

**WHAT RESEARCH SHOWS ABOUT  
LITERACY INSTRUCTIONAL STRATEGIES  
SPECIFICALLY FOR STUDENTS  
WITH SPECIFIC LEARNING DISABILITIES**

by

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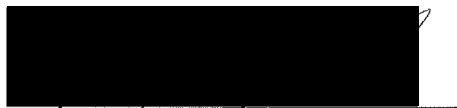
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CERTIFICATION OF THESIS/PROJECT CAPSTONE WORK

We, the undersigned, certify that this project entitled Literacy Instructional Strategies Specifically for Students with Specific Learning Disabilities, by Jennifer Braunscheidel, Candidate for the Degree of Master of Science in Education, Literacy Birth-Grade 12, is acceptable in form and content and demonstrates a satisfactory knowledge of the field covered by this project.



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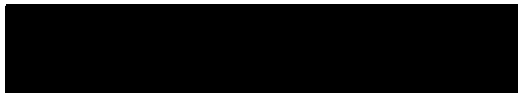


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## ABSTRACT

Within general education and special education classrooms are students with specific learning disabilities, and within these classrooms are general education and special education teachers who may or may not have specific training in how to teach reading to those students. This situation leads to the question of what literacy instructional strategies general education and special education teachers can use for literacy instruction with students who have specific disabilities related to literacy. The most appropriate way to answer this research question was with a research synthesis. The exhaustive literature review and subsequent research synthesis for this study produced three findings. The first is that research has determined five literacy instructional strategies that produce positive impact on students with specific learning disabilities: direct instruction with individuals, direct instruction in groups, repeated oral reading, technology integration, and simultaneous use of multiple strategies. The second is that the most useful and versatile instructional strategies are the three that produce positive results for all three age ranges of elementary, middle school, and adolescents: repeated oral reading which impacts oral fluency, direct instruction with an individual, and simultaneous use of multiple strategies, both of which impact reading comprehension. The third finding is that the main literacy skills to be targeted by literacy instruction for students with specific learning disabilities at the middle school and adolescent age range appears to be reading comprehension. These findings then form the basis of professional development for teachers that takes the form of an online interactive module. (245 words)

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## **Chapter 1: Introduction**

### **Statement of the Problem**

Within the general and special education classroom settings, there are students with “specific learning disabilities” (USED-OSEP, 2006). General education and special education teachers typically do not receive specific training in teaching reading and writing; there is no state or federal law requiring them to do so. Consequently, they are neither literacy specialists nor teachers trained to provide differentiated literacy instruction to students with specific learning disabilities or even with specific reading disabilities. This situation leads a reading specialist to pose the question, what are literacy instructional strategies that general education and special education teachers can use for literacy instruction with students who have specific disabilities related to literacy? The most appropriate way to answer this question is to conduct a literature review, synthesize the findings and present the results to educators through professional development.

### **Background**

My own experience working with students with specific learning disabilities has taught me much about the instructional and support needs of students with specific learning disabilities, and especially their literacy needs. In my experiences, I worked with three students with specific learning disabilities who were placed in the general education classroom setting. All three were identified by their general education teacher as “struggling readers.” All three struggled with a

variety of literacy elements including but not limited to comprehension, identifying the main idea, decoding words, and vocabulary development. All three received support outside of the general education classroom. Academic Intervention Services (AIS) were provided by a reading specialist; the focus of their AIS was on reading below grade level passages and reinforcing the literacy skills learned from the previous years. To support these students in their general education classroom, I provided a variety of literacy-based instructional strategies, which were appropriate for grade level use and for implementing in their reading across the content areas. Providing these students with those instructional resources supported their general education classroom instruction and appeared to have a positive effect on their literacy growth. Those experiences lead me to this research question.

### **Terminology**

To provide clarification and a better understanding of the topic to the reader, several terms used in this research study are defined below. The first key term used frequently throughout this study is “specific learning disability.” The Individuals with Disabilities Education Act (IDEA) of 2004 defines a “specific learning disability” as

a disorder in one or more of the basic psychological processes involved in understanding or in using languages, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. (USED-OSEP, 2006, p. 30)

This term “specific learning disability” now replaces the previously used terms of “dyslexia” and “dysgraphia.” For this thesis, the term “specific learning disability” will be used to refer to the disorder in the basic psychological processes of reading and writing. In addition, students who have this “specific learning disability” will be interchangeably referred as “struggling readers,” and “students with a learning disability.”

Another key term is “Response to Intervention,” often abbreviated as RTI. As defined by the Center on Response to Intervention (2013), RTI is “a multi-level prevention system” that “integrates assessment and intervention” in order “to maximize student achievement and reduce behavior problems” (para. 1). The National Center for Learning Disabilities (NCLD) defines “Response to Intervention” as “a multi-tier approach to the early identification and support of students with learning and behavioral needs” (p. 1). For this thesis, the definition of the term “Response to Intervention” will be a combination of the previous two that closely addresses the research question: a multi-level prevention system that integrates assessment and intervention for the early identification and support of students with learning and behavioral needs.

Still another key term used throughout this thesis is “instructional strategies.” A “strategy” is “a careful plan or method for achieving a particular goal usually over a long period of time” (Merriam-Webster, 2014). “Instruction” refers to “the action or process of teaching” (Merriam-Webster, 2014) or specifically, the actions and activities a teacher performs in an effort to teach students. Therefore in this thesis the phrase “instructional strategies” will refer to any approaches, activities or methods a teacher or educator may use to teach a student. Instructional strategies are distinct from “learning strategies” which will refer to the actions or activities of students in the process of learning.

## **Theoretical Framework**

The field of theories that connects instructional strategies to the teaching of struggling readers is theories of the reading process. These theories include, among others, Rumelhart's theory of reading processors, Adam's theory of interactive reading, and Rosenblatt's theory of transactive reading (Kucer, 2010). All of these interact in what Kucer calls a "literacy event" (Kucer, 2010, p. 5) where a reader regardless of ability interacts with a text to construct meaning.

