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Relationship Between Self-Efficacy and Reading Achievement Among Students with Disabilities

Jessica Maine
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Walden University

College of Education and Human Sciences

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Jessica N. Maine

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2024

Abstract

Relationship Between Self-Efficacy and Reading Achievement Among Students with
Disabilities

by

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CAS, MA Utica College, 2014

MA, Utica College, 2012

BS, Utica College, 2010

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

August 2024

Abstract

Students with disabilities (SWD) often display lower self-efficacy and have a more negative attitude toward reading compared to typically developing peers. Little research has been conducted to measure the relationship between reading self-efficacy and reading achievement of SWD. The purpose of this study was to investigate if reading self-efficacy predicts reading achievement for SWD. Bandura's theory of self-efficacy guided the research question to evaluate the relationship between reading self-efficacy and reading achievement for SWD. In the present quantitative study, a linear regression analysis (n=85) was used to assess the predictive relationship between SWDs' reading self-efficacy, as measured by the Readers' Self-Perception Scale, and their reading achievement, measured by the Star reading assessment. Findings indicated no significant relationship between reading self-efficacy and reading achievement for participants. Despite the absence of a relationship, the findings from the study may still contribute to positive social change for SWD and help educators make informed educational decisions about reading instruction for SWD.

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Dedication

I am honored to dedicate my work to my grandfather, Francis Collea. Thank you for encouraging my love of reading and learning. From the day I was born, you fostered a love for reading. From our daily trips to the bookstore to sharing stories in the brown Barcalounger, you showed me how valuable and enjoyable reading could be. You encouraged me to always try my best and reach for the stars. Without your love and support, I wouldn't be where I am today. Although you are not here to read this, I know that you would be proud of me. Thank you for supporting my love of learning and encouraging me to always be my best. I hope that I can continue to make a difference helping my students love reading and feel confident in their ability to be successful. I love you. You're the end of my rainbow.

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Chapter 1: Introduction to the Study

Academic success depends on a variety of factors including intellectual ability, academic skills, social emotional skills, engagement, self-efficacy, and motivation (Cockroft & Atkinson, 2017; Novita, 2016; Usher et al., 2018; Zolger-Jerkovic et al., 2018). A large part of academic success involves the ability to read and understand written print (Kilpatrick, 2015). Learning to read proficiently and comprehend text has implications for future academic success (Sullivan et al., 2017). Struggling readers often fail to make adequate reading gains and meet reading proficiency standards. Students who are identified as poor readers in the primary grades continue to demonstrate reading difficulties in later grades (Sullivan et al., 2017). For students with disabilities (SWD), reading achievement results are discouraging (NAEP, 2019).

Recent findings from the 2019 National Assessment of Education Progress (NAEP) suggest poor results in reading achievement for all students. Table 1 displays performance levels on the 2019 NAEP reading assessment for SWD and their typically developing (TD) peers. Twelve percent of SWD in grade 4 and 10% of SWD in grade 8 reached proficiency levels. The NAEP identified that 70% of SWD in grade 4, and 63% of SWD in grade 8 scored at the below basic level, indicating that their reading skills are far below grade level.

Table 1*NAEP Reading Proficiency Scores by Percent 2019*

Level	Grade 4		Grade 8	
	SWD	TD	SWD	TD
Below Basic	70	28	63	22
At Basic	18	33	27	41
At Proficient	10	29	9	33
Advanced	2	10	1	5

Note. SWD=Students with disabilities; *TD=Typically developing students

Nation-wide, in 2019, 35% of all students met grade-level proficiency in reading, compared to 37% of students in 2017 (The Nation’s Report Card, 2019). Despite the call for increased rigor and accountability under the Common Core Learning Standards and Every Student Succeeds Act (ESSA), almost two-thirds of students in grades 4 and 8 in the United States are reading below proficiency levels. When students were asked to assess their ability to explain the meaning of something they read, only 36% indicated that they definitely could (The Nation’s Report Card, 2019). Students lack the skills to be proficient readers and lack self-confidence in their skills. Reading instruction in America’s classrooms for both SWD and typically developing students’ needs to be intentional and intensive (Fuchs et al., 2014).

While it is evident that SWD demonstrate lower reading achievement (Schulte et al., 2016; Shin et al., 2013), little is known about the degree to which self-efficacy predicts reading achievement. Self-efficacy is an individual’s belief in their capability to perform a specific task and is an important factor in predicting success (Bandura, 1997; Usher et al., 2018). Self-efficacy beliefs are domain-specific, meaning that these beliefs are dependent on a specific context and reading self-efficacy may potentially predict reading achievement. This study examined the extent to which a relationship between

reading self-efficacy and reading achievement for SWD exists. The findings from this study may have the potential to impact positive social change for SWD at the local level and on a larger scale in the field of special education. By examining the relationship between reading self-efficacy and reading achievement, educators may obtain insights into the degree to which they need to develop and foster self-efficacy skills in their students during reading instruction (Carroll & Fox, 2017). Struggling readers with low reading self-efficacy doubt their capacity for reading, which means they may not actively engage in reading or persist on reading tasks that are perceived as too difficult (Cho et al., 2015). Recognizing the nature of the relationship between SWD's reading self-efficacy and reading skills may help educators better understand what interventions need to be put in place to address the educational needs of SWD. Understanding the extent to which reading self-efficacy predicts reading achievement may help guide educators to frame instruction in a way that provides students with meaningful, repeated opportunities to develop reading skills as well as build confidence in reading.

The following section contains background information on the topic of the study to provide context for the problem and purpose of the study. The research question and hypothesis and an explanation of how Bandura's theory of self-efficacy provides a theoretical foundation for the study will be presented. A rationale for the study, explanation of the key variables, and definitions of the key terms in the study are presented. Lastly, the assumptions and limitations of the study are discussed to help the reader understand any potential influences or biases within the study.

Background

Various educational reforms aimed at improving reading outcomes have resulted in little to no gains in reading achievement. In 2002, Congress passed the No Child Left Behind Act (NCLB) requiring states to establish annual targets for student academic proficiency. The federal government also tied student test scores on state assessments to additional federal funding through the Race to the Top grant (Jennings & Bearak, 2014). Race to the Top required school districts to develop reforms around four key areas: (a) adopting academic standards for each grade level and assessments designed to prepare students for college and career readiness; (b) develop data systems to track student progress; (c) hire and retain highly qualified educators; and (d) improve low-performing schools (U.S. Department of Education, 2016). Districts who implemented the reform agenda were awarded with additional funding. The result of NCLB and Race to the Top was teachers teaching to the state assessments tests and inadequate student scores on the NAEP assessments with reading outcomes remaining unimproved (Jennings & Bearak, 2014).

Recently in 2015, the Every Student Succeeds Act (ESSA) was enacted as a reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA) (U.S. Department of Education, n.d.). This federal law was enacted to ensure equal opportunity for all students in education (U.S. Department of Education, n.d.). The update in 2015 under President Obama sought to uphold protection for disadvantaged students including SWD and students from low-socioeconomic backgrounds (U.S. Department of Education, n.d.). Much like NCLB and Race to the Top, federal money under ESSA is

ted to a series of criteria including (a) how students perform on state assessments in reading and math, (b) graduation rates, (c) teacher evaluations, and (d) absence rates (NYSED, 2019). ESSA requires that all students have access to standards-based instruction using evidence-based practices (U.S. Department of Education, 2019). Schools that fail to make adequate progress and growth for students in the designated criteria areas must reallocate funding and resources to ensure students' needs are met (NYSED, 2019). Since ESSA is a relatively new initiative, it is difficult to assess its impact on student reading and academic achievement. However, based on past practice and government reforms, these policies are not enough to improve student reading achievement.

Despite these reforms, poor readers have continued to remain poor readers (Kilpatrick, 2015; NAEP, 2019). Various studies have highlighted a lack of teacher familiarity with the scientific knowledge of the acquisition of reading and reading disabilities (e.g. Boardman et al., 2015; Kilpatrick, 2015; Moats, 2009). A range of educational professions from general education teachers (Cunningham et al., 2004), reading specialists (Moats, 2009), and special educators (Boardman et al., 2015) identify a disconnect between their knowledge of the science of reading instruction and current classroom reading practices. While many students learn to read regardless of what reading program a school implements, approximately 40% of students in schools require intensive and explicit reading instruction with a phonics emphasis to become proficient readers (Moats, 2007). While teachers lack the knowledge and skills to address reading challenges in the classroom, it is unlikely that reading outcomes will improve.

Although evidence-based reading instruction supports all students in the acquisition and development of proficient reading skills, students across the country are failing to meet grade level expectations in reading (Kilpatrick, 2015; NAEP, 2019). Even with constant reforms to federal, state, and local policies aimed at improving student learning outcomes, schools continue to fail to teach students to become fluent readers (Kilpatrick, 2015). Investigating the predictive value of reading self-efficacy in relation to reading achievement may provide insight into affective factors that impact reading success. Since it is evident that past practices and research are simply not enough to close the reading achievement gap, consideration of cognitive personal judgment factors like self-efficacy may guide future instruction and reading outcomes for SWD.

Self-Efficacy

Although self-efficacy may positively affect student performance, further research is needed to specifically determine whether reading self-efficacy predicts reading achievement in SWD. SWD are more vulnerable to academic failure and low high school graduation rates. SWD perform 1.17 standard deviations, or more than 3 years below their typically developing peers on measures of reading achievement (Gilmour et al., 2019). Few studies have identified a relationship between reading self-efficacy and reading achievement for some student populations, but the research on SWD is extremely limited (Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Peura et al., 2019). Understanding the specific nature of the relationship between reading self-efficacy and the reading achievement of SWD may be a crucial step to developing quality reading instruction and improving reading outcomes for SWD.

Problem Statement

Self-efficacy is often cited for its positive effects on achievement (Lee & Jonson-Reid, 2016). However, little is known about the relationship between reading self-efficacy and reading achievement for SWD (Prochnow et al., 2013). The problem is that SWD, particularly students with learning disabilities in reading, generally display lower self-efficacy compared to typically developing peers and have a more negative opinion toward reading and display less self-confidence of their own reading skills (Cho et al., 2015; Novita, 2016; Zolger-Jerkovic et al., 2018). To further compound the problem, most of the reading instruction in special education classes emphasizes the development of reading comprehension skills, rather than word reading and fluency skills (Cuillo et al., 2015). SWD may lack the opportunity and access to high quality, explicit phonics instruction to improve their reading skills.

The importance of developing fluent reading skills in young students is well-documented (Bashir & Hook, 2009; Cuillo et al., 2015). While there is strong evidence to support a positive linear relationship between self-efficacy and achievement, few studies have examined if self-efficacy predicts reading achievement for SWD (Carroll & Fox, 2017). It is imperative for researchers to learn about the predictive value of self-efficacy on reading achievement for SWD. By understanding the extent to which reading self-efficacy predicts reading achievement, educators can consider ways to improve reading achievement and foster learning environments that promote the development of reading self-efficacy in struggling students, particularly those with disabilities (Girli & Ozturk,

2017; Lee & Jonson-Reid, 2016). Obtaining this knowledge may guide educators in developing instruction to build reading self-efficacy skills for students.

Purpose of the Study

The purpose of this quantitative study was to determine if reading self-efficacy predicts reading achievement for SWD in the target districts, which include two suburban school districts in central New York. The *Readers' Self-Perception Scale* (RSPS) measures how students perceive their beliefs about reading and will serve as a data collection tool for the study. Reading achievement will be measured by subset scores of the Renaissance Star Reading Assessment (RSRA). The RSRA is a universal screening tool, designed to measure mastery of grade level standards in reading, progress toward development of reading comprehension, and vocabulary skills, and predict performance on state level reading assessments (Renaissance, 2020). Reading self-efficacy was the predictor variable, while reading achievement scores was the outcome variable. Understanding how reading self-efficacy is predicted by reading achievement may give educators insight into the role reading self-efficacy has in reading instruction for SWD so that educators can design instruction and interventions to improve reading outcomes.

Research Question and Hypotheses

RQ: What is the predictive relationship between reading self-efficacy, as measured by the RSPS, and reading achievement as measured by the RSRA for SWD in grades 2-8?

H_0 : There is not a predictive relationship between reading self-efficacy, as measured by the RSPS and reading self-efficacy, as measured by the RSRA for SWD in grades 2-8.

H_a : There is a predictive relationship between reading self-efficacy, as measured by the RSPS and reading achievement, as measured by the RSRA for SWD in grades 2-8.

Theoretical Foundation

The theoretical framework for this study was Bandura's (1977) theory of self-efficacy. Bandura (1977) defined self-efficacy as an individual's belief that he or she has the competency to complete a task or produce a certain result. Bandura (1977) theorized that self-efficacy is actualized by developing one's capabilities and mastering necessary skills. Bandura believed that self-efficacy positively influences academic achievement, interest, and motivation to learn (Bandura et al., 1996). It is hypothesized that there is a significant relationship between reading achievement and self-efficacy. Bandura's theory of self-efficacy applied directly to the study as the extent to which reading self-efficacy predicts reading achievement among SWD are related in suburban school districts in central New York was investigated.

The concept of self-efficacy is complex and multi-faceted. Bandura (1977) believed that an individual's personal self-efficacy is developed by four components of information: performance accomplishments, vicarious experiences, verbal persuasion, and emotional arousal. Performance accomplishments are based on mastery of skills and information. If an individual experiences success in a situation, they are more likely to

feel confident for similar events in the future (Bandura, 1993; Bandura et al., 1996). Individuals can develop self-efficacy by observing other people successfully completing an activity or task (Usher & Pajares, 2008). This is referred to as vicarious experience. Verbal persuasion can involve another individual suggesting that a person can complete a task or giving them verbal encouragement (Bandura, 1977). Emotional arousal explains that individuals are persuaded to act in a certain way based on their current physiological state (Bandura, 1993; Schunk & Pajares, 2009). If a person feels vulnerable or anxious about their ability to perform a task, this emotional state may impact their decision to attempt the task or their performance within the task. These four components of information contribute to how a person develops and perceives their self-efficacy. Table 2 shows the alignment between the source components and mode of induction.

Table 2

Source and Mode of Induction Alignment

Source	Mode of Induction
Performance Accomplishments	Participant Modeling
	Performance Desensitization
	Performance Exposure
	Self-Instructed Performance
Vicarious Experience	Live Modeling
	Symbolic Modeling
Verbal Persuasion	Suggestion
	Exhortation
	Self-Instruction
Emotional Arousal	Interpretive Treatments
	Attribution
	Relaxation
	Symbolic Desensitization
	Symbolic Exposure

Note. Bandura (1977)

Furthermore, Bandura (1993) explained that an individual's ability is not a "fixed attribute," but rather a capability in which knowledge and skills are arranged and utilized for various goals (p. 118). In conjunction with the development of an individual's self-

efficacy, there are also cognitive, motivational, affective, and selective processes that influence a person's self-efficacy. Bandura outlined these four sources that contribute to a person's self-efficacy and influence their cognitive functioning.

Nature of the Study

A quantitative, linear regression was appropriate for the present study because the collection of numerical data allowed for a precise analysis of the relationship between SWDs reading self-efficacy and reading achievement. Data from the RSRA and the RSRA were collected using surveys from participants and analyzed using a simple linear regression. In this study, the predictor variable was reading self-efficacy, as measured by the RSPS, while the outcome variable was reading achievement scores, as measured by the RSRA. The data were inputted into SPSS version 27 for analysis, and a linear regression was used to determine the extent to which self-efficacy predicts reading achievement.

Definitions

Reading achievement: Reading achievement relates to a student's performance in reading. It is assessed by a student's ability to comprehend texts and demonstrate that understanding of text through answering questions on their understanding of text based on the application of reading skills such as decoding, vocabulary, fluency, and comprehension (National Assessment of Educational Progress, 2011).

