Secondary Students with Special Needs:

Is *LANGUAGE!* Effective in Closing the Reading Gap?

by

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I dedicate this research to my family and future grandchildren.

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ABSTRACT

The purpose of the research project was to determine if the use of *LANGUAGE!*, a curriculum-based reading program had been effective in closing the reading gap for high school learners with special needs, which included specific learning disabilities (SLD), intellectually delayed (ID), functionally delayed (FD), and language impaired (LI) through direct instruction. The *LANGUAGE!* reading program was designed for adolescents at risk for reading delays (Green, 1995) and struggle with reading. *LANGUAGE!* includes direct instruction in phonemic awareness, letter-sound correspondence, reading, writing, spelling, grammar, language, and vocabulary skills in every lesson within the unit (Joseph & Schisler, 2009; Scheffel, et al., 2003).

Over the last 40 years, the achievement gap has increased from 10% to 40% among high school students (Reardon, 2011). The need for students to be able to read the text in school has been considered important, but through the years some students have fallen behind and acquired a reading gap, thus making this an area of major concern for most high schools.

Extant data for this research study were collected using the *LANGUAGE!* curriculum-based reading program from the calendar school year of 2016-2017, which provided Lexile and reading fluency raw scores. Participants included in this study were 9-12 grade students from four high schools in one school district in Tennessee using the *LANGUAGE!* curriculum-based reading program as a reading intervention program for students with special needs and taught by special education teachers. Raw scores were collected from the Language Reading Scale (LRS) benchmarks that are administered in the fall, winter, and spring each school year. Raw scores were also collected from the

Test of Silent Word Reading Fluency (TOSWRF) benchmarks that are administered in the fall, winter, and spring each school year. There were 170 participants that qualified for the LRS group and 128 participants that qualified for the TOSWRF group from four high schools. Multiple repeated measures ANOVA were conducted to answer four research questions. 1) What effect does *LANGUAGE!* have on closing the reading gap for secondary students with special needs? 2) Were there significant gains in Lexile scores while using the *LANGUAGE!* reading program? 3) Was there a significant improvement of a specific assessment AB, CD, or EF? 4) Was there a significant overall difference of growth among the four high schools?

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LIST OF ABBREVIATIONS/ACRONYMS

BRI	Basic Reading Inventory
CSR	Collaborative Strategic Reading
FD	Functionally Delayed
GORT-3	Gray Oral Reading Tests
ID	Intellectually Delayed
LD	Learning Disability
LI	Language Impaired
LRS	Language Reading Scale
MAST	Multilevel Academic Survey Test
MR	Mental Retardation
NLTS-2	National Longitudinal Transition Study-2
PALS	Peer Assisted Learning Strategy
PIAT-R	Peabody Individualized Achievement Test
PLC	Professional Learning Communities
POSSE	A reading strategy: *p*redicting ideas, *o*rganizing ideas, *s*earching/*s*ummarizing main ideas, and *e*valuating
RAP	Read-Ask-Paraphrase Strategy
RTI	Response to Intervention
RTI^2	Response to Intervention Squared
SLD	Specific Learning Disability
TOSWRF	Test of Silent Word Reading Fluency
TWS	Test of Written Spelling

WJ-R	Woodcock-Johnson Revised
WJ-RACH	Woodcock-Johnson Tests of Achievement Revised
WRAT-R	Wide Range Achievement Test
WRAT-3	Wide Range Achievement Test-3
WIAT	Wechsler Individual Achievement Test
WRMT	Woodcock Reading Mastery Test

CHAPTER 1

INTRODUCTION

Over the last 40 years, the achievement gap has increased from 10% to 40% among high school students (Reardon, 2011, as cited in Leu, 2014). The need for all students, especially students with special needs, to be able to read the text in school has been considered important, but students have gradually fallen behind and acquired a reading gap, thus making this an area of major concern for high schools. Greene (1998) stated that education became more literature-based, forgetting that students needed to learn how to read before they could read literature. While in middle school, students who had not learned to decode could figure out words by looking at the pictures in the textbooks, but once students entered high school, this strategy became ineffective. Few middle and high school educators are trained to teach reading. While they may teach with reading strategies, these strategies do not teach students how to read because students should already have a foundation for literacy (Greene, 1998).