## **Rationale**

The New York State Education Department (NYSED) "requires all districts and schools receiving Title 1 funds to meet state 'adequate yearly progress' (AYP) goals for their total student populations and for specified demographic subgroups, including . . . students with disabilities" (NYSED, 2000, para. 1). Part of the measurement of adequate yearly progress is reading and writing scores from state standardized tests. State requirements are for all students, including students with specific learning disabilities, to be "proficient" or "working towards proficiency" (NYSED, 2000, p. 2) in grade level reading. These government regulations for monitoring student progress through standardized test scores provide a rationale for why the question of identifying literacy instructional strategies for use by general and special education teachers is an important one to be researched. Further rationale for this proposed study comes from the field of literacy. Researchers, leaders and experts within the field of Literacy annually identify trends of what is and is not a "hot topic" (Cassidy & Grote-Garcia, 2014) in the field of literacy. In the most recent survey (Cassidy & Grote-Garcia, 2014), *early intervention (K-3)*,



*Response to Intervention (RTI)* and *struggling readers (grade 4 and above)* are three topics ranked as “not hot” but “should be “hot” (p. 2). Given the close connection between these “hot topics” and the government regulations for “all” students to show yearly progress, the two provide support for the importance of researching the question of reading strategies that general and special education teachers can use for literacy instruction with students who have specific learning disabilities. Adding to that the apparent lack of specific training in literacy instruction for students with disabilities which general education teachers and special education teachers appear to have, this topic appears to be very timely and worthwhile to study.

## Chapter 2: Literature Review

To address appropriately the research question of determining instructional strategies suitable for use by general and special education teachers for literacy instruction with students who have specific learning disabilities, a review and synthesis of the literature is the most suitable method. For this thesis, an exhaustive literature review was conducted. The major education databases including Academic Search Complete, Education Source and ERIC were searched. Because of the many terms related to this research question, most of those terms were used as keywords in the searches: *instructional strategies, literacy instruction, struggling readers, specific learning disabilities, Dyslexia*. The research question itself studies indicates three major areas for grouping the studies collected for this research. The first is those studies that examine literacy instructional strategies specifically intended for elementary school age (grades K-5) students with specific learning disabilities; the second grouping of this review is those studies with a similar focus but for middle school age (grades 6-8) students. The third group is those studies examining literacy instructional strategies for adolescents and adults with specific learning disabilities.

### **With Elementary School Students in Kindergarten to Grade Six**

The search for studies into literacy instructional strategies for use with elementary school age students with specific learning disabilities has uncovered several studies. The following studies are arranged according to the specific literacy skill or area the instructional strategy is targeting. The instructional strategy of peer assisted reading may be used to target the literacy area of

“critical beginning reading skills” (Rafdal, McMaster, McConnell, Fuchs, & Fuchs, 2011, p. 309) in kindergarten students with specific learning disabilities. Rafdal, et al. (2011) conducted a study with “89 kindergartners with individualized education programs (IEPs)” (p. 299). Participants formed three groups: a control group of 21 students, and two groups of 34 students each who were taught with the “Kindergarten Peer-Assisted Learning Strategy (KPALS)” (p. 304). The reading skills of all students were initially assessed using “a battery of beginning reading measures” (p. 306). The experimental groups then received instruction with “KPALS four times each week for 18 weeks” (p. 304); students were placed in “pairs of higher- and lower- performing reader” (p. 304). The instruction time consisted of “sound play and decoding” (p. 304) activities and strategies where the “students took a turn being coach and reader” (p. 304). Specific beginning reading skills addressed by the KPALS instruction were “rhyming, isolating first sounds, isolating ending sounds, blending, and segmenting” (p. 304). At the conclusion of 18 weeks, the reading skills of all students were again assessed with a battery of measures. Comparison of the “pre-treatment and post-treatment” (p. 306) results show that as a result of receiving KPALS instruction, those participants “reliably outperformed controls” (p. 309) as well as demonstrated “increasing initial alphabetic principal and decoding skills for students with disabilities” (p. 311). Overall, results show that the literacy instructional strategy of peer mediation to teach students with disabilities beginning reading skills produces positive results.

The instructional strategy of repeated reading may be used to target the literacy area of critical reading skills. Martens and Jong (2008) explored repeated reading strategies for grades 4 and 5 students with specific learning disabilities. Their participants were 64 fourth and fifth grade students; of these, 36 formed two groups of 18 students who were “normally achieving”

(p. 44) in reading and writing. The third group had 28 students with a specific learning disability whose “reading lag was at least 15 months” (p. 43). The study lasted four days, and each group received the same type of individual instruction, focusing on re-reading strategy to increase fluency of the students’ oral reading and decrease their response time of unrecognized words. A comparative analysis of pre and post-test data shows that within every group, “overall response times had decreased from pre-test to post-test” (p. 48). The results of this study indicate that the repeated reading strategy not only improved the ability to read orally for all students but also decreased their response time when recognizing a word. Therefore this study shows that repeated reading strategies are appropriate literacy instructional strategies to support students with specific learning disabilities at the fourth and fifth grade levels.

Another study with fifth graders and an instructional strategy targeting critical reading skills, specifically comprehension, is by Rouse, Alber-Morgan, Cullen, and Sawyer (2014). They studied two fifth grade students with “learning disabilities” (p. 119). The purpose of this study was to determine if the instructional strategy of “teaching self-questioning” was effective in developing reading comprehension skills in students identified as having a specific learning disability. Participants received direct instruction where researchers employed the self-questioning instructional strategy: “provided with reading passages with four prompts to write a self-generated question and answer” (p. 120), during several “30-minute one-on-one sessions” (p. 119). As a result of receiving literacy instruction, the participants’ “scores increased to 90% and 85% respectively” (p. 121). The researchers feel that the “positive results of this intervention... may be attributed to learning a strategy that directly focuses on comprehension monitoring” (p. 122). Overall, results show that the literacy instructional strategy of self-questioning, in this case

specifically for reading comprehension, to teach students with disabilities in fifth grade produces positive results.