Self-efficacy: Self-efficacy is defined as a judgment of one's personal capabilities to organize and execute action to obtain a desired academic result (Bandura, 1977).

Students with disabilities: Students with disabilities are students identified as having a disability falling under one of the 13 identified disability categories (Schulte et al., 2016). These students are provided special education supports and/or related services. Under the Individuals with Disabilities Education Act (IDEA), these students have the right to a free and appropriate public education (U.S. Department of Education, 2020).

Assumptions

For this study, it was assumed that the results of the RSRA are an accurate reflection of each child's reading achievement. The results do not consider a student's effort on the assessment, the amount of time spent on the task, or any other measure of achievement. These factors all have the capacity to negatively influence a student's scores on the assessment. These results may not always indicate a student's optimal achievement level. Another assumption is that students represented their beliefs about their reading achievement with honesty and integrity. The directions in the survey ask students to respond accurately and honestly. Because it was clearly communicated that their responses were kept confidential in the directions of the survey, it was assumed that students provided authentic and honest responses. However, it is possible that respondents answered in a way that they thought they should answer rather than answering honestly.

Scope and Delimitations

The scope of this study concerned the reading achievement and reading self-efficacy of SWDs in the public-school setting. It was limited to SWDs in grades 2 through 8 in two suburban school districts in central New York. The sample was limited

to SWD with eligible disability categories recognized by the IDEA. Students who have severe cognitive impairments that would impede their ability to understand or complete the tasks were excluded. Participants in the study were limited to the two target school districts.

Limitations

There were several limits to the present study. The current study used a simple linear regression to determine the extent to which reading self-efficacy predicts reading achievement for SWDs. A simple regression examined the relationship between two variables. However, it cannot describe functional or causal relationships. It should be noted that other variables or factors may influence reading achievement for SWD but were not analyzed within the scope of this study.

The study was limited by convenience sampling. Participants were selected for this study based on attending school in the target school districts, rather than a random sampling of multiple districts within the area. Therefore, the findings may not be generalizable to all special education students within the state. Because the RSRA benchmark assessment was conducted using computer-based testing, it was difficult to assess whether students put forth their best effort, and that the test results indicate a complete profile of a students' reading achievement. The technical adequacy of the RSPS and RSRA also served as a potential limitation by affecting the study's internal measurement validity. The focus of the study was based solely on SWDs in grades 2 through 8 in two suburban school districts in central New York, which limited the generalizability of the study's findings.

Significance

This study addressed a gap in practice that is supported by a local problem in the target school districts. Across the nation, average reading scores for students in grade 4 and 8 on the NAEP declined in 2019. More specifically, 35% of students in grade 4 are reading at proficiency levels, while 34% of 8th graders met proficiency (The Nation's Report Card, 2019). Although increased accountability for school districts has led to more rigorous learning standards, students are still not meeting proficiency in reading. Local data on New York State assessments for the 2021-2022 school year in English Language Arts grades 3 through 8 indicate that only 46% of the total population of students met proficiency levels for reading achievement (New York State Department of Education, 2023). More specifically, in one of the target districts in this study, only 38% of students in grades 3-8 met proficiency levels on the English Language Arts state assessment, indicating that proficiency levels in the region vary even more significantly than across the state. Star reading benchmark assessments for students in grade 2-8 indicated that 31% of SWD are reading at least 2 years below grade level (Principal, personal communication, January 7, 2023).

This study was designed to determine if there is a relationship between reading achievement and reading self-efficacy for SWD in grades 2-8. Until this point, there has been limited research exploring the role of reading self-efficacy on reading achievement of struggling readers and SWD (Carroll & Fox, 2017). Since little is known about how self-efficacy impacts reading achievement, it is important to determine the extent to which these two variables may be related (Carroll & Fox, 2017).

The findings from this study may have the potential to impact positive social change both within the local school districts in the study and on a larger scale. Identifying if reading self-efficacy reading achievement are related may help educators prioritize instruction to improve student reading self-efficacy. This information may help guide teachers to target student needs and build reading self-efficacy skills for students with exceptionalities. Even more important is the potential impact on student reading achievement. By improving students' reading achievement and self-efficacy skills, students can build word reading skills, better reading fluency, reading comprehension, and gain access to more information in written format (Aro et al., 2018). Such improvements could lead to higher levels of reading achievement.

Summary

Self-efficacy beliefs influence an individual's self-confidence and decision making (Bandura, 1977). SWD consistently score lower than skilled readers on measures of reading achievement and self-efficacy (Lee & Jonson-Reid, 2016; NAEP, 2019). An alarming percentage of SWD fail to meet proficiency levels on reading assessments and read well-below grade level expectations (NAEP, 2019). In the target school districts, SWD are still not making adequate progress in reading. The purpose of this study was to investigate the extent to which reading self-efficacy predicts reading achievement for SWD. Collecting this information can help determine if there is value in integrating instruction on self-efficacy skills for SWD. It may help educators determine how to frame instruction and foster the development of self-efficacy in the focus school.

The next chapter provides an exhaustive search of current and seminal research on reading achievement and reading self-efficacy for SWD. A description of how the search for relevant research literature took place will be provided, as well as an explanation of how the theoretical framework guides and aligns with the study. In addition, key findings and themes collected during the research will be presented.

Chapter 2: Literature Review

Few studies have examined the potential relationship between reading self-efficacy and reading achievement for SWD (Lee & Jonson-Reid, 2016; Prochnow et al., 2013). Self-efficacy is often cited for its positive effects on achievement, but with a lack of research for the SWD, it is not well-known how these effects impact this population (Lee & Jonson-Reid, 2016). The purpose of the study was to determine how reading achievement predicts reading self-efficacy for SWD in a suburban school district in central New York. The current literature indicates that reading self-efficacy and reading achievement are closely related, but few of these studies directly address if this relationship is as strong with SWD (Cho et al., 2015; Unrau et al., 2018; Usher et al., 2018). Bandura's (1977) theory of self-efficacy is the theoretical framework that provides the foundation for the present study. An overview of this theory and how it is applicable to this study is presented in the following section. This chapter includes an overview that describes the literature search strategy and details background literature on reading self-efficacy and reading achievement. In summary, this chapter includes past and current research that identifies the research gap aligned with the problem and purpose for the study.

Literature Search Strategy

To identify and find relevant literature relating to the research problem and study an exhaustive literature review was conducted. For this study, the Walden University Library databases were used as the interface for the search. Articles and research studies were in the Education Source, ERIC, SAGE, and ProQuest databases. These scholarly

databases include a variety of research in the field of education and were pertinent to the scope of this study. Each source was reviewed and analyzed, and the reference section of each article was examined closely to identify further peer reviewed research related to the topic. To find articles related to self-efficacy and /or reading achievement for SWD, the following search terms were used: *fluency, reading comprehension, reading achievement, self-concept, self-efficacy, self-efficacy theory, self-perception, special education, students with disabilities, and word reading*. The initial search included the terms *reading achievement* and *self-efficacy* filtered for peer-reviewed journals only. This yielded a total of 78 articles from 1989 to 2020. The search was then expanded to include *self-perception* and *self-concept*, which yielded an additional 86 studies between 1989 and 2020.

To gather information specifically related to reading achievement and progress for students with disabilities, key terms such as *reading comprehension, students with disabilities and word reading or fluency, and students with disabilities* were used. These search terms produced many studies related to reading interventions, reading programs, and reading outcomes for SWD. The remaining studies examined came from a combination of the other key terms. As each source was reviewed and analyzed, the reference section of each article was examined to identify further peer reviewed research related to the topic. This search technique yielded more specific and relevant studies.

During the exhaustive search, it was determined that there were few studies that evaluated reading self-efficacy and reading achievement for SWD. There is a gap in the literature specifically related to reading and self-efficacy for SWD. Limited research

exists on the impact of reading self-efficacy on reading achievement for the SWD population. There are many studies specific to the relationship between reading and self-efficacy but few studies that address the specific research problem and purpose identified relating to SWD. Most of the literature on reading and self-efficacy included a broader range of participants than only SWD. These studies included primarily general education students. Also, there has been limited research on reading and self-efficacy over the last 5 years. To understand the topic in depth from a historical and contextual perspective, 128 peer-reviewed journal articles dating back to the early 1990's through the early 2010's were reviewed. A total of 196 peer-reviewed journal articles published within the last 5 years relating to the research topic, problem, and purpose of the study were explored. The current study contains research information from 45 studies published within the last 5 years. Additionally, seminal research works involving the theory of self-efficacy from Bandura were reviewed.

Theoretical Foundation

Albert Bandura's theory of self-efficacy was the theoretical framework guiding this study. Bandura's theory has been well-documented in educational research and literature regarding academic performance and academic behaviors since the late 1970's, and is positively associated with overall achievement (Bandura, 1993; Carroll & Fox, 2017; Schunk & Pajares, 2009; Unrau et al., 2018; Zimmerman, 1995). The theory of self-efficacy is relevant to the current study as one of the variables being examined is the concept of self-efficacy. To examine factors that influence reading achievement, it is

important to consider the role of self-efficacy and understand how self-efficacy factors may impact learning for SWD.

Bandura (1977) described the construct of self-efficacy as a person's belief that they can complete a task successfully. Self-efficacy is shaped by a person's perception of their own ability. Some children may perceive their ability as malleable, in which they can influence their own ability through the acquisition of knowledge and skills (Bandura, 1993; Schunk & Pajares, 2009). Other children view their ability as a fixed construct that cannot be changed. These children believe that they cannot grow intellectually, and success is out of their control (Bandura, 1993). Children's belief systems regarding their own strengths and weaknesses influence their overall behavior and functioning both in and out of the classroom. The following section outlines the historical influence of Bandura's theory on research related to reading.

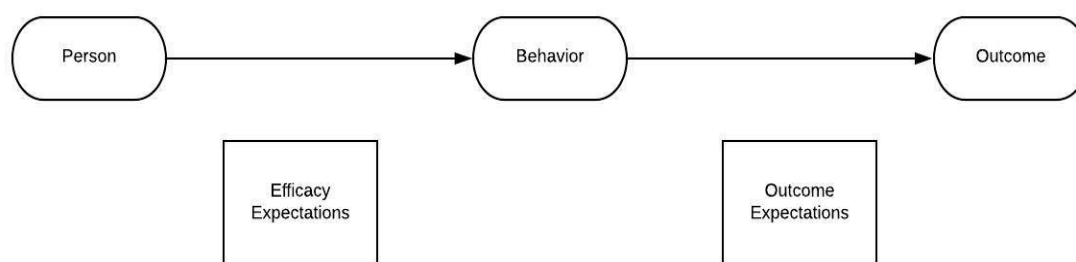
Historical Context

The theory of self-efficacy assumes that psychological procedures create and enhance expectations of personal efficacy (Bandura, 1993). Individuals maintain both outcome expectations and efficacy expectations toward their own abilities. Outcome expectations are defined as an individual's estimate that a certain behavior will lead to a particular outcome, while efficacy expectations are the beliefs that a person can execute the behavior necessary to produce a particular outcome (Bandura, 1977). Figure 1 displays the connection between outcome expectancies and efficacy expectancies. People hold certain efficacy expectations about themselves that impact their behaviors and decision making. They make decisions to either engage or not engage in certain behaviors

based on their beliefs regarding their skill level to obtain a desired outcome. If they maintain low self-efficacy beliefs, they are less likely to engage in certain behaviors (Bandura 1993). People with low-self efficacy beliefs do not feel confident in their ability to successfully accomplish a task or obtain a desired outcome (Schunk & Pajares, 2009). This is why people may be less likely to attempt certain challenges. The self-efficacy principle is applied to educational research in many ways.

Figure 1

Flow Chart of Efficacy Expectations and Outcome Expectations



Note. From Bandura, A. (1977).

One of the earliest reported examples applying Bandura's concept of self-efficacy to academic achievement comes from Corno et al. (1982), who presented their research at the annual American Educational Research Association meeting, where they described the application of self-regulation in the classroom to low academic achievers and measured changes in self-efficacy. Several years later, Schunk (1988) developed a self-efficacy model of achievement with empirical evidence showing that "the idea that self-efficacy predicts student motivation and learning" (p. 14). Measuring the effects of goal setting on the self-efficacy of fourth and fifth grade students, Schunk and Rice (1988)

demonstrated that students who were given a specific goal to improve reading comprehension displayed higher levels of self-efficacy than students who were given a general goal related to work completion. These findings suggest that explicit goal setting processes may improve reading self-efficacy and improve motivation and learning.

Using a randomized pretest-posttest experimental design, Schunk and Rice (1993) investigated the impact of strategy fading and progress feedback on the self-efficacy of 44 students ages 10-11 from low-income families. Strategy fading requires students to learn a specific reading comprehension strategy, internalize the strategy, and determine when to independently access and use that strategy to aid in understanding of texts (Schunk & Rice, 1993). Participants were randomly assigned to one of four groups: fading only, feedback only, fading and feedback, and no fading or feedback. Findings indicated positive increases in self-efficacy for all groups except for the group with no fading or feedback. These findings suggested that self-efficacy can be enhanced through targeted reading interventions.

Self-efficacy may also influence children's perceptions about their reading outcomes. Self-efficacy beliefs for struggling readers are significantly different from average to high performing readers. Shell et al. (1995) compared achievement level differences to self-efficacy and outcome expectancy with 364 students in grades 4-7. Significant differences were measured between high achieving students and low achieving students regarding self-efficacy beliefs. For example, high achieving students had higher task self-efficacy in both reading and writing, lower ratings of luck and teacher help for success, and lower outcome expectancies in reading and writing (Shell et

al., 1995). Students did not attribute their success to luck, but rather to their academic skills. Self-efficacy beliefs, therefore, had implications for students' attributions of success in reading.

Self-Efficacy Processes

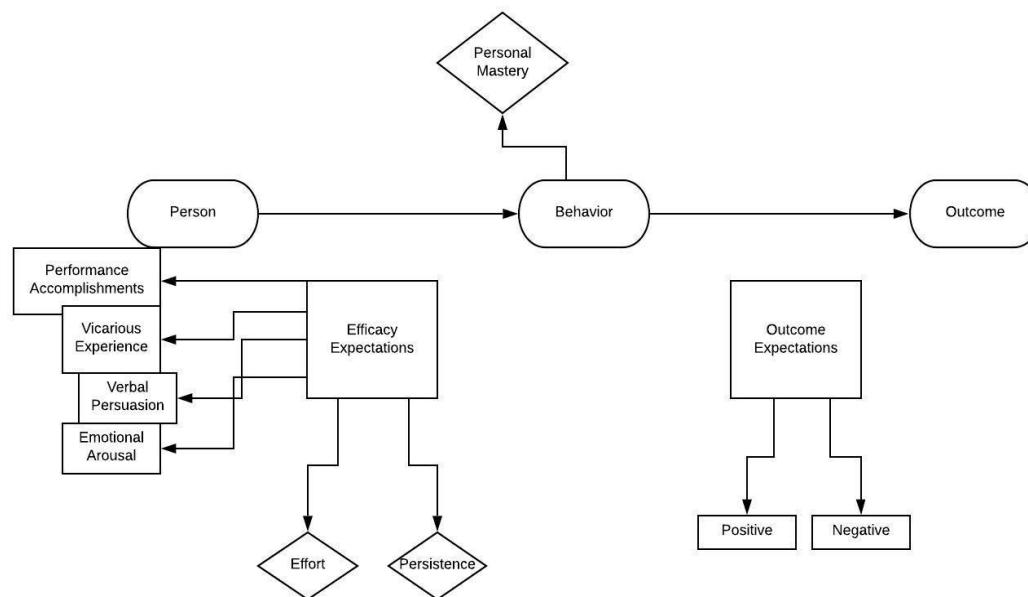
Bandura (1993) hypothesized that four major processes influence a person's perception of his or her own self-efficacy: (a) performance accomplishments; (b) vicarious experiences; (c) verbal persuasion; and (d) emotional arousal. Self-efficacy is developed to the extent to which an individual demonstrates success or performs competently with a task or skill. When a child accomplishes a challenge, it boosts his or her self-confidence (Usher & Pajares, 2008). Vicarious experience involves a child observing others, whether it be a teacher, parent, or peer, and emulating or modeling a behavior or strategy for success (Schunk & Pajares, 2009). Children develop individual self-efficacy beliefs based on their ability to emulate a certain behavior (Schunk & Pajares, 2009). Verbal persuasion refers to verbal feedback that a child receives. When a child receives positive feedback and encouragement, their level of self-efficacy increases (Bandura, 1977; Schunk & Rice, 1993). When combined with explicit goal setting, general education students demonstrated higher levels of academic self-efficacy (Schunk & Zimmerman, 2007). Lastly, emotional arousal means that a person's emotions and feelings toward themselves and an academic activity influence how they perceive the task and how well they believe they can accomplish that task (Bandura, 1977). If a person feels stressed or overwhelmed by a particular task, he or she is less likely to persist in accomplishing the task. Fear and anxiety negatively impact a person's perception of a

given task (Bandura, 1977). These factors strongly influence how a student perceives his or her own strengths and develops or modifies his or her perceptions of self-efficacy.