Teaching reading has always been a component of the curriculum in elementary schools and middle schools. It can be argued that teaching reading is not a new concept. However, the process of including reading in the secondary curriculum is a new concept (Lenski, 2012). With reading being taught in the earlier grades, it has been assumed that students could read at/or close to grade level (Christie, 2008). Many students arriving at the secondary level, however, are not reading close to/or at grade level, thus posing a problem for secondary teachers who do not feel equipped to teach reading (Christie, 2008; Joseph, 2008). Approximately 35% of the nation's 12th graders were reading below

grade level and approximately 70% of high school students need some form of reading remediation (National Assessment of Educational Progress, 2011, as cited by Polkinghorne & Arnet-Harwick, 2014). These statistics have not changed significantly from the report from a 1995 National Education Goals Panel report (as cited by Joseph, 2008), with only 34% of students in the twelfth grade reading proficiently. The vast majority of high school teachers have been trained or prepared to teach a content area and not to teach reading. For example, high school English teachers have been trained to teach literature concepts but not how to teach students to decode or to read with fluency. In like manner, math teachers have been trained to teach algebra problems but not how to read a word problem. While acquiring teaching degrees, secondary teachers are seldom/rarely trained or prepared to teach reading or how to intervene when a student is identified as reading below grade level (Christie, 2008). The training of secondary teachers needs to begin with preservice teachers. Lesley (2011) found preservice teachers were not concerned about meeting the needs of the struggling reader through the content areas. Preservice teachers indicated that they wanted to know how to motivate the smarter students, not just the slower students. These teachers planned to ignore struggling students and reserve questions for smarter students. Preservice teachers' mindset needs to be changed and for the preservice teachers to believe they are capable and responsible for teaching reading in the content area. For example, content area teachers from a career and technical education (CTE) program support the integration of reading skills but believe it is the responsibility of English teachers to teach these skills (Jorgenson, 2000; Polkinghorne & Arnett-Harwick, 2014). Secondary English teachers have no more training in teaching reading skills than the content area teachers (Meltzer,

2002; Polkinghorne, et al., 2014). According to Christie (2008), content-area teachers did not receive the necessary preservice training to teach reading skills, although this preparation is now being implemented in teacher preparation programs. Considering this lack of preparedness, it is crucial that teachers are offered professional development that would allow them to utilize new strategies to teach reading through the content area. Professional development promotes collaboration among the staff and allows specific roles to be assigned that would support reading in the content area.

Teachers have not focused on teaching reading to the secondary student due to issues with scheduling and compliance that are incorporated in a secondary setting (DiGisi, 2010; Fuchs, Fuchs, & Compton 2010; Joseph, 2008). Compliance refers to the number of credits secondary students must obtain for graduation requirements. Teachers and administrators now realize there is a significant difference between teaching reading on the elementary level and teaching reading on the secondary level (Vaughn & Fletcher, 2010; Fuchs, et al., 2010). Parental involvement at the elementary level is more significant than parental involvement at the secondary level. Elementary school focuses on teaching reading skills while secondary teachers expect students to know and use these skills (Allington, 2002, as cited in Dieker & Little, 2005; Munoz, 2007). Students in elementary school are taught basic reading skills focusing on learning how to read and are taught the foundations of what they will need to further their education. These basic skills include reading fluency, reading comprehension, spelling and writing, vocabulary, and grammar. These basic skills are necessary to read text effortlessly and to infer meaning from what is read, but the skills for reading to learn are considered advanced skills which are needed on the secondary level (Joseph, 2008). Secondary teachers can

center classes around student discussion and observe the students using foundations they learned in elementary school to flourish and advance. According to Fuchs, et al. (2010), struggling readers entering high school have lost self-confidence, self-efficacy, and do not want to be recognized as having a reading deficit. Thus, these students have developed the mindset that they will not be successful due to their reading issues. Reading problems that are not addressed become cumulative and negatively affect the self-esteem of the students (Christie, 2008) and the students developed a fixed mindset believing that their reading problems cannot be changed (Rattan, Savani, Chugh, & Dweck, 2015). Students who do not read proficiently on grade level have not learned the meanings of many content words or academic words from their reading which results in not developing their own vocabulary (DiGisi, 2010). Secondary reading programs are essential in assisting students to gain the skills needed, such as decoding and fluency, as well as the broader skills needed to enable students to become self-motivated readers (Munoz, 2007). Thus, teaching reading is essential at the secondary level and students must be more motivated to become independent readers (Joseph, 2008).

Significance

While reading fluency and decoding is a high priority for all students, it is especially meaningful for secondary students of special needs to improve overall academic achievement. Reading fluency enables a student to read phrases and sentences smoothly with expression and to decode words as the student reads a passage (Rasinski, 2006, as cited in Goering & Baker, 2010). Decoding is the process of translating a word into a sound, which is sometimes called word attack skills. Reading fluency is defined as "reading with appropriate accuracy and rate but also with good and meaningful phrasing

and expression" (Rasinski, Padak, Mckeon, Wilfong, Friedauer, & Heim, 2005, p. 27). The lack of decoding abilities slows readers down, interrupts the fluency, and prevents readers from interpreting the meaning as they try to comprehend what they are reading. Subsequently, reading comprehension issues develop, which cause the reader to have difficulty remembering the meanings of the passage or even chapters in the text or books, which creates achievement gaps in student learning (Rasinski, et al., 2005). Fluency should be achieved as early as possible for the student's reading development. Absence of fluency leads to a deficit in comprehension. However, students can develop fluency with practice, (Raskinski, et al., 2005).