The instructional strategy of story mapping may also be used to target the literacy area of reading comprehension of expository texts. Stagliano and Boon (2009) explored story mapping strategies for grade 4 students with specific learning disabilities. Their participants were “3 fourth-grade students with learning disabilities” (p. 35). The purpose of this study was to determine if story mapping strategies supported reading comprehension skills. The study involved direct instruction in which the participants were “taught to complete a story map while reading expository text passages” (p. 35), and then answer “multiple-choice questions and one short answer question” (p. 40). Results were attained by a collection of probes and assessments “conducted across 24 sessions” (p. 47). Results indicate all participants mastered the instructional strategy of story mapping: “all three participants were able to correctly identify whom or what the story was about and the time or place... with 100% accuracy during the intervention” (p. 50). In addition, the effectiveness of the instructional strategy of story mapping is evident because results show all participants demonstrated a percentage increase for answering reading comprehension questions correctly for both intervention and post intervention phases. Therefore, using the graphic organizer of story mapping appears to be an effective instructional tool for grade 4 students with specific disabilities.

The instructional strategy of integrating technology may be used to target the literacy area of reading comprehension. Chen (2010) explored “online reading strategies” (p. 79) for grade 5 and 6 students with specific learning disabilities. The participants in this study were 58 fifth and sixth grade students; all participants were identified as “students with learning disabilities (LD)” (p. 91). The purpose of this study was to determine if online reading strategies

supported “comprehension processes used with electronic print texts” (p. 84). The researcher employed both whole group and independent instruction “in computer labs, libraries, or quiet rooms with internet access” (p. 92). In order to “investigate students’ internet reading comprehension abilities and strategies” (p. 91), participants completed a questionnaire, an “individual online reading activity” (p. 91), and “individual online search-engine tasks” (p. 91). Quantitative data were collected in forms of “correct answers of comprehension questions” (p. 92) and qualitative data from “verbal responses, non-verbal behaviours from all of the interview questions” (p. 92). The results show that participants not only “preferred to use the internet” (p. 93) when completing reading comprehension activities, but also utilized the “online during-reading strategies” (p. 98) to answer comprehension questions. Therefore this study provides evidence that integrating technology is an appropriate literacy instructional strategy to support students with specific learning disabilities at the fifth and sixth grade levels.

Chai, Vail, and Ayres (2015) also examined the instructional strategy of integrating technology. The participants in their study were three students in kindergarten and grade 2 with “Individualized Education Program (IEP) goals related to improvement of PA [Phonological Awareness] skills” (p. 269). The purpose of their study was to determine the effectiveness of “using an iPad application to teach young children with developmental delays to receptively identify initial phonemes” (p. 268). The study involved “intervention sessions” (p. 269) which were “conducted in a 1:1 instructional arrangement” (p. 270) where participants learned phonological awareness strategies while navigating various iPad applications. Results were attained by continuous assessment of participants through “probes” (p. 273), which was then analyzed to determine “the percentage of correct responses of receptive identification of initial target phonemes” (p. 274). These results show that “all students demonstrated an increase in

level and an accelerating trend after introduction of intervention” (p. 276). Furthermore, an increase of skill development in phonological awareness supports the effectiveness of integrating technology, specifically iPad applications, for early elementary students with a specific learning disability.

Instead of just one type of instructional strategy, Wise, Sevick, Morris, Lovett, and Wolf (2007) examined multiple strategies and literacy areas appropriate for students with specific learning disabilities. The participants in this study were 279 students in second and third grade who “met research criteria for a reading disability” (p. 1093) and were “referred by their teachers for difficulties in learning to read” (p. 1099). The purpose of this study was to determine which literacy instructional strategies were effective in developing literacy-related skills in students identified as having a specific learning disability. The study involved several teaching sessions in which researchers employed a variety of literacy instructional strategies including pre-reading activities, word identification, sound and symbol identification, and “segmenting both phonologically and syllabically” (p. 1093). Results were attained by repeated assessment of “pre-reading skills” (p. 1093) and “word identification skills” (p. 1093) to then provide a correlation between linguistic skills and reading achievement through statistical analysis. The results show that “both receptive and expressive vocabulary knowledge related to pre-reading skills” (p. 1105), thus indicating that instructional strategies specifically focusing on vocabulary development are appropriate for second and third grade students with a reading disability. In addition, including a variety of literacy instructional strategies not only increased oral language skills but also “related to reading achievement” (p. 1107) in students with specific learning disabilities.

Another study with second graders and multiple literacy instructional strategies is by Cohen and Brady (2011). They studied five second grade students with reading disabilities. Over a period of 21 days, these participants received reading intervention with literacy instructional strategies focusing on word decoding and phonics instruction using children's literature: the literature "provided a story context to learning while the code-based activities provided explicit instruction of the rules and conventions of regular vowel use" (p. 89). Specifically, the instructional strategy was to provide direct instruction in order to teach the participants to use the reading strategy of vowel pattern recognition. As a result of receiving literacy instruction, the participants' "reading words in isolation" score increased by 43% and "reading words in context" (p. 91) score increased by 32%. Results from this study also indicate that there was an "increase in decoding accuracy for training words, both in isolation and in context" (p. 107). Overall, results show that the literacy instructional strategy of direct instruction, in this case specifically of vowel pattern recognition, to teach students with disabilities in second grade to decode words produces positive results.