There are several key factors that impact efficacy expectations: performance accomplishments, vicarious experiences, verbal persuasion, and emotional arousal. The degree of effort and persistence also influences an individual's self-efficacy beliefs (Bandura, 1977). Individuals are more likely to engage in a particular behavior if he or she maintains high efficacy expectations. In addition, someone who has experienced mastery or success with a given behavior will also be more likely to engage in that behavior (Schunk & Pajares, 2009). These factors shape the development of self-efficacy beliefs for children. Figure 2 displays the relationship between an individual's expectations and their intended behavior based on the four processes that impact self-efficacy beliefs.

Figure 2

Relationship Between Processes that Impact Self-Efficacy and Expectations of Behavior



Note. Figure created/adapted from Bandura, A. (1977).

Bandura's theory of self-efficacy has served as the theoretical foundation for numerous studies involving self-efficacy, academic achievement, and social emotional development for students (Cantrell et al., 2014; Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Peura et al., 2019; Unrau et al., 2018). In a study designed to understand the relationship between Bandura's four sources of self-efficacy and reading self-efficacy, Shehzad et al. (2019) found that reading self-efficacy was predicted by performance accomplishments, vicarious experience, verbal persuasion, and physiological state such as emotional arousal. A student's self-efficacy is enhanced by previous success with reading and through observation of effective models from peers also increases self-efficacy (Schunk & Pajares, 2009; Shehzad et al., 2019). When students received positive

praise and feedback from parents, teachers, and peers, it increased their personal feelings of efficacy (Lynch, 2002). A student's physiological state can also negatively influence self-efficacy (Shehzad et al., 2019). For example, as reading anxiety increases, self-efficacy decreases. As a result, students who experience nervousness or fear toward the task of reading may hold the belief that they are incapable of being successful in reading.

Effort and persistence are also impacted by a person's efficacy expectations (Schunk & Pajares, 2009). A person's efficacy expectations determine how much effort a person puts into a task and how long he or she will persist in overcoming challenges or obstacles associated with the task (Bandura, 1977). An individual with high self-efficacy beliefs is more likely to put forth good effort and continue trying to solve a problem until they reach a desired outcome or solution (Cantrell et al., 2014; Unrau et al., 2018). This effort and persistence can also shape future self-efficacy beliefs. If a person experiences success from their effort or persistence, their self-efficacy toward similar tasks in the future will increase (Bandura, 1977). In theory, as a student demonstrates success with reading tasks, his or her self-efficacy toward reading should increase.

Relevance to Study

The theory of self-efficacy is applicable to the scope of the study and aligns with the identified problem, purpose, and research questions. Self-efficacy is highly influential on academic motivation, achievement, and interest (Bandura, 1993). Since little is known about the relationship between reading achievement and self-efficacy for SWD (Carroll & Fox, 2017; Prochnow et al., 2013), it is important to investigate whether the findings from research involving general education students are generalizable to SWD as well. If

there is a strong and positive relationship between reading self-efficacy and reading achievement for SWD, it will support Bandura's theory of self-efficacy and provide information to educators that may inform instructional practices. SWD have unique and individual academic needs as related to the process of learning. Clarifying the nature of the relationship between their reading skills and self-efficacy may confirm and give educators a strong rationale to focus on strengthening SWDs reading skills because of the reciprocal and simultaneous benefits associated with improving both reading self-efficacy and reading achievement.

Literature Review Related to Key Concepts and Variable

Reading achievement and Self-Efficacy

The research literature regarding the role of reading self-efficacy on reading achievement and vice versa is limited, particularly about SWD. Most of the studies examine general education students or include a small percentage of students with disabilities. Self-efficacy is associated with literacy skills for struggling first grade readers (Liew et al., 2008). Similarly, Schober et al. (2018) found small, yet statistically significant Pearson correlations between reading self-efficacy and reading achievement ranging from $r = .21$ to $r = .33$ among 1,597 secondary school students. While these effect sizes indicate that there are other factors which could account for reading achievement scores other than self-efficacy, it is important to recognize the impact of reading self-efficacy on achievement. This suggests that students with more positive attitudes and beliefs toward their reading ability have higher average reading achievement scores than those with poorer attitudes toward reading (Mullis et al., 2012).

In a study of 198 first grade general education students, Wilson and Trainin (2007) found that students with higher self-efficacy beliefs demonstrated higher performance in the areas of reading, writing, and spelling. Unfortunately, these studies did not specifically address SWD.

Further evidence in the general education population indicates that self-efficacy predicts reading achievement (Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Usher et al, 2018; Yang et al., 2018). There is a predictive role of self-efficacy on reading achievement for general education students when controlling for other cognitive predictors (Carroll & Fox, 2017; Yang et al., 2018). Reading self-efficacy can be a greater predictor of reading success than time spent reading, number of books read, parent involvement, and student motivation (Yang et al., 2018). Self-efficacy skills play an important role in the development and progress of reading skills. Yang et al. (2018) suggests that these skills are even more important than other well-studied variables such as motivation and parental involvement. Reading self-efficacy was found to have a positive impact on post-test standardized reading measures in a study involving 881 students at risk for reading failure in grades 1-3 (Lee & Jonson-Reid, 2016). In a study of 2,430 students in grades 4-8 in the southeastern United States, self-efficacy not only predicted reading achievement, but also became a mediator for overall academic performance (Usher et al., 2018). These studies lend to the credibility that a relationship exists between reading self-efficacy and reading achievement for the general education population of students.

High Achievers vs. Low Achievers

The academic and reading self-efficacy differences between the beliefs of high achieving readers and low achieving readers is significant. In a study conducted with 49 struggling readers in grades 6-8, Louick et al. (2016) asked participants to evaluate their self-efficacy beliefs. Participants identified statements related to self-efficacy in three categories: self-confidence, perseverance, and embracing challenges. Of the students interviewed, 63% made statements indicating a lack of self-efficacy toward reading skills (Louick et al., 2016). For example, students made statements such as: “I don’t know how to read that much-it’s hard” and “I feel like I don’t want to do it” when presented with texts they perceive to be challenging (Louick et al., 2016, p. 265). Of the participants, 24% made statements that demonstrated mixed feelings regarding their reading self-efficacy. This suggests that self-efficacy can vary and may change based on the context and difficulty of the given reading task.

Although it appears that low achieving readers possess low reading self-efficacy, some readers hold opposite belief systems. For example, low achievers may exhibit a dysfunctional belief system regarding their reading skills in which they believe their outcomes will be stronger than they actually are (Shell et al., 1995). Students with learning disabilities are more likely to rate their effort toward reading and use of reading related strategies much higher than their teachers rated them (Meltzer et al., 2004). This suggests that some SWD may have an over-inflated sense of their skills. In other words, they may perceive that they can accomplish reading tasks successfully, when in fact; they do not necessarily have the skills and knowledge to achieve the task.

Another study suggested that younger students do not possess the self-perception skills necessary to make accurate evaluations of their reading abilities (Lindeblad et al., 2016). Lindeblad et al.'s (2016) study showed that, of 67 participants ages 10-16 with severe reading difficulties, 75% indicated that they considered reading to be easy and reported very few limitations toward their own reading abilities. In addition, 96% of the participants stated that they enjoyed school, while 89% believed they could manage their schoolwork successfully, despite being identified as struggling readers. The participants in this study demonstrated few indications of anxiety and negative self-image compared to typical peers. These findings contradict previous studies (e.g., Lee & Jonson-Reid, 2016; Shell et al., 1995) in which students were aware of and expressed their lack of efficacy toward reading. To gain a full understanding of SWD, it is also crucial to examine the achievement trends for this population.

Students with Disabilities

For SWD, there is a widening achievement gap in reading compared to general education peers (Schulte et al., 2016). The gap in achievement suggests that the compensatory nature of special education, with efforts to help students make adequate progress toward achieving grade level expectations and standards do not appear to be powerful enough to close the achievement gap between SWD and general education students (Fuchs & Fuchs, 2015). In overall reading achievement, school-age SWD perform more than 3 years below TD peers (Gilmour et al., 2019). Several studies examined reading growth and achievement with SWD (e.g., Schulte et al., 2016; Sullivan et al., 2016; Wei et al., 2011). In a study comparing the reading growth trajectories of

over 99,000 SWD in grades 3-7, special educators were unable to close the achievement gap by grade 7 (Schulte et al., 2016). Due to the widening achievement gap and inability of special education services to close the gap, it is necessary to examine other variables related to reading such as self-efficacy.

Of particular interest is that students in primary grades tend to make larger gains toward closing the reading achievement gap, however the rate of gain slows as students' progress through middle and high school (Ding, 2012; Schulte et al., 2016; Shin et al., 2013). Because reading achievement is related to reading self-efficacy, SWD may display lower levels of self-efficacy compared to general education peers due to the widening achievement gap. The following section examines the components of reading instruction that impact reading achievement.

Word Reading and Fluency

To acquire meaning from a text, students need to be able to decode text both accurately and fluently. Fluency refers to a student's ability to read with automaticity at a high rate of accuracy (Aro et al., 2018). Reading fluency also involves reading at a good reading pace and with prosody, or expression and accurate intonation (Peura et al., 2019; Rasinski, 2014). Fluency is expressed in words read correctly per minute. It is expected that students reading on grade level can read a set number of words in a minute. For example, the DIBELS universal screening tool, is one standardized measure that recommends how many words per minute a fluent reader can read. Students at the end of grade three should be able to read 110 words in a minute, students at the end of fourth grade should be able to read 118 words correctly per minute, while students in fifth and

sixth grade should be able to read 125 words correctly in a minute (University of Oregon, 2012). Students develop good reading fluency through practice with text and knowledge of word recognition and decoding (Peura et al., 2019). Empirical evidence suggests that reading fluency predicts reading comprehension skills (Kim et al., 2010). Since the ability to read written print is critical for academic success and later success in life, students need to become fluent and proficient decoders.

Decoding skills can impact a student's reading self-efficacy. A common theme emerging from student interviews on decoding and self-efficacy is a fear about decoding words incorrectly (Louick et al., 2016). For example, one student stated: "I get scared, because, like when you're reading so good, and you come across a word that you don't know and then you don't want to say it, because you don't want to look stupid in class. That is why I never read out loud" (Louick et al., 2016, p. 266). This statement suggests that this student cognizant of their own challenges and concerned about how others will perceive his or her weaknesses in reading. These perceptions may negatively impact self-efficacy beliefs for students.

Word Reading

Several studies examined the link between reading progress and word level reading (e.g., Chapman & Tunmer, 1997; Henk & Melnick, 1998; Zolger-Jerkovic et al., 2018). The findings from these studies highlight the importance of strong phonics and word attack skills. Students with average to above average decoding skills but poor reading comprehension skills perceived their reading to be stronger than students with poor decoding skills (Zolger-Jerkovic et al., 2018). In a seminal analysis of the impact of

early reading skills such as letter identification, sound identification, and phoneme manipulation, Chapman and Tunmer (1997) found that these skills strongly predicted higher-level skills such as word recognition and reading comprehension. Similarly, when asked to identify what makes a reader a good reader, nearly two thirds of the participants in grades 4-6 in a study by Henk and Melnick (1998) explained word recognition accuracy as the factor that most influences good reading. Children, as a result, recognize the value of developing good word reading skills for proficient reading. A reciprocal relationship between self-efficacy and word reading also exists. Carroll and Fox (2017) found that reading self-efficacy was a small but significant predictor of reading skills. Even after controlling for cognitive factors such as working memory, phonological awareness, and vocabulary, reading self-efficacy predicted reading fluency (Carroll & Fox, 2017). The ability to decode words is integral in the development of good literacy skills.

Students with poor word reading skills often attribute their skills to external factors outside of their control (Zolger-Jerkovic et al., 2018). Students may not believe that they possess the efficacy to improve their decoding skills. However, effective word reading skills is critical for fluency, reading comprehension, and overall reading achievement (Kilpatrick, 2015). Word reading was strongly correlated to and predicted reading achievement levels, even when other factors such as socio-economic status were held constant in a study of students at the elementary school level (Prochnow et al., 2013).

Fluency

While it is important that students can accurately read the words in a text, they also need to be able to decode with sufficient speed, known as fluency. Reading fluency is positively associated with reading self-efficacy. As students increase their reading fluency rate, their perceived levels of self-efficacy increase (Nes Ferrara, 2005; Peura et al., 2019). Reading rate is another factor that influences how students perceive if they are proficient readers (Henk & Melnick, 1998). Approximately 86% of participants in a study by Henk and Melnick (1998) referenced oral reading fluency and reading rate when discussing what constitutes a good reader. These perceptions about reading ability may affect text engagement, participation, and self-efficacy beliefs. It is important to explain that perceptions regarding reading fluency and efficacy are fluid.

In a 12-week special education program intervention designed to improve reading fluency, Aro et al. (2018) found that increases in reading fluency positively impacted reading self-efficacy for SWD. Using a quasi-experimental design, Aro et al. (2018) investigated whether reading fluency as well as self-efficacy were impacted by a targeted reading fluency intervention. Using 1,098 participants in grades 3-5, Aro et al. (2018) used a pretest-posttest and follow-up design to evaluate the reading fluency and reading self-efficacy of students with learning disabilities. Not only did they find significant differences between fluency and self-efficacy between participant groups, they also determined that a targeted fluency intervention could improve not only fluency but also self-efficacy for SWD. This further supports the belief that students can improve their fluency and self-efficacy beliefs with appropriate interventions and supports.

While Aro et al. (2018) focused on generalized reading self-efficacy, Peura et al. (2019) investigated how the specificity of self-efficacy impacts the reading fluency for 1,327 students in grades 2-5. Participants completed an assessment to measure their reading fluency and were asked to report on their perceived reading self-efficacy. Self-efficacy can be assessed at three levels: general, intermediate, and specific (Bandura, 1977). Peura et al. (2019) designed questions to assess each level. To assess general self-efficacy, students were asked to rate how certain they were that they could “learn to read faster” and “learn to read so that you can make fewer mistakes” (Peura et al., 2019, p. 503). To measure intermediate self-efficacy concerning a student’s confidence in completing specific tasks, participants responded to prompts asking them how certain they were that they could read a long book, subtitles on a TV show, and long texts on the internet. Lastly, to evaluate self-efficacy at the specific level, participants were asked how confident they were in their ability to read a specific passage in 30 seconds.

