classroom setting. Even though it was recommended that not all of these reading programs be used as a stand-alone curriculum, they did prove to increase overall reading skills.

Read-Aloud Instructional Strategies

In this section the Corcoran/Davis and Santoro research studies tested the effect that read-alouds have on students with disabilities in the content area of reading. The following research looks at readers' theater programs and daily read-aloud strategies that can be incorporated into any lesson that could potentially increase a students reading fluency, intonation and overall reading confidence. This research also discusses how to locate appropriate texts to use for read-aloud activities and how grade level and "just right levels" will be different based on each student's individual needs.

Corcoran and Davis researched the effectiveness of using a readers' theater fluency program with students who have learning disabilities in reading. The goal of this

study was to help students to improve their overall reading comprehension, as well as expression and intonation by participating in a readers' theater program. The participants in this study were preselected and were given surveys, as well as pre- and post-tests to complete after participating in the readers' theater program. The purpose of the pre- and post-tests were to measure the confidence in reading and overall fluency (number of words read correctly per minute) to determine whether or not the readers' theater was having a positive impact on student's reading skills (Corcoran, Davis, 2005).

Data was collected through pre- and post-fluency scores as well as a survey that questioned students about their attitude towards reading. "To get the most accurate data, the students were place into three separate readers' theater groups based on their reading abilities" (p. 107). Being that students were placed into groups based on ability, the teachers were able to make accommodations and modifications at their appropriate reading levels. Each play that was read in the groups was practiced for two weeks and each group performed three different plays over the eight-week session (Corcoran, Davis, 2005).

The survey that was given to students asked them a series of questions where they were to identify their comfort level with reading before and after participating in the readers' theater program. After completing the eight-week session, student's post-survey results went up by 16%. Before participating in the readers' theater program 81% of the students shared that they felt comfortable with reading, but after the program "95% of the students felt better about their reading abilities" (p. 109). 90% of the

participants stated that they would participate in the readers' theater program again if given the opportunity to continue to work on increasing their reading skills. Over the eight-week readers' theater program from January to April, the participants' oral fluency skills were tested. As an entire group, students were able to "increase their words read correctly per minute by 17 words" (p. 110). The research in this study shows that students did increase their overall reading skills through pre- and post-fluency tests, as well as participating in the readers' theater program.

The main purpose of the Santoro study was to advocate the use for read-alouds in supporting struggling readers with accessing and comprehending complex, informational text. Throughout this article, various recommendations are made as to how to select appropriate books for struggling readers and pre-, during and post-reading activities that can build upon a students' comprehension. There was not a specific set of data that was collected from this study, but rather recommendations on what study would be useful when implemented into reading curriculum to best support the needs of struggling readers or students with learning disabilities (Santoro, 2016). This research also looked at the system for how these reading strategies are presented to the students (large group vs. small group instruction).

In order to successfully implement these reading strategies into daily instruction, the article created an instructional framework that explicitly describes what to do with each strategy and when to use it. There are instructional models for using KWL charts, creating reading focused questions based on the informational text, practicing academic

language, sentence stems, word meanings, etc. (Santoro, 2016). Throughout this study, the students were divided into small groups to receive reading instruction. It was determined that students experienced more success in learning the reading strategies when they were placed into smaller pullout groups.

In determining whether or not using read-alouds is beneficial for students with reading disabilities, the article determined a few instructional models that are critical to the success of this model. Teachers should identify multiple texts across the curriculums that are of various complexities and lengths. Teachers should provide students with explicit instruction in the area of comprehension to support students in understanding how to break apart a text to fully comprehend what they are reading. Teachers should also assist students in participating in academic discussions based around the informational texts that they are reading. The more that students are able to discuss the text and make connections, the more likely it is that they will increase their comprehension. Lastly, teachers should also advocate for vocabulary use within the instructional framework. Exposing students to complex vocabulary will support them as they move through the grade levels and work with more challenging vocabulary (Santoro, 2016). Overall, it was reported "using small group read-alouds for students with reading disabilities has proven to be successful" (p. 291). As stated in the article, "Reading informational text provides students with the language of thought, foundational vocabulary that can be connected to other words, and technical content or subject-area understanding that frames how readers see themselves and the world."