Begeny, Mitchell, Whitehouse, Harris Samuels, and Stage (2011) also examined multiple strategies and literacy areas appropriate for second graders. The participants in this study were 60 students in second grade who were identified as having "a possible learning disability in reading, students with reading difficulties, or students at risk for reading difficulties" (p. 124). Over a period of six months, these participants received reading intervention with literacy instructional strategies focusing on "eight evidence based fluency-building instructional strategies" (p. 122). The study involved several teaching sessions in which researchers employed several literacy instructional strategies including "repeated reading, modeling, phrase-drill error correction, verbal cueing [fluency and comprehension]...goal-setting, performance feedback,



and a motivational/reward system” (p. 126). Results were attained by “progress tracking” of “students’ reading performance” (p. 122) and through a comparison “from pre-test to post-test” (p. 127). As a result of receiving literacy instruction, the participants demonstrated an increase in oral reading fluency ability with a “change score [a percentage increase] on each reading outcome measure” (p. 127). The results show that integrating a variety of literacy instructional strategies “appears to be a promising program for educators who need to improve students’ reading fluency” (p. 129) in second grade students with specific learning disabilities.

Guzel-Ozmen (2011) examined more than one literacy instructional strategy appropriate for students with specific learning disabilities in third and fourth grades. The participants in this study were four students in grades 3 and 4 identified as having “reading difficulties” and a “slow reading rate” (p. 1070). The purpose of this study was to determine if providing “performance feedback (PF)” (p. 1070) during the use of two instructional strategies, “repeated reading (RR)” and “listening passage preview (LPP)” (p. 1070), supported oral reading skills. The study involved direct instruction in which the researcher employed the same literacy cycle for each participant. Participants began with a baseline receiving no instruction, then transitioned to receiving LPP and RR, followed by RR and PF, concluding with an instruction utilizing all three strategies: LPP, RR, and PF. During the repeated readings, students read a passage three times, their “words read correct per minute (WRCM)” (p. 1071) were recorded and graphed. The graphs were then compared to determine a change in WRCM, as well as any patterns among the four participants’ results. The results indicate that participants increased their oral reading rate and WRCM when utilizing the LPP, RR, and PF strategies. Therefore, incorporating performance feedback, repeated reading strategies and listening passage preview strategies

appears to be an appropriate literacy instructional strategy for students in grades 3 and 4 with specific learning disabilities.

Newby, Caldwell, and Recht (2001) also examined the instructional strategy of incorporating more than one literacy instructional strategy at a time for students with specific learning disabilities. The participants in this study were seven students ages 8 to 10 who have “Dysphonetic dyslexia, Dyseidetic dyslexia” (p. 374). Dysphonetic and Dyseidetic dyslexia are identified by Newby et al. (2001) as specific learning disabilities and explicitly defined as “a disorder characterized by extreme difficulty in learning to read despite normal intelligence” (p. 373). The purpose of this study was to determine if word recognition and grammar strategies were effective in developing comprehension skills in students during literacy instruction. The study involved direct instruction in which the researchers employed literacy instructional strategies focusing on word recognition and grammar. Results were attained by collecting the “outcome measures . . . taken at the end of each session following the word recognition skills component of the lesson” (p. 376). The results show a “qualitative increase” (p. 377) in the students’ responses after completing a reading: “results provide initial evidence that children with dyslexia can benefit from strategy instruction to increase their recall of the qualitatively important ideas from reading passages to statistically and clinically significant higher levels” (p. 378). An increase in the quality of student responses supports the effectiveness of incorporating word recognition and grammar strategies during literacy instruction for students ages 8 to 10 years with a specific learning disability.

**With Middle School Students Grades Six to Eight**

The research studies in this section specifically examine the use of an instructional strategy to further develop a specific literacy area in students in middle school grades 6 to 9 with specific learning disabilities. Bhat, Griffin, and Sindelar (2003) conducted a study with 40 middle school students with specific learning disabilities and the literacy instructional strategy of phonological awareness. Participants formed “two equivalent groups” (p. 77); the groups alternated receiving instruction focusing on phonological awareness. To determine if phonological awareness instruction supported the students’ word recognition skills, both groups received the same type of “direct instruction” (p. 77). The study lasted four weeks, during which “the instructor modeled the correct response and provided feedback as the students practiced the particular skill” (p. 77). A comparative analysis of pre, mid, and post-test data shows that “the post-test [score] was significantly greater than the pre and mid-test” (p. 78). The results of this study indicate that middle school students with specific learning disabilities not only “improved their word identification skills over time” (p. 78) but were successful when implementing phonological awareness strategies to improve word recognition skills. Therefore this study shows that phonological awareness strategies are appropriate literacy instructional strategies to support students with specific learning disabilities in the middle school grades.

The instructional strategy of spelling patterns may be used to target the literacy area of reading comprehension skills. Berninger, Lee, Abbott, and Breznitz (2013) explored spelling strategies for middle school students. The participants in this study were 24 students in grades 4 through 9 with specific learning disabilities. Over a period of five months, these participants received reading intervention with literacy instructional strategies focusing on spelling patterns

and phonological decoding, during an after school “reading-writing workshop” (p. 8). The purpose of this study was to determine if instructional strategies focusing on spelling would be effective in developing reading comprehension skills in students. At the conclusion of the workshop, participants’ spelling and decoding skill was measured by a post assessment. Data show that as a result of receiving literacy instruction, “both treatment groups A and B improved significantly from pre-test to post-test on dictated real world spellings and phonological decoding rate” (p. 12). Furthermore, providing spelling-based instruction and strategies incorporating real world spelling and decoding appears to benefit middle school students with specific learning disabilities by “improving [their] silent reading but also supporting new understanding” (p. 18).

Instead of just one type of instructional strategy, Allinder, Dunse, Brunken, and Obermiller-Krolikowski (2001) examined multiple strategies and literacy areas appropriate for students with specific learning disabilities. The participants in this study were 50 students in grade 7; of these, 15 students “had been identified as having a disability” (p. 49). Participants formed three groups: a control, a “fluency strategy group” (p. 50), and a “no-strategy group” (p. 50). Each group received “direct instruction” (p. 51) focusing on comprehension, phonetic skill, and oral reading development. Results were attained by qualitative observations, “each class was observed twice during the intervention” (p. 52), and by numerical comparison of post-testing between the “fluency strategy group” (p. 52) and the “no-strategy group” (p. 52). As a result of receiving literacy instruction, all “students performed significantly better on the comprehension test” (p. 52). Results from this study indicate that “students who had used a specific oral reading fluency strategy performed significantly better” (p. 52). Overall, results show that fluency instructional strategies aimed at developing students’ comprehension, phonetic skills, and oral reading do produce positive results. Furthermore this study shows that fluency strategies are

appropriate instructional strategies to support middle school students with specific learning disabilities.