The findings show that reading self-efficacy includes beliefs at the general, intermediate, and specific levels. There were significant positive correlations between reading self-efficacy at all levels and reading fluency (Peura et al., 2019). General self-efficacy was correlated with intermediate self-efficacy. In addition, Peura et al. (2019) found a significant relationship between reading fluency and reading self-efficacy beliefs for the participants in this study. These findings suggest that there is a relationship between reading and self-efficacy but did not factor in the impact of a child’s disability or aggregate data by disability. Although reading fluency is a crucial component of reading proficiency, other factors, such as comprehension are equally as important.

Reading Comprehension

One important measure of reading achievement is reading comprehension. The purpose of reading is to acquire meaning from text (Aro et al., 2018). Reading comprehension skills allow students to read for information and help build knowledge across content areas (Zimmerman & Reed, 2020). As a result, the comprehension of text is crucial for success as a student. Interventions targeting reading comprehension skills not only produced positive effects on reading comprehension in the immediate future but had lasting effects after 11 months with an effect size of $d = 0.22$, which while considered a small effect, was considered a positive finding concerning how well the effects of the intervention were sustained over time (Suggate, 2016). Several studies found a direct correlation between reading comprehension and self-efficacy for children (Louick et al., 2016; Shehzad et al., 2019; Wolters et al., 2014). Students who perceived themselves as more self-efficacious had higher levels of reading comprehension and performed higher on standardized reading measures (Louick et al., 2016; Shehzad et al., 2019). Adolescents with poor reading comprehension were more likely to express lower self-efficacy scores and viewed reading as more difficult compared to the adequate group of readers (Wolters et al., 2014). In addition, they had lower levels of perceived control over reading tasks and were more likely to report feeling anxious about reading (Wolters et al., 2014). The effects of poor reading comprehension are evident from these studies.

Findings demonstrating the relationship between reading comprehension and reading self-efficacy are also evident in a study conducted by Solheim (2011). Using 217 participants in fifth grade aged 10-11, Solheim used a regression analysis to examine if

reading self-efficacy contributed to the variance in reading comprehension scores when controlling for other factors of reading achievement such as decoding and listening comprehension. Participants who had high levels of reading self-efficacy performed better on multiple choice and extended response style reading comprehension tasks compared to students with low levels of self-efficacy (Solheim, 2011). These findings contribute to the body of knowledge that indicates variables related to reading achievement impact reading self-efficacy and serve as justification for the research questions and purpose of the study.

While it is evident that reading comprehension skills influence reading self-efficacy perceptions for general education students, the influence on SWD is less understood. To determine how interventions aimed at improving reading comprehension impacted self-efficacy beliefs for fourth-eighth grade students with reading disabilities (n=20), Nelson and Manset-Williamson (2006) conducted a comparison study. To participate in the study, students had to complete one of two six-week reading comprehension interventions and read at least 2 years below grade level. Each participant engaged in the intervention one-on-one, 4 days per week, for an hour each day. One group engaged in a guiding reading group, while the second group engaged in an explicit comprehension group, emphasizing the development of specific comprehension skills such as main idea, summarizing, self-monitoring, and strategy feedback.

Results indicated that participants in the explicit comprehension group did not make significant gains in reading self-efficacy, while participants in the guided reading group made moderately significant gains in self-efficacy (Nelson & Manset-Williamson,

2006). The students in the explicit comprehension group showed significantly greater gains with reading comprehension. The findings contradict the findings from other studies suggesting that reading comprehension skills are positively associated with reading self-efficacy (Shezhad et al., 2019; Solheim, 2011). These results demonstrate the need for further research with SWD to determine the extent to which comprehension and other factors of reading positively influence self-efficacy.

Strong decoding skills are also a predictor of reading comprehension skills (Kilpatrick, 2015; Quinn et al., 2019). However, several other factors influence how students understand and interpret text. A child's language skills and vocabulary knowledge are particularly important for comprehension, especially as the content becomes increasingly complex (Hirsch, 2003; Quinn et al., 2019). Many SWD often struggle with reading comprehension (Sanders et al., 2019). Delays with vocabulary development and language skills may contribute to weak reading comprehension skills. Other children may struggle to self-monitor their comprehension as they read or fail to use appropriately comprehension strategies to understand text (Zimmerman & Reed, 2020). Teaching specific strategies to understand and comprehend text is a frequent component of reading comprehension instruction for students.

Self-Efficacy and Strategy Instruction

Much of the research related to reading achievement and self-efficacy for SWD focuses on the effects of explicit strategy instruction (Cantrell et al., 2014; Girli & Ozturk, 2017; Meltzer et al., 2004). Explicit strategy instruction is often a key component of special education instruction with a goal of building student independence and

problem-solving skills. Strategy instruction involves a direct, systematic approach to teaching students' specific processes for problem solving. These processes serve as a framework that students can apply when they encounter a specific problem. SWD often fail to utilize appropriate learned strategies for both decoding and comprehension (Antoniou & Souvignier, 2007; Cantrell et al., 2014; Girli & Ozturk, 2017). This lack of application and self-regulation hinders their overall reading progress. Van Keer and Verhaeghe (2005) hypothesized that the explicit instruction of reading strategies would enhance student reading comprehension and self-efficacy.

In an initial evaluation, Meltzer et al. (2004) found that SWD displayed significant differences in their perceived levels of self-efficacy prior to an explicit strategy instruction intervention. SWDs rated themselves as having more difficulty with reading tasks, putting forth less effort on reading tasks, and using fewer strategies to complete their work compared to general education peers (Girli & Ozturk, 2017; Meltzer et al., 2004). The use of explicit strategy instruction helped this population of students made significant gains in self-efficacy beliefs and strategy usage. However, these students continued to be behind general education peers and were unable to close the achievement gap with the targeted intervention (Girli & Ozturk, 2017; Meltzer et al., 2004).

To determine if reading comprehension could be enhanced through explicit strategy instruction, 73 SWDs in grades 5-8 participated in an intervention program designed to teach students how to apply metacognitive reading strategies to support reading comprehension (Antoniou & Souvignier, 2007). Students in the treatment group

demonstrated significant growth with reading-strategy knowledge and application compared to a control group using t-test comparisons in a pre-test, post-test, and follow-up design. In an earlier study, Van Keer and Verhaeghe (2005) found similar results for general education students in grades 2-5 in which explicit direct instruction of reading comprehension strategies resulted in at least a quarter standard deviation of growth on average. It is especially important to note that the struggling readers in this study showed the most significant gains in reading comprehension (Van Keer & Verhaeghe, 2005). These findings suggest that the use of explicit instruction in reading comprehension skills and strategies is beneficial for struggling readers.

Antoniou and Souvignier (2007) also evaluated the extent to which perceived self-efficacy could change after implementation of explicit strategy instruction for comprehension. Using follow-up measures, they determined that students in the treatment group, who demonstrated positive gains in reading comprehension and strategy use also showed a significant increase in reading self-efficacy with a large Cohen's effect size of $d=.78$. Van Keer and Verhaeghe (2005) found that fifth grade students were significantly less concerned with failure and negative thoughts regarding reading following the explicit strategy intervention, but these findings did not persist for the participants in grades 2-4 in this study. While it may not be an effective strategy for all students, explicit strategy instruction may hold promise for building reading comprehension skills for SWD and thereby foster the development of reading self-efficacy as well.

Metacognitive Awareness

Bagci and Unveren (2020) explored the effects of metacognitive awareness of reading strategies on the self-efficacy beliefs in reading comprehension for secondary students. Metacognition is defined as the awareness and process of thinking about thinking (Bagci & Unveren, 2020; Girli & Ozturk, 2017). Students who are metacognitively aware of their self-knowledge and can think about the processes involved in understanding text rely on self-regulation to monitor their reading progress. Bagci and Unveren (2020) found that students with strong metacognitive awareness also had better comprehension for both visual and written material. They also found a statistically significant relationship between reading and self-efficacy. Students relying on metacognitive strategies to monitor comprehension also had higher perceptions of self-efficacy than students who did not utilize metacognition. These findings validate the importance of explicit strategy instruction in self-regulation to increase reading self-efficacy for students. It also highlights the need to better understand the relationship between reading self-efficacy and reading achievement for SWD.

Botsas (2017) investigated differences between students with and without learning disabilities in relation to the use of metacognitive reading strategies. Using a similar population to Girli and Ozturk (2017), Botsas recruited 122 students in grades 5-6, of which half were students with learning disabilities, while the other half were identified as good readers. Using think-aloud procedures to have students vocalize their use of metacognitive learning strategies, Botsas' reading passages included errors in text information related to content, grammar, and syntax. These errors were designed to see

how students would respond and process their thinking to aid in reading comprehension. The students with learning disabilities group performed significantly lower than students without learning disabilities in usage of metacognitive learning strategies to make sense of the texts. SWD used fewer planning and monitoring strategies for both narrative and expository texts (Botsas, 2017).

In a similar study involving a relational screening design aimed at examining the opinions of participants, Girli and Ozturk (2017) conducted a study to explore the relationship among metacognitive reading strategies for students in grades 5-8. Unlike the Botsas (2017) study, Girli and Ozturk (2017) also explore the impact of metacognitive techniques on academic self-efficacy. Girli and Ozturk examined differences in usage and self-efficacy between SWD and general education students. Results indicated significant differences between the metacognitive strategy use with general education students utilizing learned strategies for reading and problem solving at much higher rates than SWD (Girli & Ozturk, 2017). SWD did not take advantage of metacognitive learning strategies to guide comprehension of texts. They also determined that general education students had higher levels of skill and overall higher academic self-efficacy toward reading than SWD (Girli & Ozturk, 2017). Therefore, as reading strategy usage increased, so did academic self-efficacy.

Affective Factors

Aside from the various components of reading such as reading comprehension, word reading, and fluency reviewed in the literature, there are many affective factors which impact a child's beliefs and self-perceptions of their skills and abilities in reading.

These factors include anxiety, depression, feelings, motivation, control, and teacher related perceptions. In an investigation of self-esteem and anxiety for students with dyslexia, Novita (2016) found that children with dyslexia reported higher levels of generalized anxiety and lowered self-esteem than general education students. These secondary issues may pose many problems for students in the classroom setting particularly when it comes to beliefs and feelings toward reading.

Emotions

A child's emotions toward the task of reading may also impact their performance. Students who have negative feelings or emotions toward completing a specific reading tasks tend to have lower self-efficacy in reading (Paivinen et al., 2019). These negative emotions can range from nervousness to frustration and anger. Students with reading disabilities may also experience higher levels of anxiety and lower self-esteem toward reading tasks (Novita, 2016). Thus, stronger students' reading self-efficacy beliefs will usually predict emotions toward reading (Paivinen et al., 2019). These emotions are directly correlated to a child's reading self-efficacy. Consideration of a child's emotional perspective may be an important consideration in evaluating a child's self-perception toward reading.

Motivation

Related to the concept of self-efficacy is the construct of motivation. Individuals who have high levels of self-efficacy believe their failures to be a result of insufficient effort rather than ability (Bandura, 1993). In other words, these individuals feel that they

can exert some level of control over their own performance. Individuals with low self-efficacy attribute their failures to low ability (Schunk & Pajares, 2009).

A student's perceived reading self-efficacy and attitude toward reading and motivation can impact levels of reading motivation and academic achievement (Wigfield et al., 2016). Reading motivation predicts reading amount and breadth of reading (Wigfield & Gunthrie, 1997). In addition, students who perceive reading to be an important task are more likely to display higher motivation than students who do not recognize the value in reading (Rosenzweig et al., 2018). Struggling readers may hold different motivational beliefs based on their past experiences with reading. This in turn may negatively influence their interest and engagement in reading as well as reading self-efficacy.

Conceptually there are clear reasons as to why less skilled readers may hold different motivational beliefs than higher achieving peers. Struggling readers, by definition, have had repeated experiences of difficulty and failure with regards to reading tasks, or in subject areas that rely heavily on literacy skills (Wolters et al., 2014). This prior history of poor performance should translate into less adaptive expectancies or competency-related forms of motivation (Wolters et al., 2014). These belief systems may shape a struggling readers' sources of self-efficacy and impact their self-confidence, self-concept, and self-efficacy toward reading.

Several researchers concerned about struggling readers investigated the relationship between reading motivation and reading self-efficacy among school age children (e.g., Cantrell et al., 2014; Lee & Jonson-Reid, 2016; Wigfield et al., 2004;

Wigfield et al., 2016; Yang et al., 2018). One of the findings was that reading self-efficacy is significantly associated with motivation to read (Lee & Jonson-Reid, 2016). Also, in their study involving 825 students in grades 1-3, Lee and Jonson-Reid (2016) found that motivation mediates the relationship between reading achievement and self-efficacy. If students are highly motivated to read and improve their reading skills, they are more likely to display higher levels of self-efficacy that cannot be explained by reading achievement alone.

As reading motivation increases, reading self-efficacy increases (Wigfield et al., 2016). Wigfield et al. (2016) examined the relationship between reading motivation and self-efficacy by evaluating the effects of two targeted reading comprehension interventions, CORI, and strategy instruction (SI) for 350 3rd grade students. They suggested that motivation and self-efficacy can be influenced by targeted reading interventions, but cautioned that intervention selection is important, because not all strategies are equally effective in increasing motivation and self-efficacy (Cantrell et al., 2014).

Motivation consists of both intrinsic and extrinsic motivational factors. The link between intrinsic motivation and reading achievement is well documented. Yang et al. (2018) found a weak correlation ($r = .18$) between intrinsic motivation for reading and reading self-efficacy. Also, there was a moderate correlation ($r = .42$) between reading self-efficacy and reading achievement among grade 4 participants in a regression analysis (Yang et al., 2018). Similarly, Wigfield et al. (2016) found that students' intrinsic motivation positively correlates to reading achievement.

Additional Variables

Bandura et al. (1996) investigated factors that influence academic self-efficacy with 279 children, ages 11-14 in suburban middle schools. Using both child and parent surveys to measure perceived self-efficacy, they determined that a family's socioeconomic status influences academic self-efficacy. However, SES could be mediated through strong parent academic aspirations and children's prosocial behaviors and motivation to learn (Bandura et al., 2016). Children with high levels of self-efficacy present more prosocial behaviors than those with low perceptions of self-efficacy. Children with low self-efficacy experience higher levels of physical or verbal aggression, disengagement, and poor social adaptive skills (Caprara et al., 1992). Student motivation was the only factor that could mediate the relationship between reading self-efficacy and reading achievement (Lee & Jonson-Reid, 2016). Targeted interventions, designed to increase student reading achievement with an emphasis on exploring and growing motivational beliefs, can effectively increase student reading outcomes and increase levels of motivation for struggling readers (Toste et al., 2017). Typically, motivation to read for struggling readers decreases over time. Students with reading disabilities demonstrate significant changes in motivation over time including decreased levels of intrinsic, extrinsic, and social motivation from elementary to middle school compared to non-disabled peers (Lee & Zentall, 2017). These mediators are important considerations for educators seeking to improve self-efficacy perceptions.

Attributions

Children often attribute their academic skills and attitudes toward success and failure to their perceived degree of control over a situation. When children experience repeated failure, they may feel a lack of control over their success and develop a sense of learned helplessness toward accomplishing that task successfully (Frijters et al., 2017). There are significant differences in the reading attributes for students with reading disabilities and reading difficulties compared to typically developing peers (Tsujiimoto, 2018). Children who are high achievers, for example, are more likely to explain their success with their reading ability (Cuevas et al., 2014). One of the advantages of this attribute is that students who feel that internal factors shape their ability have higher levels of persistence on difficult tasks and high degrees of self-efficacy (Berkeley et al., 2011; Frijters et al., 2017). Struggling readers, on the other hand, are more likely to view their difficulties with reading as a fixed construct, which cannot be changed with effort and practice (Cuevas et al., 2014; Frijters et al., 2017). These beliefs can impact word reading and comprehension skills as well.