In summary, both the Corcoran/Davis and Santoro research studies concluded that the read-aloud strategies benefited the students overall reading skills. In being exposed to challenging vocabulary, appropriate texts and explicit instruction in the area of reading, students were able to improve their reading scores by participating in the read-aloud strategies. By providing students with the opportunity to be exposed to challenging texts and vocabulary, students feel more comfortable in participating in read-aloud activities, as they know how previous exposure to grade level materials/content. Overall, read-alouds and reader's theater can have a positive impact on a student's reading fluency, intonation, comprehension and also their reading confidence.

Repeated Reading Instructional Strategies

In this section the research inspects how repeated reading strategies can impact student's overall reading skills. Fitzpatrick and What Works Clearinghouse both present data on how to utilize repeated reading instructional strategies in the classroom, which includes pre-, during and post-reading interventions. The goal of both of these studies was to support students in developing their reading comprehension skills and reducing the number of errors they made on the second day read.

Fitzpatrick examined the effect that one and two-day reads in the Reading Mastery program have on students with learning disabilities. Before beginning the Reading Mastery Program, the student read three lessons on one day to get a baseline. During each day of the six-week program, the student was provided with a reading passage. The student would read through the vocabulary words for the day, where the

researcher recorded number of words read correctly and incorrectly. The goal of a second day read was to decrease the number of errors that the student had while reading by 50% (Fitzpatrick et al., 2004). Both the researcher and the instructional assistant would record the number of errors made while reading on both day one and day two to ensure that the data was accurate and concise. “If the student met the goal of decreasing his number of errors by 50% on the second day of reading, he earned 10-minutes of computer time” (p. 59).

In reviewing data from this study, the overall results show that “there was a decrease in the number of errors made from the first day read to the second day read” (p. 59). In examining the baseline data from day one, the student made an average of 23.7 errors within a 468-word passage (Fitzpatrick et al., 2004). For first day readings, the student “made an average of 45.7 errors and decreased his errors on the second day read to 18.2” (p. 59). The student did consistently make numerous errors with word attack skills, which the researcher connected to frequent absences from the program. Overall, the data shows that there is a positive impact on first and second day read strategies for students with learning disabilities.

What Works Clearinghouse completed research that examined how to implement repeated reading strategies for students with disabilities in the area of reading. “What Works Clearinghouse created two group design standards using repeated reading that encompasses reading comprehension, alphabetics, reading fluency, and general reading achievement” (p. 1). The goal of using repeated reading

strategies is that is will help students to build automaticity, improving their overall reading fluency and comprehension skills (WWC, 2014).

In order to gather quality data, students were split into either the repeated reading group or the comparison group. In the comparison group, students only read through their assigned story once and were then asked to answer comprehension questions related to the main idea of the passage. The two groups were tested in in four different domains to see if their skills were improved by repeated reading. These four domains are as follows: reading comprehension, alphabetics, reading fluency, and general reading achievement (WWC, 2014).

In all four domains that were tested (reading comprehension, alphabetics, reading fluency and general reading achievement), "there were no significant changes in pre and post-tests, even after using the repeated reading strategy as an intervention" (p. 7). This could be a result of having small test groups with little data. In order to compare pre- and post-test results, student scores were compared to the reading fluency questions on the AIMSWEB reading system. This could also be due to the fact that the intervention group only had 4 days of training to learn the repeated reading program; therefore having a more extensive training over a longer period of time might increase the outcome.

In summary, when comparing both of these research studies, the Fitzpatrick study showed a decrease in errors made on the second read whereas the What Works Clearinghouse strategies did not seem to have an exponential impact on student's

reading. Both studies did report that when the repeated reading strategies are used consistently and appropriately, that students may experience an increase in their reading fluency and overall comprehension skills. Both studies also reported that having adequate time to teach students repeated reading skills is required if results are to be seen.

Reading and Assistive Technology

This section examines the use of assistive technology within literacy instruction to support students with disabilities. Each study dives into the topics of web-based tools, text-to-speech and audiobooks, which could all be used to further support students with disabilities in developing literacy skills.