Fitzgerald, Miller, Higgins, Pierce, and Tandy (2012) also examined more than one literacy instructional strategy appropriate for students with specific learning disabilities. The participants in this study were five students in grades 5 to 8 with an “instructional reading level at least two years below their grade level” (p. 35). The purpose of this study was to determine if online instruction focusing on word identification and decoding strategies would increase comprehension skills and “improve reading decoding skills” (p. 36). The study involved “explicit instruction” (p. 36) in which researchers employed online instruction where participants learned decoding reading strategies focusing on prefixes, suffixes, word identification, oral reading, and comprehension. Results were attained by continuous assessment of participants through “probes” (p. 40) and “comprehension questions” (p. 40); in addition “the participant emailed the divided words, sound files, and comprehension questions back to the special education facilitator for scoring and ongoing monitoring of progress” (p. 40). The results show that “all five participants improved their Oral Reading performance after receiving preliminary strategy instruction” (p. 41) and that “all five participants increased performance level” (p. 44). Furthermore, an increase of skill development in comprehension supports the effectiveness of incorporating word identification and decoding strategies during literacy instruction for middle school students with a specific learning disability.

**With Adolescent Students and Adults**

The search for studies into literacy instructional strategies for use with adolescent and adult students with specific learning disabilities has uncovered several studies. The following studies are arranged according to the specific literacy skill or area the instructional strategy is targeting. To target the literacy area of reading comprehension in adolescent students with specific learning disabilities, Stetter and Hughes (2011) conducted a study to determine the impact of using the instructional strategy of technology integration. Participants were nine students ages 14 to 15 who were identified as “having a learning disability in the area of reading” (p. 89) and who received either special education services or additional reading support. Participants formed three groups: a “baseline” (p. 95) group, a “delayed intervention” (p. 95) group, and an “intervention” (p. 95) group. The purpose of this study was to determine if incorporating computer based activities within literacy instruction supported the development of reading comprehension skills. Results were attained by a comparative analysis of pre and post test data after all students received a set period of instruction. The results indicate an “improvement in their reading comprehension” (p. 95): “two out of three students in each intervention group and all students in the baseline group showed improvement” (p. 96). Therefore this study demonstrates “effective” (p. 98) use of incorporating computer based activities during reading instruction with 14 and 15 year olds with specific learning disabilities.

Srivastava and Gray (2012) also examined the instructional strategy of integrating technology to develop reading comprehension skills in adolescent students with specific learning disabilities. The participants in this study were 25 adolescents with “typical” (p. 424) development and 14 adolescents with “language learning disabilities” (p. 424). The purpose of

this study was to determine if integrating technology, specifically computer-based texts, supported reading comprehension skills. The study involved direct instruction for “4 days, with 30- to 40-min sessions each day” (p. 430) during which participants completed “computer based,” “reading passages and reading comprehension questions” (p. 429). The results were attained by continuous assessment of participants’ results from completed “comprehension question” (p. 429) tests. The results indicate that participants utilizing the computer based “hypertexts” (p. 432) not only improved their ability to read online texts, but also increased reading comprehension. Therefore this study demonstrates “significant” (p. 430) progress of reading comprehension skill development when integrating technology as an instructional strategy for adolescents with specific learning disabilities.

The instructional strategy of fluency may be used to target the literacy area of reading comprehension. Kirby, Silvestri, Allingham, Parrila, and La Farve (2008) explored fluency strategies, specifically reading rate, for adolescents and adults with specific learning disabilities. The participants in this study were 102 post-secondary individuals: 66 individuals were identified as “typically achieving” (p. 88) and 36 individuals were identified as “dyslexic” (p. 88), a specific learning disability. The purpose of this study was to determine if reading rate fluency strategies supported post-secondary students’ reading comprehension skill development. The study involved several instruction sessions in which researchers employed fluency instructional strategies, specifically to increase participants’ oral reading rate. Results were attained by a comparison between participants’ results: “the two groups were then compared on measures of learning strategies and study approaches” (p. 90). The results of this study indicate that participants utilizing the fluency strategies not only improved their oral reading rate, but also increased reading comprehension. Overall, results show that the literacy instructional strategy of

reading rate to teach adolescent and adults with specific learning disabilities produces positive results.

Instead of just one type of instructional strategy, Lovett, Lacrenza, De Palma, and Frijiters (2012) examined multiple strategies and literacy areas appropriate for adolescent and adults with specific learning disabilities. The participants in this study were 351 students at a “mean age of 14 years and 7 months” (p. 151) and were identified as having an “average reading performance” (p. 154), defined as achieving “between 1.5 and 2 standard deviations below age expectations at program entry” (p. 154). The purpose of this study was to determine if “word identification strategies, knowledge of text structures, and reading comprehension strategies” (p. 151) supported reading comprehension development during remediation. The study involved direct instruction in which researchers employed a variety of literacy instructional strategies including “word identification, word attack, passage comprehension and receptive vocabulary skills” (p. 154). The results were attained by “pre- and posttest measures” (p. 157) along with a “battery of experimental and standardized measures” (p. 157). Results from the study indicate an increase of 7% when participants utilized a word attack strategy and reading comprehension strategies, and a 4% increase when utilizing only word identification strategies. Therefore, incorporating a variety of instructional strategies during reading intervention appears to be an appropriate instructional strategy for adolescent and adults with specific learning disabilities based on this Lovett et al. study where “readers achieved significant and meaningful gains” (p. 162).