Children with poor word reading and comprehension skills often attribute their skills to external factors outside of their control (Zolger-Jerkovic, et al., 2018). Given a series of statements ranging from positive outcomes such as “I read the story quickly, without any difficulties” to negative statements such as “I read the story, but I did not manage to answer the questions” participants had to explain the reason for each statement. Participants who expressed difficulties with reading did not attribute their failure to a lack of personal skill, but rather factors to which they had little to no control

over (Zolger-Jerkovic et al., 2018). One of the challenges of these belief systems is that reading engagement is strongly influenced by an individual's perceptions about their reading abilities and motivational factors (Henk & Melnick, 1998; Rosenzweig et al., 2018). As a result, students who have negative beliefs about their skills are less likely to remain engaged in reading tasks.

Teacher Impact

Although the influence of the classroom teacher may often be overlooked when evaluating factors that impact individual student achievement, it is worth noting the potential impact that teachers may have on student self-perceptions. In an evaluation of the perceptions of 122 secondary teachers of students with specific learning disabilities, Woodcock and Hitches (2017) found that teachers are likely to attribute student failure to a child's disability. They viewed a disability as a fixed construct and maintained lower expectations for these students because they expected them to fail. These preconceived notions could have the potential to negatively impact classroom instruction and academic progress for SWD (Woodcock & Hitches, 2017).

Students often rely on teacher behaviors to form opinions of themselves. For example, students are likely to internalize teacher behaviors (Henk & Melnick, 1998). Students identified teacher praise as one of the ways to determine if a student is a good reader (Henk and Melnick, 1998). Teacher feedback is also important in shaping how students perceive their skills. High-quality feedback from a teacher had an average effect size ($d=0.73$) on student learning and achievement in a study conducted by Hattie (2009). Teacher expectations for student performance may also positively influence student

performance. Gentrup et al. (2020) found that when teachers had high expectations for student performance, students performed better in reading even when the teacher's expectations were inaccurate. Also, students may also believe that teachers call upon higher performing students more often than struggling learners. Two thirds of students in the Henk and Melnick (1998) study mentioned both teacher praise and the pattern of calling on students as indicators of student success. This suggests that students are aware of how teachers perceive their abilities and use that information to make assumptions about their own reading skills.

In a study involving 60 fourth grade teachers and 1,476 students, Engin (2020) examined the relationship between students' academic achievement and motivation with variables such as teacher motivation and teacher self-efficacy. There was a statistically significant difference between student achievement with student motivation, teacher motivation, and teacher self-efficacy (Engin, 2020). Teachers with high motivation and self-efficacy toward their teaching ability are more likely to improve student learning outcomes. High teacher self-efficacy is associated with reading comprehension skills (Zee et al., 2018). Therefore, these factors may promote increased learning opportunities and higher academic achievement for students.

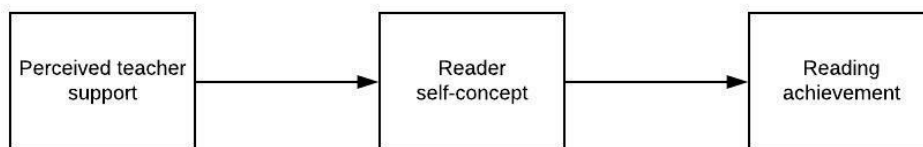
Jensen et al. (2019) hypothesized a relationship between perceived levels of teacher emotional support, reader self-concept, and reading achievement for 2,888 first grade students with an average age of 7. Self-concept is defined as an individual's "self-perceptions that are formed through experience with and interpretations of one's environment" (Retelsdorf et al., 2014). Self-concept can also refer to a child's attitude

toward reading (Prochnow et al., 2013). Like self-efficacy, individual beliefs about their own strengths and abilities are influenced by their unique experiences and situations (Retelsdorf et al., 2014).

When students feel comfortable in the classroom and believe that they have adequate emotional support from their teacher, their perceived self-concept is stronger. (Jensen et al., 2019). Therefore, the impact of teacher support in the development of self-concept and self-efficacy may be an influential factor on how students perceive their reading skills (Henk & Melnick, 1998; Jensen et al., 2019). Figure 3 displays a conceptual framework for findings in the Jensen et al. (2019) study that found a positive relationship between the perceived level of teacher support and reader self-concept.

Figure 3

Relationship Between Teacher Support, Reader Self-Concept and Reading Achievement



Note. Adapted from Jensen et al. (2019).

Summary and Conclusions

Although a plethora of special education services, programming options, and evidence-based reading interventions exist to support the reading development of SWD, their reading skills continue to decline rather than improve (NAEP, 2019). In fact, many SWD perform as much as 3 years below grade level in reading achievement (Gilmour et al., 2019), leading to an achievement gap that, by grade 7, teachers are unable to close

(Schulte et al., 2016). These findings imply that special education programs have a long way to go to close these achievement gaps and help students become proficient readers. After conducting a review of the current literature on reading achievement and SWD, a few themes emerged. Students require proficient word decoding and reading fluency to become successful readers. However, they must also be able to apply their language and vocabulary skills to comprehend texts. Students need to be able to apply learned comprehension strategies to support their understanding of information because the purpose of reading is to make meaning from text. Although evidence-based instructional practices designed to build decoding and comprehension skills have helped improve reading skills for SWD, they have not been powerful enough to close the achievement gap (Aro et al., 2018; Gilmour et al., 2019; Girli & Ozturk, 2017).

Despite extensive and exhaustive research, it is evident that studies examining reading self-efficacy and SWD are extremely limited. The results of the study may help to fill the gap in research that exists identifying the effects of reading self-efficacy reading achievement for SWD. Understanding how reading self-efficacy and reading achievement are related may be a possible gateway to improving reading outcomes for SWD. The following chapter outlines the research methodology for this study. Included in the next chapter is an overview of the research design. The setting of the study, the process for recruiting and selecting participants, and how data will be collected are described. A description of the data analysis process that will be used and how the analysis will answer the research questions will be explained.

Chapter 3: Research Method

The purpose of this study was to determine if there is a significant relationship between reading achievement and reading self-efficacy for SWD in grades 2-8. More specifically, the study sought to determine if reading self-efficacy is a predictor of reading achievement. Understanding the extent to which reading achievement and reading self-efficacy are related may help educators make informed decisions about incorporating interventions to improve reading self-efficacy and student reading achievement. In Chapter 3, there is a description and explanation of the research design and rationale for the study. Included is a description the setting of the study, information about how participants were chosen, and the procedures for recruitment and data collection. The types of data collected and the plan for analysis are also described in the chapter. Additionally, a discussion of threats to validity and considerations for critical ethical procedures that may impact the findings and implications for this study is provided.

Research Design and Rationale

A quantitative methodology was selected to determine if reading self-efficacy predicts reading achievement for SWD in grades 2 through 8. A simple linear regression was also used to assess the relationship among the predictor variable, reading self-efficacy and the outcome variable, reading achievement. The following chapter is a description of a simple regression design, an explanation of each variable and its alignment to the research question, a detailed description of data collection, and data analysis plan.

A simple linear regression design was an appropriate analysis approach for this study. A linear regression is a statistical analysis to determine if one variable predicts a relationship with another variable (Frankfort-Nachmias & Leon-Guerrero, 2018). This approach allows a researcher to determine the influence of a predictor variable on an outcome variable. In this case, the predictor variable is reading self-efficacy, and the outcome variable is reading achievement. Identifying the extent to which reading self-efficacy predicts reading achievement may help the target districts make educational decisions to potentially improve reading outcomes for SWD. More importantly is the potential implication of improving reading instruction with a focus on the development of self-efficacy skills for SWD in other schools with similar demographics.

Reading achievement was measured using the subset scores from the RSRA. The RSRA is the universal screening tool that both target districts use to analyze student reading achievement and measure progress toward meeting grade level standards in reading for all students. It is administered to all students in the target districts in the fall, winter, and spring. By measuring the scores three times annually, educators can assess the growth of student reading achievement, determine if students are performing on grade level, and identify students who need targeted reading interventions (Renaissance, 2020). Students receiving tier two or tier three academic intervention services through Response to Intervention or Multitiered Systems of Support may complete the STAR assessment monthly for progress monitoring purposes.

To measure perceived reading self-efficacy, student participants took the RSPS questionnaire created by Henk and Melnick (1995). The RSPS was developed in

alignment with Bandura's theory of self-efficacy and poses questions to understand children's self-perceptions of their reading ability (Henk & Melnick, 1995). The questions focus on self-efficacy of reading in the areas of word reading, word analysis, reading fluency, and reading comprehension (Henk & Melnick, 1995). Utilizing a questionnaire allowed for an analysis of how SWD perceive their self-efficacy skills as they relate to the area of reading. The RSRA and the RSPS tools helped to determine if there is a relationship between reading achievement and reading self-efficacy for SWD. The RSPS questionnaire was given to students in a 1:1 setting format to collect data in a private setting, allowing students a greater opportunity to provide honest answers.

Methodology

Important details regarding the methodological approach to this study are described below. The population, sample, and sampling procedures are described. Then, the process for participant recruitment, participation, and data collection are described. Information regarding the study's instrumentation, variables, and a plan for data analysis are outlined and discussed. Lastly, several threats to the validity and ethical considerations of the study are addressed.

Population

A research population describes the total set of individuals a researcher is interested in studying (Frankfort-Nachmias & Leon-Guerrero, 2018). The target population for the study was SWD in grades 2-8 in two suburban school districts in Central New York. The population included students with high incidence disabilities, but

it excluded students with cognitive disabilities that limited their ability to participate fully such as students with intellectual disabilities.

The sites for the study were two school districts located in suburban areas Central New York. For the 2020-2021 school year, target district 1 had an overall student enrollment of 846. Of these students, 96% identified as white, 2% as Hispanic or Latino, 1% African American or black, and 1% multiracial. Thirteen percent of the student population is classified as having a disability, and 28% are considered economically disadvantaged (New York State Department of Education, 2023). Forty-nine percent of students in grades 3-8 performed in the proficient range on the New York State English Language Arts assessment for the 2021-2022 school year (New York State Department of Education, 2023). During the 2020-2021 school year, target district 2, had an enrollment of 1,755. Of the students enrolled, 94 % are white, 3% are multiracial, 1% are Asian, and 1% are Hispanic or Latino. 12% of students in this district are classified as a SWD and receive special education programs and services (New York State Department of Education, 2023). Additionally, 44% of the school's population is economically disadvantaged, receiving free and reduced lunch (New York State Department of Education, 2023).

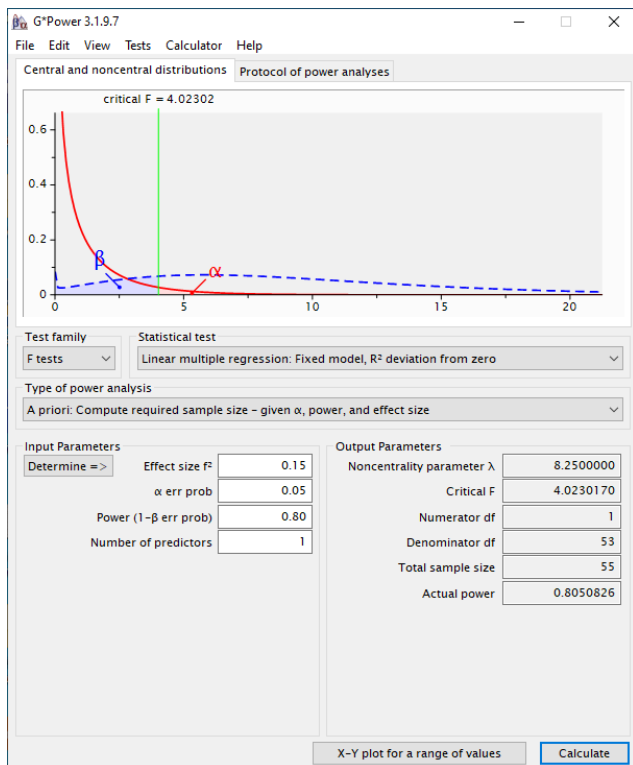
Sampling and Sampling Procedure

A sample is the subset of cases chosen from a specific population (Frankfort-Nachmias & Leon-Guerrero, 2018). Choosing a sample allows a researcher to collect data and generalize the findings to the targeted population. For this study purposeful sampling was used. Purposeful sampling allows a researcher to identify individuals who are

knowledgeable about a specific situation or experiencing a particular phenomenon (Palinkas et al., 2015). In the study, the participants engaged in the same core reading curriculum and the same methods for evaluation of reading progress. Selecting participants in the target district allowed for a targeted analysis to determine if reading self-efficacy predicts reading achievement for SWD in grades 2-8.

A purposeful, criterion-based approach was appropriate because the participants needed to meet a predetermined set of criteria. Individual participants were enrolled in the target school districts. These individuals were classified as SWD in grades 2-8. Due to the nature of the study, students with moderate to severe disabilities that limit their ability to participate in the study (e.g. deaf-blindness, intellectual disabilities, and multiple disabilities) were excluded. Students with mild disabilities under IDEA (e.g. learning disabilities, speech or language impairment, other health impairment, and Autism) served as the SWD in the study.

A power analysis was conducted in G*Power 3.1.9.7 to determine the minimum sample size requirement for the research (Faul et al., 2014). A power analysis was conducted for a linear regression. Applying a two-tail test with a medium effect size ($r = .30$), a significant alpha level of .05, and a power of .80, it was determined that a minimum of 55 participants would be sufficient for the data collection for a linear regression (see Figure 4).

Figure 4*Power Analysis for Linear Regression***Procedures for Recruitment, Participation, and Data Collection**

Prior to collecting data, approval was given by the Institutional Review Board (IRB) based on submission of an application with an explanation of the study and its participants. The application contained information regarding the scope of the study and the research questions process for recruitment of participants, details regarding participation, data collection tools and the process that was used to gather and analyze data for IRB review. The section below outlines important processes for recruitment, participation, and data collection.

Recruitment

Upon IRB approval from Walden University and the research site, participants for the study were recruited in several ways to ensure that all district students had the opportunity to participate on a voluntary basis. A letter to parents outlining the purpose of the research study, an overview of the study, and the role of parents and participants was emailed to all students with disabilities in grades 2-8 in the first district and mailed home to all students with disabilities in grades 2-8 in the second district. The method of delivery to families was based on approval from each participating district. A flyer regarding information on the study was placed in the main offices of all the target schools. All students who met the eligibility criteria were invited to participate. Since the study required students to self-reflect, listen, and respond to various prompts about reading self-efficacy, students who were deaf, had an intellectual disability, or a moderate to severe disability that limited their ability to fully participate in this study was excluded.

Parents or guardians who were interested in having their child participate in the study were asked to email or send back the letter stating their interest to the researcher. Included in this information was a document of informed consent. The parent or legal guardian needed to complete the consent form and return it via email or in a sealed envelope. A student-friendly letter was included in the consent form to give the student participants knowledge about the study and their role as participants. Students who participated signed and returned this form to provide assent. My contact information was given on each recruitment letter, informed consent, and student assent, which allowed families an opportunity to contact me with questions, comments, or concerns. Upon

receiving and reviewing all consent forms and documentation, copies of the forms were mailed back to the participants' parents to keep for their records.

Participation

For a student to participate in the study, families had to complete and return the parent consent letter and the student assent form. Recruitment continued until an appropriate number of participants was reached to have power. The purpose of the student-friendly assent form was to provide a child-friendly description of the study and explain the role of the child as a participant in research. The letter helped the children understand the purpose of the study and how their feedback could help provide the researcher with more information about reading. These signed documents served as informed consent. Detailed information regarding informed consent is discussed later in the ethical considerations section.