The main purpose of the Flanagan study was to look at the effectiveness of utilizing assistive technology within literacy instruction for students with disabilities. This study also analyzed the training that special educators need in order to successfully provide access to this technology for students in their classroom. Throughout this study, various assistive technology devices were used to determine the effectiveness it has on literacy instruction and also the barriers that both teachers and students may encounter.

This research was based on the experiences and feedback of special education teachers that are or are not currently using assistive technology to aid their literacy instruction techniques. Once the schools were randomly selected, principals of each school received an email including a 20-question survey for special education teachers

to complete (Flanagan, 2013). In this survey, teachers were asked to identify how assistive technology is used in their classrooms, and also what benefits and limitations they see firsthand with this technology when incorporating it into their literacy instruction. Both low tech and high tech assistive technology devices were listed in the survey, where teachers were given rating scales to rank each device and its' effectiveness when used with students with disabilities (Flanagan, 2013). Teachers were also asked to list which students are accessing assistive technology in their classes, the effect it has on their learning and what other information they need to acquire in order to best utilize this technology in their instruction.

The results of this study concluded that the teachers in this study were incorporating low and high assistive technology less than once per week in their classes (Flanagan, 2013). Teachers that were using this technology in their classes reported that it was effective in the areas of reading and writing and that's where they are commonly using this technology. The teachers identified that the assistive technology was most effective when students understood how to use it, if they understood how it would help them and how it relates to the current literacy activity (Flanagan, 2013). Teachers reported that when the assistive technology was not explained clearly, they did not notice a significant effect on the student's performance in the area of literacy. Common low-tech resources that were being used in literacy classes include: audio books, spellcheck, flashcards and speech-to-text. In reviewing the surveys from teachers, the study concluded that various factors encouraged teachers to utilize this technology in

their literacy instruction. Some of the benefits identified are as follows: increases learning, assists students individually, flexibility in using with more than one student, easy to integrate into classroom instruction and easily customizable for each students' needs (Flanagan, 2013).

In the Jozwik and Douglas study, they looked at the affects of integrating technology tool into a reading comprehension intervention for English Language students with learning disabilities. The students "were given explicit instruction over a 30-minute period five times per week" (p. 8). Students rotated through four different stations each day where they focused on developing their reading comprehension skills. The students received their instruction from a Special Education teacher that was bilingual, which allowed for students to receive language supports as needed. During the study, "the participants utilized e-texts, web-based tools, instructional level texts, and mentor texts" (p. 9).

To gather quality data throughout this study, the Keene's rubric for monitoring comprehension was used to gauge the level of reading comprehension for each student. The study lasted for 12-weeks in which pre- and post-reading data was collected to determine the effect that the intervention had on students' reading comprehension. "The school district had a reading specialist administer the BAS 3-9 days prior to the first intervention sessions and then a second time as student exited each phase of the intervention" (p. 10). Before reading, students were asked to set a reading goal for themselves, ask questions to activate prior-knowledge, make a prediction and target

one vocabulary word from the Frayer model. During reading students would read and use sticky notes to make connections within the text and participate in active discussion questions. After reading, each student would respond to comprehension questions and create questions of their own based on the reading (Jozwick et al., 2017). During each instructional session, there were four different components that were used which included: (a) explicit strategy instruction, (b) a mnemonic, (c) web-based tools, and (d) peer collaboration (Jozwick et al., 2017).

When looking at student scores from the rubrics that were used, all students increased their skills towards the end of the 12-week intervention (Jozwick et al., 2017). Students made gains in their ability to make text-to-text connections, written messages and their ability to answer comprehension questions. Each student was also able to increase his or her independent reading level after completing the sessions through this reading intervention (Jozwick et al., 2017). After reviewing data and sharing their experiences, all four students identified that they have more confidence in their reading skills and showed an interest to continue reading, based on observations by the researcher.

The Browder research looked at the effects that an electronic story-mapping intervention had on students with Autism Spectrum Disorder (ASD). Participants in this study identified story elements, utilized narrative texts and story maps to increase their overall reading comprehension throughout this research study. “The environment in which students received the intervention was controlled, allowing the researcher to

focus on the effects of the intervention itself" (Browder et al., 2017). Students received 20-30 minutes of explicit instruction during their resource class each day, which allows for them to practice using the story-mapping strategy and increase their reading comprehension skills.