**Summary of the Review**

This literature review contains reviews of 19 research studies. They have been grouped according to the major sections implied in the research question. The sections of this review are studies focusing on elementary students ranging from grades Kindergarten to grade 6 (11 studies), middle school students ranging from grades 6 to 8 (4 studies), and adolescent and adults (4 studies). Within the three sections, the studies are organized according to the literacy skill developed by the instructional strategy. For elementary students, these skills are phonological awareness, oral fluency, and reading comprehension. For middle school students, these skills are oral fluency, and reading comprehension. For adolescents and adults with specific learning disabilities, these skills are oral reading, and reading comprehension.

### **Chapter 3: Methodology**

To address the research question of instructional strategies appropriate for use by general and special education teachers for literacy instruction with students who have specific learning disabilities, an extensive review of the literature was conducted. This chapter explains the data collection process, the data analysis, and the synthesis. The data collection section describes how the research studies were found for this particular study and what was done to organize the data. The data analysis section provides an examination of all the research studies collected and draws connections among common themes. The synthesis section summarizes what was found as a result of the data analysis and presents it as findings.

#### **Data Collection**

The data for this research synthesis study consist of the 19 research studies found through the data collection process of exhaustively searching the leading educational databases for peer-reviewed research studies. Data were then organized into three categories according to participant age: elementary, middle school, and adolescent/adult. These categories emerged from an analysis of the preliminary data. These categories then served as the organizing structure for further data analysis, which is explained in the next section.

## **Data Analysis**

To begin, all collected studies were analyzed and coded to determine categories, codes, and themes for the data. Studies within each category were then analyzed and synthesized to produce new findings. Findings from each category were then further synthesized to produce results related to the research question for this study. The remainder of this section details the analysis process and the results.

The first category of studies are those examining literacy instruction for elementary school age students with specific learning disabilities. Of the 11 studies in this category, six studies incorporated direct and individualized instruction when implementing instructional strategies (Martens & Jong, 2008; Rouse, Alber-Morgan, Cullen, & Sawyer, 2014; Chen, 2010; Chai, Vail, & Ayres, 2015; Begeny, Mitchell, Whitehouse, Harris Samuels, & Stage, 2011; Newby, Caldwell, & Recht, 2001). The remaining five studies incorporated direct instruction with grouping of participants when implementing instructional strategies (Rafdal, McMaster, McConnell, Fuchs, & Fuchs, 2011; Stagliano & Boon, 2009; Wise, Sevick, Morris, Lovett, & Wolf, 2007; Cohen & Brady, 2011; Guzel-Ozmen, 2011). The instructional strategy of repeated reading produced positive results for developing beginning reading skills for elementary age students with specific learning disabilities (Rafdal et al., 2011; Martens & Jong, 2008). The instructional strategy of simultaneously using multiple strategies provided positive results for several literacy areas: for beginning literacy skills (Wise et al., 2007; Cohen & Brady, 2011), for oral fluency (Begeny et al., 2011), for oral reading (Guzel-Ozmen, 2011), and for reading comprehension (Newby, Caldwell, & Recht, 2001). The studies in this category also examined the use of a single instructional strategy to support a specific literacy skill: oral fluency (Martens

& Jong, 2008; Begeny et al., 2011; Guzel-Ozmen, 2011), reading comprehension (Rouse et al., 2014; Stagliano & Boon, 2009; Chen, 2010; Newby, Caldwell, & Recht, 2001), beginning reading skills (Rafdal et al., 2011; Wise et al., 2007; Cohen & Brady, 2011), and phonological awareness (Chai, Vail, & Ayres, 2015). Analysis of this research has determined that for students in elementary school (grades Kindergarten to 6) who have specific learning disabilities, appropriate strategies for literacy instruction are direct instruction, both to individuals or to groups, repeated reading, and the teaching of multiple strategies for simultaneous use. Using these instructional strategies, both general education and special education teachers can impact the literacy areas of beginning reading skills (including phonological awareness), oral fluency, and comprehension.

The second category of studies are those examining literacy instruction for middle school age students with specific learning disabilities. Of the four studies in this category, one (Fitzgerald, Miller, Higgins, Pierce, & Tandy, 2012) used the instructional strategy of individual instruction while the other three used a grouping strategy (Bhat, Griffin, & Sindelar, 2003; Berninger, Lee, Abbott, & Breznitz, 2013; Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001). Other instructional strategies found by research to have a positive impact were the teaching of phonological awareness (Bhat, Griffin, & Sindelar, 2003), spelling patterns and phonological decoding (Berninger, Lee, Abbott, & Breznitz, 2013), and fluency and oral reading strategies (Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001). In each of these research studies, the instructional strategies employed by the researchers incorporated either a sound/letter strategy or a combination of a sound/letter strategy and an alphabetic principle strategy. Two of the four studies in this category found positive results when using a combination of sound/letter and alphabetic principle strategies to develop reading comprehension

skills in middle school students with specific learning disabilities (Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001; Fitzgerald, Miller, Higgins, Pierce, & Tandy, 2012). In addition to patterns among the instructional strategies, three studies examined instructional strategies that targeted the literacy skill of reading comprehension (Berninger, Lee, Abbott, & Breznitz, 2013; Allinder, Dunse, Brunken, & Obermiller-Krolikowski, 2001; Fitzgerald, Miller, Higgins, Pierce, & Tandy, 2012). Analysis of this research has determined that for students of middle school age (grades 6 to 8) who have specific learning disabilities, the most appropriate strategy for literacy instruction was direct instruction to groups. Other strategies that produced positive results were phonological awareness and decoding, spelling patterns, and oral reading strategies. Using these instructional strategies, both general education and special education teachers can impact what appears to be the most significant literacy area for this age group: reading comprehension.