Data Collection

Demographic questions to collect data on the students' age, grade level, gender, and disability category were collected from the target districts to obtain basic information on participants for specific statistical analysis to answer the research question. Reading achievement was measured by the instructional planning report scores of the RSRA. The instructional planning report outlines a student's standard score on the assessment (SS), percentile rank (PR), and the reading standards the student needs to work on to progress toward achieving grade level standards in reading (Renaissance Learning Inc., 2020). Collection of this data identified a student's reading achievement using norm-referenced

criteria. Student reading self-efficacy was measured by student responses to the RSPS questionnaire.

The data collection process occurred in two phases. The first phase involved the completion of the RSPS questionnaire given in a one-on-one setting in the student's school. The questionnaire contained the RSPS questions outlined by Henk and Melnick (1995). The RSPS asked students to consider various statements about reading such as "I think I am a good reader" and "When I read, I can figure out the words better than other kids." These questions were aimed at determining how students perceive their reading self-efficacy. Participants selected the statement that best matches their perception of the question. Answers range from strongly agree to strongly disagree on a 5-point Likert scale.

Once all participants completed the questionnaire, the researcher coordinated with special education directors from the two school districts to obtain the RSRA data from the identified assessment periods and necessary demographic information on each participant. Data received on all students participating in the study was used to answer the research question to determine the extent to which a relationship exists between reading achievement, as measured by the RSRA and reading self-efficacy as measured by the RSPS.

Once the participant completed the RSPS the participants were thanked for sharing their thoughts. Contact information for follow-up questions, comments, or concerns was provided. Also, a description of the study, the participants' rights and confidentiality of the study was provided. There was no further follow-up for participants

upon completion of the questionnaire. Upon completion of the data collection, students were mailed a \$5 Amazon gift card as a thank you for their time and assistance with the research.

Archival Data

This quantitative, non-experimental study used archival student data to investigate the research question. Archived student RSRA data collected during the 2021-2022 and the 2022-2023 school year (dependent on the child's recruitment date) was analyzed against the results from the participants' completion of the RSPS to determine the extent to which reading achievement was related to reading self-efficacy. More specifically, the RSRA SS scores measured reading achievement. The SS score measures a student's reading ability compared to other students in the same grade nationally (Renaissance Learning, 2020). SS determined their reading achievement in comparison to other students nationally and other students in the same grade. The SS can also be used to show growth in achievement over time. This data point allowed for analysis of the data to determine if there was a significant relationship between reading achievement and reading self-efficacy for SWD in grades 2-8.

Instrumentation and Operationalization of Constructs

This quantitative research study relied on district-level, archived data from RSRA and a student completed questionnaire (RSPS) to answer the research question. The section below outlines specific information about the administration of the RSRA and the RSPS. In addition, pertinent information regarding validity and reliability is discussed.

RSPS

The RSPS tool is based on four performance categories aligned with the four-factor model outlined by Bandura's theory of self-efficacy: Progress, Observational Comparison, Social Feedback and Physiological States. The Process domain assess how an individual's perception of current reading performance compares to past performance (Henk & Melnick, 1995). Observational Comparison evaluate how a child perceives his or her reading with the reading skills of classmates and peers, while social feedback examines both direct or indirect feedback from a teacher, classmate, or family member of the child (Henk & Melnick, 1995). Lastly, Physiological States measures a child's internal beliefs and feelings while he or she is engaged in a task involving reading. The RSPS contained 1 general item and 32 subsequent items based on the four factors described above. The general item prompted the participant to begin thinking about his or her reading ability, while the remaining questions analyzed self-perceptions related to word recognition, fluency, and comprehension (Henk & Melnick, 1995). To calculate a child's overall self-efficacy in reading, the combination of scores from each subset of self-efficacy was calculated. Table 3 below provides a sampling of questions found in the RSPS.

Table 3*The Readers Self-Perception Scale Sample Questions*

Scale	Questions
Progress	I am getting better at reading. When I read, I don't have to try as hard as I used to. Reading is easier for me than it used to be.
Social Feedback	My classmates think I read pretty well. I can tell that my teacher likes to listen to me read. People in my family think I am a good reader.
Observational Comparison	I seem to know more words than other kids when I read. I read faster than other kids.
Physiological States	Reading makes me feel happy inside. I like to read aloud. I feel good inside when I read.

The RSPS tool took approximately 15-20 minutes to complete. The testing administrator explained the purpose of the assessment and worked through an example with each student so that all participants understood how to respond. Participants were encouraged to be honest and ask questions when they did not understand the directions or the questions. To answer the questions, the participants were asked to listen to each test item and rate the degree to which they agree or disagree with each given statement. Participants made their rating on a 5-point Likert scale (SD= Strongly Disagree, D= Disagree, U= Undecided, A= Agree, SA= Strongly Agree). These values correlated with a number value to calculate each participant's raw score. A score of SD equaled 1 point, a 1 while a score of SA on the other end of the scale equaled 5 points. The researcher added up the total score for all four subtests into one combined reading self-efficacy score. Appendix C outlines all the questions for the RSPS that were asked during the assessment.

The RSPS is scored by totaling the raw scores for each of the four scales. Each scale can then be interpreted relative to its total possible score (Henk & Melnick, 1995).

For example, the Progress scale has a total of 45 possible points. A score of 44 or higher indicated high self-perception, a score of 39 would indicate an average self-perception, and a score of 34 would suggest a low self-perception in that area. To assess overall self-efficacy, each individual subtest was totaled to receive one overall score that identified a students' reading self-efficacy beliefs.

RSRA

The RSRA measures a student's reading achievement at any specific point in time and can measure student growth over an extended period using benchmark testing three times annually (Renaissance Learning, 2020). The 34-item test is a standards-based adaptive test, aligned to state and national educational standards. Adaptive tests adjust the series of questions based on how the student performs on given test questions (Renaissance Learning, 2021). The goal of an adaptive assessment is to minimize the test length and reduce the frustration of the student (Renaissance Learning, 2021). The assessment takes approximately 30 minutes to administer, and participants complete the test on the computer.

The RSRA scores are based on nationally normed references which were recently updated in 2017 and provide schools with a variety of scores and reports to assist in planning instruction and identifying interventions for students in reading. These norms include both test score norms and growth norms to measure progress over time (Renaissance Learning, 2021). For the purpose of this study, the Scaled Score (SS) data points served as evidence of student reading achievement. Because the assessment has an almost unlimited number of tests questions and changes based on student progress during

the test, conversion of results to scaled scores allows for comparison of scores across students (Renaissance Learning, 2021). The analysis of the data and descriptive statistics on the sample was conducted in the Statistical Package for the Social Sciences (SPSS) program Version 27. The use of SPSS helped ensure that the data collected was analyzed accurately.

The RSRA assessment is both a reliable and valid measurement of student reading achievement. Generic reliability coefficients ranged from a Cronbach's alpha of 0.94 in grades 4 and 5, to a high of 0.96 in grade 1, indicating that the reliability for the assessment is high and relatively stable across grade levels (Renaissance Learning, 2021). Concurrent validity was measured to assess a correlation between the RSRA, and other reading tests administered during a similar time period while predictive validity estimates the extent that scores on the RSRA will predict scores on other criterion measures at a later time (Renaissance Learning, 2021). Concurrent validity coefficients ranged 0.72-0.80, which predictive validity scores ranged from 0.69-0.72, indicating that this assessment is a valid measure of reading achievement.

Data Analysis Plan

To investigate the research question, a simple linear regression was used. A linear regression analysis assesses the relationship between the predictor variable and the continuous outcome variable, reading achievement (Frankfort-Nachmias & Leon-Guerrero, 2018). This method of statistical analysis determined the relationship between reading achievement and reading self-efficacy for in grades 2-8. To evaluate and analyze the data collected during the study, SPSS version 27 software was used. Only participants

that completed all items on the questionnaire were included in the data analysis.

Following data collection, data was pre-screened to determine whether the statistical assumptions for the simple linear regression were met. If the data violated assumptions a more appropriate statistical technique was used to analyze the data. The data collected was analyzed to answer the research questions and associated hypotheses:

RQ: What is the predictive relationship between reading self-efficacy, as measured by the RSPS, and reading achievement, as measured by the RSRA for SWD in grades 2-8?

H_0 : There is no predictive relationship between reading self-efficacy, as measured by the RSPS and reading achievement, as measured by the RSRA for SWD in grades 2-8.

H_a : There is a predictive relationship between reading self-efficacy, as measured by the RSPS and reading achievement as measured by the RSPS for SWD in grades 2-8.

Prior to conducting the analysis, the data was screened and examined to ensure normality, homoscedasticity of residuals, absence of multicollinearity, and lack of outliers. Normality of residuals assumes that the residuals of the regression model are distributed in a bell-shaped curve or follow a normal distribution and will be examined with a Q-Q scatterplot of the residuals (Bates et al., 2014; DeCarlo, 1997; Field, 2017). Homoscedasticity requires that there is no underlying relationship between the residuals and the fitted values. The assumption will be examined with a scatterplot of the residuals and the fitted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). Absence

of multicollinearity assumes the predictor variables are not too highly related to one another and will be assessed using variance inflation factors (VIF). VIF values greater than 10 suggest multicollinearity is present (Menard, 2009). If outliers are detected, a studentized residual will be calculated to provide an estimate of error varying between points (Field, 2017; Pituch & Stevens, 2015).

Threats to Validity

The goal of any research study is to obtain valid conclusions about the potential relationship among the variables (Rumrill et al., 2011). It is important to note several possible threats to validity which may impact the data collection, analysis, and findings in this study. There are several potential threats to internal and external validity apparent in the scope of this study. These threats are discussed in depth below.

External Validity

External validity refers to the extent to which research findings can be generalized across contexts. Consumers of research often wish to apply findings from one study to a different population of people, a different setting, or other various conditions (Rumrill et al., 2011). It should be noted that sampling procedures in this study may pose a barrier to external validity. This study uses a purposeful sampling technique in which all SWD in the target district were invited to participate. Since the sample of students comes from one school district with a limited number of grade levels, it may be difficult to generalize these findings to students in other school districts, in other settings, and in different grade levels. Furthermore, exclusion of students with lower incidence disabilities such as

intellectual disabilities, means that the findings will not be generalizable to a portion of the population of SWD.

Internal Validity

While external validity addresses the generalizability of a study, internal validity signifies the degree to which the findings accurately represent the phenomena in question (Burkholder et al., 2016; Rumrill et al., 2011). There are several factors which may influence the extent to which a study measures what it intended to measure. There are several threats to internal validity in this study which include selection, history, and testing.

Selection

One potential threat to internal validity involves the selection of participants. Random assignment and selection of participants is often deemed the “gold standard of research” because it helps to ensure that the results are attributed solely to the variables in the study (Rumrill et al., 2011). Due to the scope and nature of the study, random sampling was not possible. The purposeful sampling technique and exclusion of certain students from the study may result in findings that are not representative of the entire population of SWD and TD peers. Therefore, it is important to examine the findings with caution and consider the sample of students in the study when evaluating the findings.

Testing

The mechanism for measuring student reading self-efficacy, a paper form, may pose another threat to internal validity. While the directions for responding to the questions are clear and concise and the participants answered a practice question using

the same format, it is possible that students did not understand the rating scale. Children were asked to respond honestly to the best of their ability, but if a child did not understand the question, is uninterested in the task, or simply circled the answers just to finish the task, the results may not be an accurate measurement of the child's perceived self-efficacy.

Ethical Procedures

As with all research, there are benefits and risks associated with participation. While using children as participants in research, there are ethical procedures and safeguards to consider ensuring their safety. Because children are not of legal age to consent to participation and their parents must provide consent for them, it is critical to examine factors of vulnerability and take action to protect the rights and safety of all child participants (Matutina, 2009). Factors of vulnerability include: (a) risk and benefit; (b) socioeconomic status; (c) informed consent; and (d) confidentiality (Matutina, 2009). A description of considerations regarding each of these factors follows in the paragraphs below.

Risk and Benefit

A cost-benefit assessment was conducted in this study to analyze the potential risks and benefits associated with participation. Participation in this study will result in minimal risk for participants. Minimal risk is defined as the extent to which "discomfort or harm that participants may experience does not exceed that which they might routinely experience in daily life or from physical or psychological tests considered routine in nature" (Burkholder et al., 2016 p. 56) Potential sources of risk include discomfort or

frustration when evaluating their own skill level in reading and possible stress related to their perceived levels of functioning as it relates to reading self-efficacy.

Despite the potential for minimal risk, there are several benefits to participation in this study. Participants will engage in a process of self-reflection and develop self-insight on their perceived beliefs about reading self-efficacy (Burkholder et al., 2016). The information rendered and analyzed through this study may provide valuable information for educators considering the role that reading performance plays in a student's perceived level of self-efficacy. This process may assist educators in making appropriate instructional decisions in reading for students.

Socio Economic Status

Socioeconomic status is another factor of vulnerability to consider. To protect children from exploitation, participation in this study will not have any financial gain for the parent (Matutina, 2009). If a monetary contribution were to be offered to participants, it may increase the likelihood that parents would provide consent with the motivation to earn money without careful consideration of the impact the study may have on the participants. For this reason, there will be no monetary gain for participating.

Informed Consent

Informed consent is a process of communication between the researcher, parents, and perspective participants (Burkholder et al., 2016). The purpose of informed consent is to provide participants with knowledge about the context of the research study and identify potential risks and benefits for participation so that individuals can make an informed decision about their potential involvement (Matutina, 2009). In addition,

informed consent should remind participants of the voluntary nature of the study and allow for refusal or discontinuation of involvement at any time without repercussions (Burkholder et al., 2016). To ensure that participants understand their role in the study and their rights as a study participant, the questionnaire began with a review of the student assent form they previously completed with his or her parent or guardian.

Participants were given as much time as needed to ask questions. If a child was appeared to be taking a long time on a question, the researcher prompted the student “Do you have any questions or do you need more time?” The researcher did not provide clarification or interpretation of the questions to any of the participants. Individuals who did not sign agreement for the informed consent and student assent were not allowed to participate in the study.

The informed consent was organized into the following sections: information about the study, participant information, and additional information. Information about the study included a description of the purpose of the study, inclusion criteria, and estimated time for completion of the questionnaire. The participants were informed that the study was voluntary, and that students could end their participation at any point in the study without retribution (Burkholder, et al., 2016). The potential benefits and risks of participation in the study as well as procedures outlining participants right to privacy were provided. Additional information, such as the researcher contact information was included in the final section.

Confidentiality

Confidentiality is a necessary consideration to ensure the safety and privacy of participants. Although the researcher obtained the names of participants in the study to match their reading achievement to their perceived level of self-efficacy, information regarding child identity is known only by the researcher. Individual participants cannot be identified by any of their responses or demographic data. Identifying information will not be shared. Consumers of the researcher will be unable to identify or infer the identify of any participants to protect the identity of the children in the study.

Summary

In this chapter, the methodology for the study was described. The sample and the sampling procedures were described along with the process for recruitment. An explanation of the data collection process was outlined. A description of the research instrumentation including the RSRA and RSPS were discussed. A plan for data analysis, threats to validity, and ethical considerations for the study were addressed. Chapter 4 details the data analysis process and results from the data collection.

Chapter 4: Results

The purpose of this study was to investigate the predictive relationship between reading self-efficacy and reading achievement for SWD in grades 2-8 in two suburban school districts in central New York. In this chapter, the results of the data analysis are presented. The research question was as follows: What is the predictive relationship between reading self-efficacy, as measured by the RSPS achievement and reading achievement as measured by the RSRA for students in grades 2-8? The hypothesis for the study was there is a predictive relationship between reading self-efficacy, as measured by the RSPS and reading achievement as measured by the RSRA for SWD in grades 2-8; the null hypothesis was that there is no predictive relationship between reading self-efficacy and reading achievement for SWD in grades 2-8. Nominal data were reported to describe frequencies and percent metrics. Means and standard deviations were used to report the information related to student reading self-efficacy and reading achievement. To address the research question, a simple linear regression was conducted to determine the extent to which a relationship existed. Statistical significance was evaluated at $\alpha = .05$.