In order to gather quality data throughout the study, the researcher had participants go through a series of probes to gather a baseline (Browder et al., 2017). Students were individually scored based on their performance within each portion of the reading intervention. Throughout the intervention, students were exposed to six story elements that included: character, setting, problem, solution, outcome and main idea (Browder et al., 2017). Students were scored based on correct responses and demonstrated their understanding by successfully completing a story map that accurately reflected the story. Each probe that was presented to the students had them "identify the story element definitions, participate in active listening of the story, complete a story map and answer comprehension questions" (p. 247). To ensure the reliability of the interventions, two observers participated in the study that recorded and formally observed each class session. These observations were taken into consideration when analyzing data and results from the participants.

Data for this study showed that students with ASD were all able to increase their reading comprehension skills by participating in this reading intervention (Browder et al., 2017). Data also indicated that students had an increase in their reading comprehension when using the electronic story mapping activities after each reading, as

well as being prompted less. The researcher also addressed the needs that students with Autism may have as they continue to develop their reading comprehension skills. The study discussed needing to continue to adapt materials and make them accessible for students with Autism and how that might look different across various academic settings.

The Bone research looked at text-to-speech options that would benefit struggling readers as they progress through their academic years. Many students that receive Special Education services have assistive technology outlined within their Individualized Education Plan (IEP). “Teachers that provide services to students with learning disabilities work to accommodate these reading needs by providing students with assistive technology tools such as Speak Selection, Aloud!, Natural Reader, Dream Readers and Read and Write for Google.” (Bone, 2017).

Bone recommended that schools purchase chrome books for students to utilize throughout their day, as the chrome book provides students with these various assistive technology resources. “Students spend more of their time working to decode the words they are reading, which leaves little time and mental effort to devote to comprehension.” (p. 48). This research reports that using text-to-speech to decode words will leave more room in working memory for construction meaning as the student reads the text (Bone, 2017). Students have reported that in using text-to-speech features on their chrome books, they are reeling less fatigued and more motivated to work on reading materials presented in their classes. In using these applications,

students can be more independent in the classroom setting and access general education curriculum with ease.

In summary, this study reported that teachers feel more prepared in supporting students with reading accommodations that are outlined in their IEP's and that students are experiencing success with reaching their reading goals. By using the iPad or chrome book apps and features, students don't have to leave the general education setting to take tests involving reading in a setting where a trained adult reads aloud to them. The two students that were observed in the classroom to conduct research for this study shared that their overall confidence and skills in reading improved after starting to use assistive technology in their classes.

In summary, the Flanagan, Bone, Jozwick/Douglas and Browder studies, it was determined that assistive technology can be beneficial to students with disabilities in their core literacy classes, when they know how to access and use those resources. In the Jozwick and Douglas research, students reported to be more confident with their reading skills, which resulted in more students independently reading in their classes. In the Flanagan study, teachers had reported that they noticed a change in their students' willingness to participate in activities when they had access to assistive technology. More students were getting into the content independently, as they didn't need to wait for adult assistance once having the technology resources at their fingertips. Browder determined that electronic story mapping could have a positive impact on overall student learning and success in the literacy setting.

Reading Across All Content Areas

This section examines different reading strategies that can be used to support students with disabilities in a variety of content areas and not just in their Language Arts classes. Through this research, it has been reported that students struggle with reading across all content areas. The purpose of these two research articles is to bring awareness as to how both Special Education and general education teachers and incorporate various reading strategies within their daily instruction to support reading comprehension in more than just a student's reading class.

The main purpose of the Israel study was to determine how to explicitly teacher and embed reading strategies into STEM inquiries. Throughout this study, the role of Special Education Teachers was examined to determine how they would be used to assist general education teachers when using STEM content in the classroom (Israel et al., 2013). This study also examined the connections between STEM, reading and content literacy and how teachers can better support students with disabilities in these areas (Israel et al., 2013).