The third category of studies are those examining literacy instruction for adolescent students and adults with specific learning disabilities. The integration of technology as an instructional strategy to develop students' comprehension skills was explored in two of the four research studies in this category. In both of these studies, integrating technology as an instructional strategy produced "effective" (Stetter & Hughes, 2011, p. 98) and "significant" (Srivastava & Gray, 2012, p. 430) results, indicating technology integration is an appropriate instructional strategy to develop comprehension skills for adolescent students and adults with specific learning disabilities. Of the four studies in this category, two studies examined the simultaneous use of multiple instructional strategies to develop reading comprehension skills (Kirby, Ailvestri, Allingham, Parrila, & La Farve, 2008; Lovett, Lacrenza, De Palma, & Frijiters, 2012). The simultaneous use of multiple instructional strategies demonstrated "meaningful gains" (Lovett, et al., 2012, p. 162) when implemented with direct instruction for individuals and

within groups. All four studies in this category were targeting the literacy skill of reading comprehension development. Analysis of this research has determined that for adolescent students and adults who have specific learning disabilities, the most appropriate strategies for literacy instruction were the integration of technology and the simultaneous use of multiple instructional strategies. Using these instructional strategies, both general education and special education teachers can impact what appears to be the most significant literacy area for this age group: reading comprehension.

**Figure 1: Summary of Data Analysis**

<b>Instructional Strategies</b>	<b>Beginning Reading Skills</b>	<b>Phonological Awareness</b>	<b>Oral Fluency</b>	<b>Comprehension</b>
Direct instruction individual	Elementary	Middle	Elementary	Elementary Middle Adolescent/Adult
Direct instruction in groups	---	Elementary	Elementary Middle	Adolescent/Adult
Repeated oral reading	Elementary	---	Elementary Middle Adolescent/Adult	---
Technology integration	---	Elementary	---	Elementary Adolescent/Adult
Simultaneous use of multiple strategies	Elementary	---	Elementary	Elementary Middle Adolescent/Adult

## **Synthesis**

The results emerging from the analysis of each of the three categories can now be synthesized (combined) into findings that address the research question for this study. A close examination of the analysis presented in Figure 1 above uncovers the first findings of this study: that five

literacy instructional strategies produce positive impact on learning for students with specific learning disabilities. These five are direct instruction with individuals, direct instruction in groups, repeated oral reading, technology integration, and simultaneous use of multiple strategies. The most significant findings of this synthesis are which instructional strategies are appropriate for which age range of student. The most useful and versatile instructional strategies are those strategies that produced positive results for all three age ranges. Analysis reveals three such instructional strategies. Repeated oral reading has been found to produce positive results in the literacy area of oral fluency for elementary, middle school, and adolescents-adults. The instructional strategies of direct instruction with an individual and of simultaneous use of multiple strategies have been found to produce positive results in the literacy area of reading comprehension for all three age ranges. The instructional strategy of direct instruction in groups appears to be appropriate for both elementary and middle school students, while the instructional strategy of integrating technology appears to be appropriate for both elementary students and adolescent-adult students. The third finding is that at the middle and adolescent age range, the main literacy skill to be targeted by literacy instruction is reading comprehension. All general education and special education teachers would benefit from knowing and being able to teach these five literacy instructional strategies to students with specific learning disabilities. Therefore this new knowledge will form the basis of a professional development project intended to instruct general and special education teachers on effective instructional strategies to implement for students with specific learning disabilities. This professional development project is detailed in the next chapter.

## **Chapter 4: Results and Application**

### **Review of the Results**

After completing a review of the literature to determine what research has been conducted to date on appropriate literacy instructional strategies for teaching students with specific learning disabilities, this researcher has determined three key findings from this synthesis. The first finding is that research has determined five literacy instructional strategies that produce positive impact on students with specific learning disabilities: direct instruction with individuals, direct instruction in groups, repeated oral reading, technology integration, and simultaneous use of multiple strategies. The second finding is that the most useful and versatile instructional strategies are the three that produce positive results for all three age ranges of elementary, middle school, and adolescents: repeated oral reading which impacts oral fluency, direct instruction with an individual, and simultaneous use of multiple strategies, both of which impact reading comprehension. The third findings is that the main literacy skills to be targeted by literacy instruction for students with specific learning disabilities at the middle school and adolescent age range appears to be reading comprehension.

### **Application of Results to Professional Development**

The findings from this study have significance to general and special education classroom teachers. They can assist teachers in knowing about appropriate instructional strategies to use for students with specific learning disabilities at the grade range they teach, and assist them when



working in the classroom with these students. Sharing the findings from this research with teachers is professional development, and the most appropriate form of professional development for sharing this new knowledge is a webinar (or online module).

### **Design of Professional Development Project**

The design of this professional development project will be in the form of an online module.

This professional development module is intended for educators that teach general education or special education, with students with specific learning disabilities. The information and instruction that the educators will receive during this module will be supported by the findings from this research synthesis.

### **Literacy Coaching Project Goals and Objective**

The fundamental goal of this professional development module is to support general and special education teachers who are working with students with specific learning disabilities. To address this goal, the following learning objectives provide clarification and description. The first objective of this webinar is participants will learn about instructional strategies appropriate for their grade range. The second objective is participants will gain knowledge about these instructional strategies through explanations and visuals to serve as exemplar models. The third objective is that general and special education teachers will be able to incorporate these instructional strategies successfully into their classroom in order to support their students with specific learning disabilities.

### **Proposed Audience and Location**

This proposed professional development project is for the professional audience of classroom teachers in both general and special education. They will access this online module through a shared teacher-based website provided by school administrators. An archived version of this online module will be accessible at any time, and may be completed by small groups in sessions at the teachers' school, or independently by the teachers on their computer or device.

### **Proposed Project Format and Activities**

This professional development will take the form of an online module. The module will include an overview of the purpose and intent of the professional development. Included in the module will be a summary of the data analysis (resented above in figure 1). The module will then direct users to the appropriate grade range they are instructing. Included in this portion of the module will be explanations of both the instructional strategies most appropriate for their grade range, and the literacy skill those strategies support. Within the explanations, the webinar provides exemplar videos of instructors utilizing these strategies in a real life classroom. Following the explanation/video pages, the module provides supplemental resources. These supplemental resources include additional websites, videos and materials to utilize when implementing the instructional strategies addressed throughout the webinar. At the conclusion of the module, the users will be directed to a discussion board where they may make comments or engage in some interactive discussion with other viewers. Visitors to the discussion board will also be

encouraged to provide feedback, commentary, evaluation on the Module itself or on their experiences of implementing the module strategies in their own classroom.