Data Collection

During the first recruitment phase, 52 participants were recruited from the two target school districts. Fliers were distributed to families of SWD in both districts and asked to submit interest by April 15, 2022. Information was collected for the interested participants. A total of 20 participants from target district 1 signed up. The flier was distributed to 123 families of SWD. This was a response rate of 16%. A total of 32

participants from target district 2 signed up. The flier was distributed to 237 families of SWD. This was a response rate of 13.5%. For the group of students who signed up and assented during this initial recruitment round, their June 2022 benchmark RSRA data were utilized.

After the initial recruitment and data collection process, it was determined that there were not enough participants to reach the recommended statistical power of .80 associated with a minimum of 84 participants. As a result, a second round of recruitment at target district 2 was initiated to achieve statistical power. The recruitment period was open for a span of 2 weeks ending on September 22, 2023. An email with the recruitment information was sent to 93 families of SWD in grades 2-8 in target district 2. An additional 33 participants were recruited (35% response rate). The RSRA data from the September 2023 benchmark assessment period were used for reading achievement data for the second round of participants because of the lag in time between the first and second recruitment periods. Out of 360 prospective participants, 85 volunteered to be in the study (total 24% response rate). One child participant was excluded from the study due to a disability that would severely limit his or her ability to participate.

To address the research question, a simple linear regression was used to examine the predictive relationship between reading achievement and reading self-efficacy. A linear regression is appropriate to test the predictive relationship between an independent variable and a continuous dependent variable (Zumbo & Zimmerman, 1993). In this study, reading achievement was the dependent or outcome variable and reading self-

efficacy was the predictor, or independent variable. The reading achievement scores were generated from the RSRA for each participant.

Prior to the analysis, the assumption of a linear aggression was tested. The findings of the assumption testing and corresponding scatterplots are presented in the next section. Then, the findings of the regression model are reported. Statistical significance was evaluated at $\alpha = .05$.

Results

A total of 85 students were included in the study sample. A total of 20 students (23.5%) were enrolled in the first district, and 65 students (76.5%) were enrolled in the second district. SWDs were widely distributed from 2nd to 8th grade. Table 4 presents the grade levels and number of participants within each grade level for each target district. In each of the two target districts, participants from all grade levels from grade 2 to grade 8 were included in the sample size. In target district 1, 10% of the participants were in grades 2, 6, and 8; 15% each in grades 3,4, and 5; and 25% in grade 7. In target district 2, most of the students were in grade 2, at 23.1%. In addition, 12.3% were in grade 3, 15.4% in grade 4, 13.8% in grade 5, 16.9% in grade 6, 9.2% in both grades 7 and 8. The table also disaggregates data by the participants' disability category. Most participants in the study had a learning disability, with 75% of target district 1 and 61.5% of target district 2 classified as LD. Five percent of students in district 1 and 4.6% in district 2 were classified with autism, while 10% of district 1 and 20% of district 2 identified as Other Health Impaired (OHI). Less than 10% of each district had students classified with a speech and language impairment (10% in district 1 and 9.4% in district

2). One child from district 2 was classified with a visual impairment, which accounted for 1% of target district 2's participants.

Table 4

Frequencies and Percentages for School Level Variables

Variable	Target district 1 (<i>n</i> = 20)		Target district 2 (<i>n</i> = 65)		Total Sample (<i>n</i> = 85)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Grade						
2	2	10.0	15	23.1	17	20.0
3	3	15.0	8	12.3	11	12.9
4	3	15.0	10	15.4	13	15.3
5	3	15.0	9	13.8	12	14.1
6	2	10.0	11	16.9	13	15.3
7	5	25.0	6	9.2	11	12.9
8	2	10.0	6	9.2	8	9.4
Total	20	100.0	65	100.0	85	100.0
Disability						
ASD	1	5.0	3	4.6	4	4.7
LD	15	75.0	40	61.5	55	64.7
OHI	2	10.0	15	23.1	17	20.0
S/L	2	10.0	6	9.2	8	9.4
VI	0	0.0	1	1.5	1	1.2
Total	20	100.0	65	100.0	85	100.0

Note. ASD = Autism Spectrum Disorder, LD = Learning Disability, OHI = Other Health Impairment, S/L = Speech/Language Impairment, VI = Visual Impairment

Descriptive Statistics for Reading Achievement (RSRA)

Descriptive statistics were examined for the RSRA measure. The RSRA scores were based on a standard score. RSRA scores for target district 1 ranged from 615.00 to 1070.00 with $M = 923.95$, $Mdn = 941.00$, and $SD = 121.22$. The RSRA scores for target district 2 ranged from 8.00 to 1146.00, with $M = 698.08$, $Mdn = 766.00$, and $SD = 325.54$. Both the M and Mdn are considerably lower for target district 1. The SD for district 2 demonstrates greater variability and individual differences in the RSRA scores

than for district 1. This is likely due to there being three times as many participants in target district 2 than in target district 1, in addition to a greater range between the lowest and highest scores. Table 5 presents the summary statistics for the RSRA measure.

Table 5

Summary Statistics Table for Reading Achievement

Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading achievement (STAR)						
Target district 1 scores	20	615.00	1070.00	923.95	941.00	121.22
Target district 2 scores	65	8.00	1146.00	698.08	766.00	325.54
Total and Average	85	--	--	751.22	863.00	305.54

Table 6 displays the skewness and kurtosis for the RSRA. The skewness is a representation of how the data varies from a normal distribution. A negative skewness like those indicated in table 6 below explain that the normal distribution curve is skewed to the left. Kurtosis refers to the extent to which the distribution contains outliers. Negative numbers indicate that the distribution has a shorter tail (few outliers). Kline (2010) indicates that skewness and kurtosis should fall between -2.00 and 2.00 for data to meet univariate normality. The skewness and kurtosis statistics fell within the acceptable ranges for reading achievement among the overall sample and the individual target districts.

Table 6

Skewness and Kurtosis for Reading Achievement

Variable	<i>n</i>	Skewness	Kurtosis
Reading achievement (STAR)			
Target district 1	20	-0.85	0.55
Target district 2	65	-0.46	-0.97
Total and Average	85	-0.79	-0.45

Table 7*Summary Statistics Table for Reading Achievement by District and Grade Level*

Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading achievement (STAR)						
Target district 1 Total/Avg	20	615.00	1070.00	923.95	941.00	121.22
Grade 2	2	615.00	760.00	687.50	687.50	102.53
Grade 3	3	786.00	877.00	836.00	845.00	46.16
Grade 4	3	796.00	925.00	871.67	894.00	67.34
Grade 5	3	885.00	1045.00	941.33	894.00	89.89
Grade 6	2	962.00	1057.00	1009.50	1009.50	67.18
Grade 7	5	957.00	1053.00	1006.20	1007.00	44.65
Grade 8	2	1037.00	1070.00	1053.50	1053.50	23.33
Target district 2 Total/Avg	65	8.00	1146.00	698.08	766.00	325.54
Grade 2	15	8.00	882.00	354.27	327.00	291.67
Grade 3	8	461.00	958.00	747.75	792.50	169.69
Grade 4	10	422.00	1022.00	811.70	922.00	232.31
Grade 5	9	451.00	1065.00	781.56	968.00	281.37
Grade 6	11	464.00	1146.00	841.82	998.00	271.61
Grade 7	6	467.00	1109.00	826.67	927.00	285.31
Grade 8	6	225.00	1059.00	784.67	1022.00	392.40

Table 8*Summary Statistics Table for Reading Achievement by District and Disability*

Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading achievement (STAR)						
*Target district 1	20	615.00	1070.00	923.95	941.00	121.22
ASD	1	957.00	957.00	957.00	957.00	-
LD	15	615.00	1057.00	920.67	925.00	129.93
OHI	2	962.00	1070.00	1016.00	1016.00	76.37
S/L	2	786.00	894.00	840.00	840.00	76.37
Target district 2	65	8.00	1146.00	698.08	766.00	325.54
ASD	3	848.00	999.00	942.33		82.25
LD	40	8.00	1146.00	679.40		363.31
OHI	15	451.00	1109.00	750.80		232.07
S/L	6	388.00	1022.00	637.83		296.09
VI	1	283.00	283.00	283.00		-

Note. *There were no students in this district on an IEP for VI.

Descriptive Statistics for Reading Self-Efficacy (RSPS)

Descriptive statistics were reported for the RSPS measures. Reading self-efficacy composite scores for target district 1 ranged from 76.00 to 137.00, with $M = 106.55$, $Mdn = 104.50$, and $SD = 18.36$. Reading self-efficacy composite scores for target district 2 ranged from 11.00 to 144.00 with $M = 97.58$, $Mdn = 102.00$, and $SD = 26.73$. Reading self-efficacy composite scores for the total sample ranged from 11.00 to 144.00, with $M = 99.69$, $Mdn = 103.00$, and $SD = 25.20$. The descriptive statistics for both districts are fairly similar. Table 9 presents the summary descriptive statistics for the RSPS measure.

Table 9

Summary Statistics Table for Reading Self-Efficacy Scale (RSPS)

Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading self-efficacy composite						
Target district 1	20	76.00	137.00	106.55	104.50	18.36
Target district 2	65	11.00	144.00	97.58	102.00	26.73
Total/Average	85	--	--	99.69	103.00	25.20

The skewness and kurtosis statistics fell within the acceptable ranges for reading self-efficacy among the overall sample and the individual target districts. This indicates that there is a normal distribution of scores for reading self-efficacy. Table 10 presents the skewness and kurtosis statistics for reading self-efficacy.

Table 10

Skewness and Kurtosis for the Reading Self-Efficacy Scale (RSPS)

Variable	<i>n</i>	Skewness	Kurtosis
Reading Self-Efficacy (RSPS)			
Target district 1	20	0.10	-1.22
Target district 2	65	-0.73	0.65
Total/Average	85	-0.77	0.92

Table 11*Summary Statistics Table for Reading Self-Efficacy Scale by District and Grade Level*

Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading self-efficacy composite						
Target district 1 (district avg)	20	76.00	137.00	106.55	104.50	18.36
Grade 2	2	121.00	129.00	125.00	125.00	5.66
Grade 3	3	91.00	133.00	106.33	95.00	23.18
Grade 4	3	76.00	128.00	103.00	105.00	26.06
Grade 5	3	94.00	104.00	98.00	96.00	5.29
Grade 6	2	91.00	137.00	114.00	114.00	32.53
Grade 7	5	80.00	119.00	98.20	92.00	16.21
Grade 8	2	117.00	123.00	120.00	120.00	4.24
Target district 2 (district avg)	65	11.00	144.00	97.58	102.00	26.73
Grade 2	15	11.00	140.00	97.93	103.00	33.99
Grade 3	8	58.00	123.00	99.63	105.50	23.99
Grade 4	10	36.00	144.00	106.20	113.50	32.99
Grade 5	9	70.00	136.00	101.56	101.00	21.19
Grade 6	11	75.00	133.00	99.91	99.00	19.52
Grade 7	6	70.00	118.00	93.00	93.50	17.78
Grade 8	6	54.00	111.00	74.00	67.50	21.42
Total and Grand Averages	85	11.00	144.00	99.69	103.00	25.20

Table 12*Summary Statistics Table for Reading Self-Efficacy Scale by District and Disability*

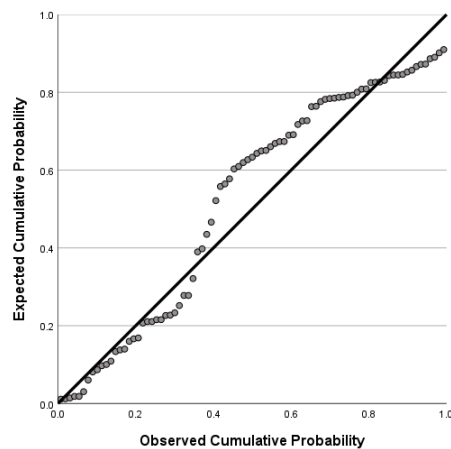
Variable	<i>n</i>	Min	Max	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Reading self-efficacy composite						
Target district 1 (district avg)	20	76.00	137.00	106.55	104.50	18.36
ASD	1	111.00	111.00	111.00	111.00	-
LD	15	76.00	133.00	104.40	96.00	19.17
OHI	2	117.00	137.00	127.00	127.00	14.14
S/L	2	95.00	105.00	100.00	100.00	7.07
Target district 2 (district avg)	65	11.00	144.00	97.58	102.00	26.73
ASD	3	70.00	140.00	105.00	105.00	35.00
LD	40	45.00	136.00	98.68	98.50	23.31
OHI	15	36.00	123.00	92.07	104.00	27.65
S/L	6	97.00	144.00	114.83	112.50	16.94
VI	1	11.00	11.00	11.00	11.00	-
Total and Grand Averages	85	11.00	144.00	99.69	103.00	25.20

Assumption Testing for Simple Linear Regression

The statistical assumptions of a simple linear regression were verified. The first assumption is that the dependent variable is a continuous-level measurement. Reading achievement scores, the dependent variable, was a continuous-level measurement. The second assumption is that the independent variable is a nominal, ordinal, or continuous-level measurement. Reading self-efficacy scores, the independent variable, was a ordinal-level measurement. The third assumption is normality of the residuals. The normality assumption was tested with a normal P-P scatterplot. The data in the scatterplot followed the normality trend, with some deviations (see Figure 5). Howell (2013) indicates that violations of normality are not problematic when the sample size exceeds 50 cases.

Figure 5

Normal P-P Scatterplot for Regression with Reading Self-Efficacy Predicting Reading Achievement

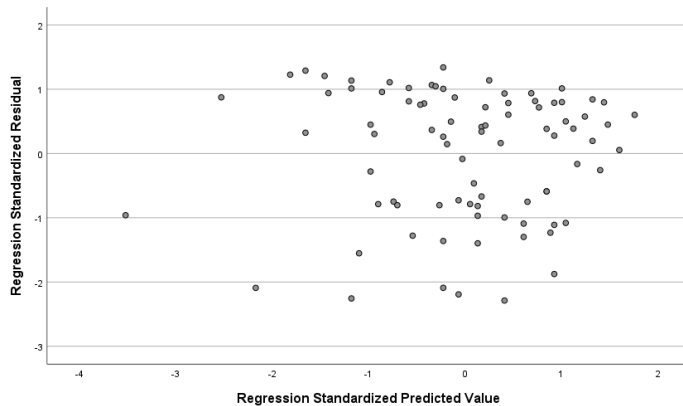


The fourth assumption is homoscedasticity. The homoscedasticity assumption was tested with a residual scatterplot. There was not a recurring pattern in the residual

scatterplot (see Figure 6 below), indicating that the assumption of homoscedasticity was supported.

Figure 6

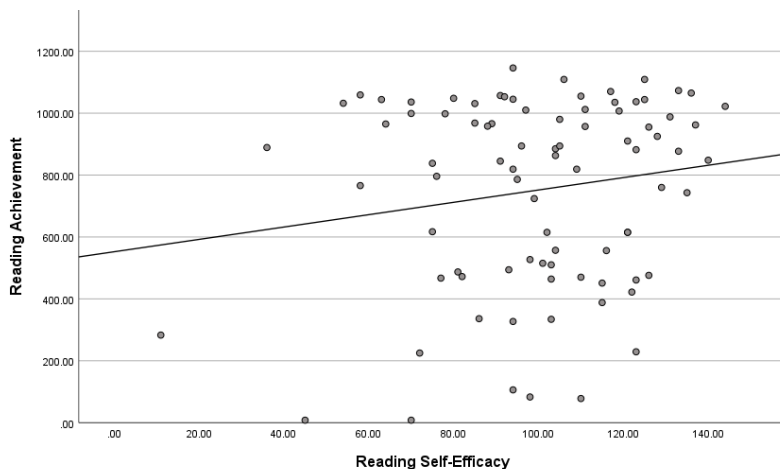
Residuals Scatterplot for Regression with Reading Self-Efficacy Predicting Reading Achievement



The fifth assumption, linearity, was tested with a scatterplot between reading self-efficacy and reading achievement. As depicted in the scatterplot (see Figure 7 below), there appeared to be a positive trend between reading self-efficacy and reading achievement. All five assumptions of a linear regression were supported; therefore, the analysis proceeded as proposed.