This study looked at the needs of students with disabilities in the area of reading and determined that "less than 5% of students with a reading disability go into a STEM career" (p. 22). This study broke down the process of planning STEM lessons that explicitly incorporate reading strategies to support struggling students. Throughout the study, recommendations for before, during and after reading are made to support

teachers in better understanding how to integrate reading strategies and skills into their STEM classes.

As this study was not tested on a actual group of students and teachers, there is not solid data to review. It is hard to know whether or not this study would help students to increase their reading skills in the STEM classroom. Important points that were addressed throughout this study included: including hands-on learning experiences for students to demonstrate their knowledge, incorporate technology into the lessons, utilize collaborative reading strategies (reciprocal teaching, and interactive reading guides), and to also promote collaborative planning and teaching (Israel et al., 2013). In order to best support students with a reading disability in the STEM classroom, Israel states that, “there needs to be a better generalization of instructional strategies across all content areas, more effective communication about students’ needs and various opportunities to develop and implement authentic STEM opportunities”.

The O’Connor research looked at how to support students in a history class to increase their ability to identify the main idea, create, compare, and contrast paragraphs, and identify cause and effect relationships within the text. Due to the reading demands in middle school, this study sought to look at reading strategies that would benefit students with and without learning disabilities in a history class.

This study took place over three weeks during the students’ history classes. Within the history lessons to increase reading comprehension, students were exposed to “word study, academic vocabulary, main idea, compare/contrast and cause and

effect relations" (p. 178). During the study, teachers were observed, and the quality of each lesson was determined by using a checklist. This allowed the researchers to determine what strategies that were implemented were proving to be successful and how the lessons could be altered to best support student needs (O'Connor et al., 2017).

In reviewing results from this study, it was determined that middle school students that have reading difficulties or disabilities can make gains in their skills by applying the various reading comprehension strategies included in the three-week intervention (O'Connor et al., 2017). It was also noted that students were applying these reading strategies across all content areas, not just in the history class where the intervention was taking place. Throughout each cycle of this reading intervention, new reading skills were introduced to the students that would build upon the previous lessons content. In doing this, students were supported in retaining information they have learned while learning to apply that prior knowledge to new scenarios. The success of this study may be due to the set-up of the intervention itself and how the researchers introduced new strategies each week for students to use, as they deemed appropriate and necessary. Overall, in comparing the test group of students with reading disabilities to that of students without disabilities, all participants increased their overall reading comprehension skills after participating in the reading intervention (O'Connor et al., 2017).

In summary, both the Israel and O'Connor studies reported that students experienced success in utilizing various reading strategies in both a STEM and History

class. Students may experience more success in carrying reading strategies over to other content areas if the strategies are more generalized and easier for them to access/adapt. New reading strategies were introduced through each of the studies, therefore it can be difficult to determine what the success rate of just one specific reading strategy would be in a content area other than Language Arts.

Reading and Co-Teaching

This section examines reading strategies that are implemented within a co-taught classroom where both the general education and Special Education teacher share the responsibilities and providing reading instruction to students of all abilities.

In the Swicegood study, the main purpose was to look at the practices that are currently being used for children's literature in the inclusive co-teaching classroom for students with mild to moderate special needs. This study also looked at the professional roles of both the general education and special education teacher in the classroom and the instruction strategies they implemented to best support the students in the areas of language and literacy.

This research was based on focus groups that the co-teachers put together based on student needs and grade level literature standards. Within the groups, the teachers would identify the types of support that were needed based on the students' individual IEP goals and the literacy strategy being implemented for that particular lesson. "The three focus students would participate in group rotations and would have

additional supports put in place to support their needs in the areas of reading and writing" (p. 73). The teachers based their data from the following strategies: conspicuous strategies, procedural facilitators, and mediated scaffolding (Swicegood et al., 2015). The teachers formed three different test groups that provided varying levels of supports: low, medium and high. Based on their findings, the teachers were able to use this information to determine what high-quality literacy strategies can be used to positively impact the overall success of students with mild to moderate disabilities within a co-taught Language Arts classroom.