### **Proposed Resources for Project**

The appropriate resources for this professional development module include online internet access and a computer (or similar technology device) for participants. To prepare the module will require design time and time to search for and select appropriate videos and webpages that support or demonstrate the instructional strategies covered in the module.

### **Proposed Evaluation of Project**

Following the completion of the module, completers will be directed to an online survey site where they will be asked to complete a survey measuring the effectiveness of this professional development experience. The survey will seek to determine if the information was clearly presented, if the instructional strategies were explained and modeled appropriately and effectively, and if the educators would personally use these instructional strategies to support their own students with specific learning disabilities.

### **Project Ties to Professional Standards**

This professional development project ties to the Professional Standards of the International Literacy Association (ILA) because their Standard 6 requires educators to “recognize the

importance of, demonstrate, and facilitate professional learning and leadership as a career-long effort and responsibility” (IRA, 2010). Educators who voluntarily participate in this professional development module will meet this standard by demonstrating participating in professional development as a professional responsibility. This professional development project also ties to the New York State Common Core Learning Standards (CCLS). The CCLS include standards within the following literacy areas: “reading literature, reading informational text, reading foundational skills” (CCLS, 2015). Applying the findings will enable teachers to support student learning within these literacy areas, and guide students to meet the objective of the specific standards, such as “anchor standards for reading literature, informational texts, and foundation skills” (CCLS, 2015).

## **Chapter 5: Discussion and Conclusion**

### **Overview of Study and Findings**

This capstone project explores the question of what are literacy instructional strategies specifically appropriate for students with specific learning disabilities. The researcher has personal interest in this topic based on her own experience as a reader and her experiences with her own diverse students. The most appropriate way to address this research question is with an exhaustive literature review and research synthesis. A synthesis of the found research was conducted and produced three findings. First is that research has determined five literacy instructional strategies that produce positive impact on students with specific learning disabilities: direct instruction with individuals, direct instruction in groups, repeated oral reading, technology integration, and simultaneous use of multiple strategies. Second is that the most useful and versatile instructional strategies are the three that produce positive results for all three age ranges of elementary, middle school, and adolescents: repeated oral reading which impacts oral fluency, direct instruction with an individual, and simultaneous use of multiple strategies, both of which impact reading comprehension. The third finding is that the main literacy skills to be targeted by literacy instruction for students with specific learning disabilities at the middle school and adolescent age range appears to be reading comprehension. These findings are relevant to the professional development of general and special education teachers, and will be dispersed to them through a professional development project in the form of an online interactive module.

### **Significance of the Findings**

These findings are significant to the field of classroom practice because they can impact teacher performance in the classroom. The instructional strategies identified in the findings can allow teachers to provide appropriate support and instruction when working with students with specific learning disabilities. These findings are also significant to the field of literacy because they provide a research-based identification of instructional strategies proven to have a positive impact on various aspects of literacy components across a wide grade range.

### **Limitations of the Findings**

The findings for this study do have limitations. One is that they are based on the existing research, and that research into literacy instructional strategies for use with students with specific learning disabilities has proven to be very scarce. Therefore although research has been conducted at various grade levels, the low number of specific studies in each grade range placed a limitation on the synthesis results. For example, many of the studies found focused on elementary age students; there was limited empirical research with middle school age and adolescent/adult participants. As time passes, perhaps more empirical research will be conducted in each of these grade ranges in order to provide a stronger more complete picture for the grade ranges.

**Conclusion: Answer to the Research Question**

The research question that began this research study is, what are literacy instructional strategies specifically appropriate for use with students with specific learning disabilities? After conducting this study and performing a research synthesis, this researcher determined three findings: five literacy instructional strategies produce positive impact on students with specific learning disabilities; the most useful and versatile instructional strategies are the three that produce positive results for all three age ranges of elementary, middle school, and adolescent students; and the main literacy area to be targeted by literacy instructional strategies for students with specific learning disabilities at the middle school and adolescent/adult age range is reading comprehension. Together these findings provide this answer to the research question. The literacy instructional strategies specifically appropriate for use with students with specific learning disabilities are strategies that incorporate direct instruction, technology, repeated reading, and integration of multiple strategies, and for adolescent/adult students, those strategies targeting reading comprehension.

**Recommendations for Future Research**

The limitations of the findings of this research provide a basis for these recommendations for future research. The first recommendation is for more research that explores this topic of instructional strategies appropriate for students with specific learning disabilities, and the second is for this type of research specifically targeting students at the middle school and adolescent/adult age range. A third recommendation is to research the integration of both reading

and writing instructional strategies to target literacy skill development for students with specific learning disabilities.





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## Appendix

### Module Contents

Instructional strategies rationale and explanation

Graphic representation and video description of instructional strategies

Figure 1: Summary of Data Analysis

<b>Instructional Strategies</b>	<b>Beginning Reading Skills</b>	<b>Phonological Awareness</b>	<b>Oral Fluency</b>	<b>Comprehension</b>
Direct instruction individual	Elementary	Middle	Elementary	Elementary Middle Adolescent/Adult
Direct instruction in groups	---	Elementary	Elementary Middle	Adolescent/Adult
Repeated oral reading	Elementary	---	Elementary Middle Adolescent/Adult	---
Technology integration	---	Elementary	---	Elementary Adolescent/Adult
Simultaneous use of multiple strategies	Elementary	---	Elementary	Elementary Middle Adolescent/Adult

### Feedback and Evaluation Questions Included in Module

How beneficial were the instructional strategies addressed in the module?

Were the visuals/videos descriptive and explicit?

How effective were the instructional strategies, when applied in the classroom situation?