Figure 7

Scatterplot Between Reading Self-Efficacy Predicting Reading Achievement



Simple Linear Regression

RQ: What is the predictive relationship between reading self-efficacy, as measured by the *RSPS*, and reading achievement, as measured by the *RSRA* for students in grades 2-8?

H_0 : There is no predictive relationship between reading self-efficacy and reading self-efficacy for students in grades 2-8.

H_a : There is a predictive relationship between reading self-efficacy as measured by the *RSPS* and reading self-efficacy, as measured by the *RSRA* for students in grades 2-8.

To address the research question, a simple linear regression was used to understand the relationships between reading self-efficacy and reading achievement. The findings of the linear regression model were not statistically significant, $F(1, 83) = 2.31$, $p = .132$, $R^2 = .027$, indicating that reading self-efficacy did not have a predictive

relationship on reading achievement. Approximately 2.7% of the variance in reading achievement could be explained by reading self-efficacy. Alternatively, 97.3% of the variance in reading achievement could *not* be accounted for or explained by reading self-efficacy. Due to non-significance of the regression model, the null hypothesis (H_0) was not rejected. Table 13 presents the findings of the simple linear regression.

Table 13

Simple Linear Regression between Reading Self-Efficacy and Reading Achievement

Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Reading self-efficacy	2.00	1.31	.17	1.52	.132

Note. Overall model fit: $F(1, 83) = 2.31, p = .132, R^2 = .027$

Summary

The purpose of this study was to investigate the predictive relationship between reading self-efficacy and reading achievement for SWD in grades 2 through 8 in two suburban schools in central New York. In this chapter, the results of the data analyses were presented. Descriptive statistics were used to identify trends in the demographics and variables of interest. To address the research question, a simple linear regression was conducted. The findings of the linear regression model were not statistically significant, which indicates that reading-self efficacy did not significantly predict reading achievement for SWD in grades 2-8 in the target districts. Therefore, the null hypothesis for the research question was not rejected. In the next chapter, the implications of the findings are discussed. The limitations and recommendations for future research are provided.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to determine if reading self-efficacy predicts reading achievement for SWDs in two suburban school districts in central New York. The study was conducted to inform educators about the potential impact of reading self-on reading achievement. While there was an abundance of literature related to self-efficacy, prior peer-reviewed literature investigating the relationship between reading self-efficacy and reading achievement was limited to the population of general education students.

The goal for this study was to determine if the reading self-efficacy of SWD in grades 2-8 would predict their reading achievement scores on the RSRA. The linear regression analysis was not statistically significant, which indicates that reading self-efficacy does not predict reading achievement for students with disabilities. The following section includes an interpretation of the findings from the study, limitations of the study, recommendations for further research, and implications of the data and findings.

Interpretation of the Findings

The peer-reviewed literature on self-efficacy and reading achievement reviewed in Chapter 2 was predominately related to general education students. Shehzad et al. (2019) determined that a predictive relationship existed between reading achievement and reading self-efficacy for general education students (Carroll & Fox, 2017; Yang et al., 2018). Yang et al. (2018) found that reading self-efficacy can be a greater predictor of reading success than the amount of time children spent reading, the number of books they

read, parent involvement, and student motivation. While this study contributes to the body of knowledge on the role of reading self-efficacy related to performance, effort, and motivation, the findings are not generalizable to SWD. Most of the findings reported in the previous literature came from studies with typically developing students (Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Shezad et al., 2019, Usher et al., 2018; Yang et al, 2018).

Despite the body of research indicating the importance of a reader's self-efficacy in their reading skills and motivation (e.g., Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Shezad et al., 2019, Usher et al., 2018; Yang et al, 2018), the findings from this study largely contradicted these earlier findings. It is probable that reading self-efficacy do not influence reading achievement given the nature of disabilities and the academic limitations of SWD. As the findings from this study demonstrated, there was no significant relationship between reading self-efficacy and reading achievement.

While these findings contradict earlier studies demonstrating a relationship between reading self-efficacy and general education students, self-efficacy may not be enough to mitigate the impacts of a child's disability. For students with learning disabilities, self-efficacy does not improve levels of reading achievement. This may be a result of multiple factors including motivation, challenges with academic tasks, and poor achievement. SWD, particularly those with disabilities in reading, often demonstrate repeated failure, which may decrease their motivation to learn and lead to decreased engagement with reading tasks (Benware & Deci, 1984; Lee & Zentall, 2012; Valas & Sovik, 1993). Effects related to instrumentation factors, such as poor test taking skills,

poor reading comprehension skills, and difficulties assessing the validity of a child's self-efficacy are additional factors that may have influenced the findings.

Bandura's theory of self-efficacy was the theoretical framework guiding this study. The theory posited that self-efficacy positively influences overall academic achievement and the motivation to learn (Bandura et al., 1996). Several previous studies determined that reading self-efficacy beliefs predicted reading achievement for general education students (Carroll & Fox, 2017; Lee & Jonson-Reid, 2016; Usher et al., 2018; Yang et al., 2018). Based on Bandura's theory of self-efficacy and the current literature, it was hypothesized that reading self-efficacy would significantly predict a student's reading performance. However, the results from this study did not demonstrate congruence with Bandura's theory of self-efficacy. The predictive value of reading self-efficacy on reading achievement was not found with the special education population in this study.

Limitations of the Study

There were several limitations when evaluating the validity and reliability of the study. First, a simple linear regression analysis accounts only for the influence of one predictor variable, reading self-efficacy, on the dependent or outcome variable, reading achievement. The data from the study indicated that over 97% of the variability in reading achievement was due to extraneous factors. This study was limited to examining only reading self-efficacy and did not consider any additional predictive variables that might help explain how self-efficacy is related to reading achievement. While this is an overwhelming percentage of variability, it highlights the need for additional research to

examine these other factors. A study evaluating other variables may help positively impact reading achievement.

Another limitation is the age group of the participants in the study. The students ranged in age from 7 to 14. Lindeblad et al. (2016) found that younger students do not possess the self-perception skills to make accurate assessments of their own performance and reading ability. In total, 75% of the participants rated their reading abilities as strong, despite being identified as students with severe reading deficits. Low achieving students may exhibit an overinflated sense of skills in which they believe their outcomes will be stronger than they actually will be (Shell et al., 1995).

Meltzer et al. (2004) found that students with learning disabilities were more likely to rate their effort toward reading and use of reading related strategies much higher than their teachers rated them. These students may perceive that they can accomplish reading tasks successfully, when in fact, they do not possess the required skills. In this study, 55 of 85 participants were classified as students with learning disabilities (approximately 65%). Given the findings from previous research, these factors should be considered as potential limitations of the current study.

This study did not examine reading instruction between the target school districts. It did not consider the impact of curriculum and targeted reading instruction on reading self-efficacy beliefs. Each district uses different instructional programs and has variability between instructional time, teacher effectiveness, and student demographics that may influence these scores. The study did not control for covariates such as reading comprehension skills or oral reading fluency rates.

A threat to generalizability of the results was that the sample was composed of students in second through eighth grade. This may prevent generalizability to a wider range of ages for SWD. Also, there is a wide age-range between children in grade 2 and 8. This could amount to significant differences in reading self-efficacy scores. These limitations should be considered when analyzing the validity and generalizability of the study.

Recommendations

There are several recommendations for future research that would further contribute to the body of knowledge on reading self-efficacy and reading achievement for SWD. While this study did not determine that reading self-efficacy predicts reading achievement for SWD, researchers may need to examine other variables that may have a significant and measurable impact on reading achievement for SWD. It is important for researchers to continue to examine how to best meet the diverse and unique needs of SWD so educators can make informed decisions to improve reading outcomes for SWD.

The present study examined reading self-efficacy as a composite score. The data from each of the four areas on the RSPS (perception of progress, observational comparison, social feedback, and physiological states) were combined to generate a composite score. While a statistically significant relationship did not exist between the composite self-efficacy score and reading achievement for SWD, this study did not disaggregate each individual area of self-efficacy. Further study would determine if one or more areas predict reading achievement. Since numerous studies emphasize the value of self-efficacy related to reading performance, it is not advisable to ignore those

findings. Rather, researchers need to conduct additional research to determine what if a specific aspect of self-efficacy is reading achievement for SWD.

Another recommendation for further study is to condense the grade span into smaller populations. Because there is ample research that suggested a significant relationship between reading self-efficacy and reading achievement, it may be helpful to examine differences in self-efficacy between older and younger populations of students. For 285 participants in the middle of grade 1, reading self-efficacy predicted lower task avoidance and higher reading fluency at the end of grade 1 (Ronimus et al., 2023). Schober et al. (2018) found small correlations between reading self-efficacy and reading achievement for a large population of secondary aged students. These studies, in conjunction with others highlighted in the literature review, suggest that further research should be conducted to understand why there was not a statistically significant relationship between reading self-efficacy on reading achievement for SWD. Most of the studies reviewed in the literature do not focus on the role of a child's disability and their self-efficacy beliefs.

Implications

There are several implications for this quantitative study, which aimed to determine if reading self-efficacy predicted reading achievement for SWD. Although it was determined that reading self-efficacy did not predict reading achievement for the 85 SWD in grades 2-8 in this study, there are still crucial implications to consider. Implications for the impact on positive social change will be discussed. In addition, information regarding the methodological implications will be described. Lastly, a few

suggestions for utilizing the findings from this study in practice in the field of education will be discussed. Given that the findings from this study do not support the hypothesis that reading achievement for SWD can be predicted from reading self-efficacy, educators may wish to look at variables that have been shown to have a positive relationship with reading achievement.

Social Change

While the results from this study contradict previous findings that reading self-efficacy predicts reading achievement (e.g., Carroll & Fox, 2017; Cho et al., 2015; Unrau et al., 2018; Usher et al., 2018), these findings can impact positive social change for SWD in the area of reading. The findings may inform educators to focus on other critical factors of reading achievement, such as explicit phonics instruction, phonological and phonemic awareness, differentiated instruction, teacher professional development, vocabulary instruction, and oral reading fluency. The emphasis on high impact variables would allow teachers to address areas that research suggests promotes the largest gains in reading achievement for SWD. Because instructional time in the classroom is limited, educators would be better served utilizing their time with academic variables that have been proven to create large student gains in reading. SWD in reading require intensive intervention in addition to high-quality, grade level reading instruction to avoid creating further achievement gaps as suggested by the Matthew effect (Stanovich, 1986).

For example, Didion et al. (2020) conducted a meta-analysis of 28 studies and found that teacher professional development has a significant positive impact on reading achievement for both elementary and high school students. It is important for schools to

prioritize professional development opportunities that emphasize skills and strategies to increase reading achievement for SWD. More specifically, teachers who implemented evidence-based teaching practices in reading instruction such as building vocabulary, integrating writing, and developing critical thinking skills translated to positive reading achievement outcomes for students (Cantrell et al., 2023). With decoding texts, many studies found large effect sizes for reading achievement, for students who received explicit phonics instruction (Dessefontet et al., 2019; Theobald et al., 2022). As states and higher education begin to look more closely at reading outcomes and factors that impact reading achievement, it is critical to look at how explicit, systematic phonics instruction can equip students with the skills needed to determine the words in the page to make meaning from them and to read for understanding and content knowledge.

This study may also encourage educational researchers to examine the possibility that for SWDs, there are other variables that have not been considered that have a greater impact on reading achievement. These variables include explicit phonics instruction, teacher professional development, phonological and phonemic awareness, differentiated instruction, vocabulary instruction, and oral reading fluency. As the number of SWD in schools across New York and the country is rapidly increasing, a need to better understand how to build fluent and proficient readers is needed. In 2018, 9.5% of students ages 6-21 were classified with a disability in the United States. Similarly in New York State, 12.4% of students were identified as SWD (U.S. Department of Education, 2020). That number is a substantial 27.2% increase from 2009. The COVID-19 pandemic has only heightened the awareness and increased the need for special education related

services for students. In 2022, the average NAEP reading score for SWD in NYS was 179, in the basic level. By comparison, the proficiency score was 238. It is evident that reading instruction and intervention in NYS needs to change to meet the diverse need of students. Further research is needed to determine how self-efficacy and other critical factors influence attainment and proficiency of critical reading skills.

Methodological Implications

While the present study contributes to the limited body of research on reading self-efficacy and SWD, it leaves ample opportunity for additional inquiry. In predictive correlational analyses, simple linear regression is appropriate when there is only one independent variable (Frankfort-Nachmias & Leon-Guerrero, 2018). Linear regressions determine if an independent variable predicts an outcome. When looking at relationships or correlational data, it is likely there are multiple variables or factors that influence or predict an outcome. While a correlational study can help determine whether two variables are related in time and space, causal inferences cannot be drawn between variables. The findings suggest that reading self-efficacy and reading achievement may not be associated variables to consider for SWD or that they are moderated or mediated by other important “active ingredient” variables that were not considered or identified for this study. It may be useful to dig deeper into the literature on this topic to identify those possible variables run a multiple regression model. A multiple regression analysis can examine two or more independent variables concurrently or sequentially. This model will provide additional information on variables or factors that impact reading achievement for SWD.

Conclusion

The purpose of this chapter was to interpret the findings of the study by describing how the results of this study disconfirm and extend knowledge on the role of reading self-efficacy and reading achievement for SWDs. Recommendations for future research and implications of the findings for practice and positive social change were discussed. Although there was not a statistically significant relationship between reading self-efficacy and reading achievement for SWDs, these results do not preclude the value of understanding how students perceive themselves as readers. For SWD, self-efficacy alone is not enough to improve reading outcomes. Further research should examine other variables that have a greater effect on reading achievement for SWD so that educators can provide instruction that allows for maximum student growth and progress in reading. With more research focused on the academic needs of SWD, educators can positively impact reading outcomes and self-perceptions on academic achievement.

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Appendix A: The Readers Self-Perception Scale

Listed below are statements about reading. Please read each statement carefully.

Then choose the letters that show much you agree or disagree with the statement. Use the following:

SA=Strongly Agree

A=Agree

U=Undecided

D=Disagree

SD=Strongly Disagree

Example: **I think pizza with pepperoni is the best.** SA A U D SD

If you are *really positive* that pepperoni pizza is best, choose SA (Strongly Agree)

If you *think* that pepperoni pizza is good, but maybe not great, choose A (Agree)

If you *can't decide* whether or not it is best, choose U (Undecided)

If you *think* that pepperoni pizza is not all that good, choose D (Disagree)

If you are *really positive* that pepperoni pizza is not very good, choose SD (Strongly Disagree)

- | | | | | | |
|--|----|---|---|---|----|
| 1. I think I am a good reader. | SA | A | U | D | SD |
| 2. I can tell that my teacher likes to listen to me read (SF). | SA | A | U | D | SD |
| 3. My teacher thinks my reading is fine (SF). | SA | A | U | D | SD |
| 4. I read faster than other kids (OC). | SA | A | U | D | SD |
| 5. I like to read aloud (PS). | SA | A | U | D | SD |

Appendix B: IRB Extension

Dear Jessica Maine,

This e-mail serves to inform you that your request to have an extension for the study # 03-29-22-0750755 has been approved. You thus have one year to gather the data for your study and your new expiration date is June 12, 2024. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you need to collect data beyond the new approval expiration date. Also attached to this e-mail is the revised consent form which contains the new IRB expiration date. If this consent form is already in an on-line format it will need to be revised to reflect the new expiration date.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

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