The results of this study concluded, "using high quality literature promotes an increased awareness and understanding of disabilities while fostering self-reflection and self-determination for students." (p. 78). Mrs. Brown and Mrs. Frazier (the co-teachers) identified that having continuous assessment will help to guide their instruction and planning for all students. These guided reading groups and co-teaching literacy strategies proved that students would become better readers and writers when they are exposed to these skills daily. One of the more successful reading strategies was one proposed by Englert and Mariage (1991), which included pre-reading, during reading and after reading engagement. This provided students in each focus group with a task to focus on before, during and after reading that would support their overall comprehension and understanding.

In comparison to the Swicegood research, Wexler examined various co-teaching models for general education and Special Education teaching pairs when determining

best reading instructional strategies for students with learning disabilities (Wexler et al., 2018). This study also reviewed which co-teaching models and the frequency of teaching from each teacher that was needed in order to make reading lessons beneficial for all students. Researchers also determined which types of text were used in the co-taught classrooms and how that impacted the literacy instruction for both general education and Special Education students in the same academic environment.

The researchers in this study observed 16 different co-taught ELA classes in the 6-8th grade over a 5-month period where they examined co-teaching models that were being used, how instructional time was spent and what percentage of the lesson the CAT and SET were leading class instruction. The main goal of this research was to determine which co-teaching models have the highest impact on students learning and success and how to structure class lessons to incorporate meaningful instructional reading strategies (Wexler et al., 2018).

After completing a total of 2,000 observation minutes in co-taught ELA classes, the research proposed that CATs and SETs should have an equal share of presenting instructional strategies to the whole class (Wexler et al., 2018). During observations researchers took note that the SETs would take on a more “supportive” role in the classroom as they met needs of students with an IEP, but did not lead whole class lessons as often as the CAT. The research recommended, “teachers working together should utilize the parallel co-teaching model to support a wider range of students in the classroom” (p. 397). The CAT is more responsible for planning the content, whereas the

SET can be used as a targeted instruction specialist to work with the CAT in creating small group lessons to target a specific skill set that students need in order to further their reading skills. Overall, students should feel equally supported by both teachers present in the classroom, therefore having time for collaboration and planning are essential in making a co-taught classroom cohesive and successful.

In summary, both Swicegood and Wexler's research proved that the co-teaching model is beneficial to students of all abilities. Data supports that students that participated in the co-taught model were able to increase their overall reading skills and increase their confidence when in their Language Arts classes. Students are also able to receive more direct support in the co-taught environment, as there are more teachers available to provide quality instruction and reading interventions as needed.

CHAPTER III: DISCUSSION AND SUMMARY

Summary of Literature

The research conducted in this study revolves around literacy strategies for students with mild to moderate disabilities. The literature was separated into eight different categories that fall under the category of literacy instruction, which includes: explicit reading instructional strategies, reading intervention strategies, read-aloud strategies, repeated reading instructional strategies, evidence based reading programs, reading and assistive technology, reading across all content areas and also reading and co-teaching.

Each of these studies addressed the research questions of (1) What are successful literacy strategies that are used to increase the reading and writing skills of students, whether in a general education team taught setting or special education setting? and (2) What are strategies used to scaffold literacy instruction to support Special Education students in working at grade level standards? These studies were separated into two main categories of successful literacy strategies and scaffolded literacy instruction. To further explore literacy strategies, these categories were broken down into four elements each. To better understand successful literacy strategies, the following sections were discussed: Explicit Reading Strategies (Alnahdi et al., 2015; Buchnowski, 2006; Fenty et al., 2017; Lykken et al., 2014; Roberts et al., 2008, Sears et al., 1994; Taylor et al., 2010), Reading Intervention Strategies (Alturki, 2017; Berkeley, 2011; Boardman et al., 2016; Hollenbeck et al., 2011; Girli et al., 2017; Kourea et al., 2018; Lundberg et al., 2013), Repeated Reading Instructional Strategies (Fitzpatrick et

al., 2004; WWC, 20140 and Read-Aloud Instructional Strategies (Corcoran et al., 2015; Santoro et al., 2016). To better understand how to scaffold literacy instruction, the following sections were discussed: Evidence Based Reading Programs (Jackson et al., 1997; Kumar et al., 2015; WWC, 2012), Reading Across All Content Areas (Israel et al., 2013; O'Connor et al., 2017), Reading and Co-Teaching (Swicegood et al., 2015; Wexler et al., 2018) and Reading and Assistive Technology (Bone et al., 2017; Browder et al., 2017; Flanagan et al., 2013; Jozwick et al., 2017).

In reviewing the research questions that shaped the data presented in this paper, each of the mentioned categories above contributed to the overall understanding about best practices out there for literacy instruction in Special Education. In answering the first research question, some successful literacy strategies for students with mild to moderate disabilities include providing students with explicit instruction in the areas of fluency, vocabulary, word study and comprehension, as well as exposing students to repeated reading and read-aloud strategies. Research from Roberts (2008) reported that students have shown an increase in their overall literacy skills when provided with explicit instruction in these areas. Sears (1994) also discussed the benefits of providing students with small group, explicit instruction on literacy strategies that can be applied to more than just a Language Arts class, as students with disabilities may experience difficulties across a variety of content areas. The Kourea (2018), Lundberg (2013), Hollenbeck (2011), Girli (2017), Boardman (2016), Berkeley (2011), Roberts (2008) and Alturki (2017) studies all provided meaningful research in the area of reading interventions strategies and found that the size of the instructional

groups could have an impact on student success in reading, as well as looking at the quality of the instruction that is delivered to the students.

In answering the second research question, teachers both in the general education and Special Education setting, can scaffold literacy instruction by providing students with a wide range of literature at their instructional levels, graphic organizers, and access to assistive technology apps and programs. Research from Flanagan (2013) reported that students that are provided with a variety of low and high tech options in the classroom are more likely to feel confident in the classroom and are also more likely to experience success with grade level content. Both the Israel (2013) and O'Connor (2017) studies reported that students experienced success in utilizing various reading strategies in both a STEM and History class. These studies also reported that students may experience more success in applying reading strategies to other content areas if the strategies are more generalized and easier for them to access and adapt.

Limitations of Research

To conduct research for this thesis, the database searched included publications in Academic Search Premier, ERIC, Education Journals, and EBSCO MegaFile from 1997-2018. Key words that were used in these searches included "reading strategies for students with disabilities", "reading interventions", "Special Education reading strategies/interventions", and "reading disabilities". This research was limited to students in the age range of pre-K - 18 years old, still in school either through the public school system or private charter schools. This research was also limited, as data was examined and collected only on successful literacy strategies that have been proven to

support students with mild to moderate learning disabilities. The strategies that are outlined in the paper meet the needs of students in a federal setting I or II, which limits the population of students that these strategies may benefit. These search limitations were thoughtfully placed upon this research, as data relatable to students in grades K-12 was sought after.

These studies had unintended limitations when conducting research, such as literacy strategies used with each age group, sample size of each data collection method and the overall availability of research within the scope of literacy strategies. Sample size of students that participated in each study varied, but many were small in number, which could de-value the research that is presented in this thesis. Locating evidence based literacy strategies for students with mild to moderate learning disabilities also proved to be quite challenging. The variety of literacy strategies that were represented in each study was also limited, as many students compared very similar strategies that have proven to be beneficial for students in further developing their overall reading skills.

Implications for Future Research

In reviewing the limitations of the research that is represented in this paper, there are multiple implications for future research that should be considered. In order to better determine how strategies impact overall student learning, having research on data collection of each of these strategies would be beneficial. Many of the research studies noted how to implement these strategies into the classroom, but did not mention data collection methods that can be used to track student success. Having a

larger sample size, greater than two students, would also benefit future studies to determine the effect that these strategies may have on a whole class size. Would these strategies be beneficial in a larger setting, or are they most impactful in settings of three to five students?

Having a cross examination of these strategies within the Special Education setting, general education setting and a co-taught classroom environment would also provide data that would benefit future implications of this research. Knowing which setting each literacy strategy has been proven to be most beneficial would give students the most support in experiencing success with their reading and writing skills. In conclusion, being able to have access to data that accurately represents the benefits of using various literacy strategies across a variety of academic settings would benefit the instructors to better meet the reading goals and would benefit the students in receiving a quality education in the appropriate academic setting for their individual needs.

Implications for Professional Application

In reviewing the research that is presented in Chapter II of this paper, I believe that there needs to be more of an emphasis on the literacy instruction that is provided to students with mild to moderate disabilities. The educational system is progressing, but is behind the trend of education in the twenty-first century. School districts need to provide more inclusive learning opportunities for students with learning disabilities, where they are able to participate in academic environments that are reflective of their individual learning needs/levels. Within the academic setting that students are placed

in, they should be provided with a variety of literacy instructional strategies that meet the needs outlined in their Individualized Education Plans (IEP).

A large portion of students with an IEP and who receive Special Education services, have low reading skills and abilities. Reading is the foundation of almost all content areas, therefore providing students with strategies that can be utilized across all content areas is essential to their overall academic experience and success. All teachers should be made aware of the resources and tools that are available to support students in all settings within the academic environment to better meet their reading and writing needs. This research impacts all educators, as we service students of all ability levels whom all deserve to receive an education that is appropriate to their learning level and needs.

This research directly impacts me as a Special Education teacher, because I provide a majority of the students within my school with literacy instruction, whether in the Special Education setting or in a co-taught classroom. My role is to support teachers in scaffolding grade level content and curriculum, allowing students on an IEP to access the work and also to create reading curriculum that encompasses the reading skills and strategies that students need to work on to meet IEP goals. Understanding which literacy strategies have been proven to benefit the reading skills of students with mild to moderate disabilities is one requirement of my daily job. I need to be able to determine which strategies to incorporate within my daily instruction and which strategies I can provide to general education teachers as resources for them to integrate into their general education curriculum.

In reviewing the various strategies that I reviewed for the purpose of this paper, I personally would like to further explore the six steps mentioned in the research conducted by Alnahdi (2015). Alnadhi reported that direct and explicit instruction has been proven to support students in further developing their overall literacy skills. As a Special Education literacy teacher, I find that the six steps that were recommended can have a huge impact on student learning. I want to try to implement the following six steps into my daily literacy instruction to better support my students with mild to moderate disabilities: (1) review and check previous work, (2) present new material, (3) provide guided practice, (4) provide feedback and corrections, (5) provide independent practice, and (6) provide weekly and monthly reviews.

Being able to support students in further developing their reading skills is a blessing, but certainly not an easy task. Having access to more professional development and trainings on best practices in literacy instruction for students with learning disabilities would be a good next step in continuing to conduct research on this topic. In order for me to be good at my job and to be able to support, implement and write IEP goals that demonstrate evidence based literacy strategies, I need to have access to trainings and professional research opportunities. Being able to collaborate with team members on the procedures for implementing these strategies into daily instruction and tracking student progress is vital. I look forward to being able to resume my research on instructional literacy strategies for students with mild to moderate disabilities and use that research to provide my students with positive reading experiences both in the academic setting and at home.

Conclusion

Research has shown that students with mild to moderate disabilities may experience difficulties in developing their reading and writing skills (Alnahdi, 2015). Research also offers various instructional literacy strategies that can benefit struggling readers in being able to access reading materials by providing accommodations such as assistive technology, smaller classroom groupings and re-reading strategies. There is not just one "go to" literacy strategy that will profit all students with reading disabilities, but there are options for adjusting daily lessons to meet individual needs of the students within the classroom setting. In reviewing research that is presented in this paper, some researchers report that explicit reading instructional strategies have proven to increase student participation, have a positive impact on overall student learning and experiences, as well as increase students' knowledge base in reading (Lykken et al., 2017; Buchnowski et al., 2006; Fenty, 2017; Taylor, 2016; Sears, 1994).

Some research supports that teachers should look for opportunities to provide students with more opportunities to be exposed to challenging texts and vocabulary (Corcoran et al., 2015; Santoro et al., 2016). It's time for literacy instruction to take the front seat in student's education, as reading highly impacts student success across a variety of content areas. Students have the right to be provided with quality literacy practices that will confirm a students' progress, motivation and achievement in meeting reading goals outlined in their Individualized Education Plan (IEP) and that will provide them with the foundational skills needed in order for them to be life long learners.

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