Without fluency or decoding skills, students use cognitive energy that distracts from the task of comprehending the text (LaBerge & Samuels, 1974; Raskinski, et al., 2005). For students to have adequate reading comprehension ability, they must have cognitive skills, and they must be able to remember previous information while processing new information in order to understand what they have read. Students should be able to form a mental image of what is being said within the passage or text that they are reading. Kendeou, van den Broek, Helder, and Karlsson, (2014) noted that the cognitive process of reading comprehension has two categories. The lower-level category involves decoding the language, and the higher-level category combines meaning and mental image. As the student continues to read, a new vision of cognitive processing begins. For the struggling reader, it is crucial for teachers to determine where the cognitive process has failed (Kendeou, et al., 2014). Therefore, teaching reading on the secondary level for all students, especially students with special needs, is crucial and can be done through intervention. According to Fuchs et al., (2010), providing students the

opportunity to overcome their academic deficits in reading allows the students to look forward to learning and helps them realize that they can learn.

Secondary schools are increasingly incorporating intervention to help prevent failure among the adolescent student (Wilson, Faggella-Luby, & Wei, 2013). Remedial reading programs are not readily available to high school students, and high school teachers are not sure how to teach students who are struggling readers (Joseph 2008; Olson & Platt, 2004). The challenge is to find programs and materials that are of high interest for the secondary student and written at their working grade level (Joseph, 2008).

Teaching reading on the secondary level is challenging. Unfortunately, adolescents do not grow out of reading problems, and their problems persist with spelling, word recognition, reading comprehension, and reading fluency (Lovett, Lacerenza, De Palma, & Frijters, 2015). According to Parker, Hasbrouck, and Denton (2002), students have developed poor comprehension for several reasons: failure to understand key words and key sentences, failure to understand how sentences relate to one another, failure to understand how the information fits together, and the failure to maintain interest or concentration. Reading comprehension instruction is helpful for all students but especially for students with learning disabilities (Klinger, Urbach, Golos, Brownell, & Menon, 2010; Vaughn, et al., 2000). Struggling readers that enter high school more than likely have a low self-efficacy about their reading due to their deficit. Students who have a low self-efficacy about their reading often are resistant to reading or are even unconcerned about learning to read (McCabe & Margolis, 2001). Students with low self-efficacy tend to avoid difficult task and worry about the consequences of their failure (Bandura, 1997). Efficacy influences how students feel about themselves as well

as what motivates them. If a student continues to have self-doubt, it will be difficult for them to have success (Bandura, 1993). To help these struggling readers to become proficient and highly motivated, it is incumbent upon the teacher to continuously work to help change these students' outlook on their self-efficacy and growth mindset about reading (McCabe & Margolis, 2001). Students need to be persuaded to believe in themselves (Bandura, 1997) and that they can overcome their obstacle of being a struggling reader. This is part of changing a student's growth mindset that their reading can be developed over time. A student with a growth mindset seeks to learn as well as develop their abilities through hard work and determination to be successful (Rattan, et al., 2015) which improves their self-efficacy. The difficulty of changing a student's self-efficacy and growth mindset comes with challenges. One challenge is the difference between a students' reading ability and the level of the high school text. Special needs students with a reading deficit are reading on a fourth or fifth grade level and are attempting to read high school text that are written on grade level or even higher (Mastropieri, Scruggs, & Graetz, 2003). Struggling readers in high school have generated gaps in their decoding skills and letter-sound knowledge (Lovett, Lacerenza, De Palma, & Frijters, 2015). High school content textbooks introduce in-depth, complicated material with little explanation and pacing guidelines due to end-of-course testing (Mastropieri, et al., 2003). Therefore, teaching reading in the high school is necessary and challenging.

These challenges mandate that teachers be creative in teaching reading to the adolescent through instructional modifications. Teachers have to be careful with modifications due to possibly leading a student to become even further behind. For

example; a struggling student may only be required to spell fewer words than their peers on a spelling test or only has to read a portion of a book their peers are reading or be assigned a simpler book to read. Other modifications would be outlining instead of writing an essay, completing a project instead of writing a report, or giving a word bank for choices on a test. It is also necessary to implement numerous strategies. Instructional modification allows teachers to modify the content to be more accessible to the students, whereas strategy instruction provides the students with the tools to decode the information themselves (Kim, Linan-Thompson & Misquitta, 2012). Before teachers begin teaching reading comprehension strategies, struggling readers should be taught to become fluent readers (Swanborn & Glopper, 2002). The common problem for reading fluency is that students lack the ability to read sight words, decode words, read phrases and sentences automatically with speed. Reading fluency is an essential and critical skill that all students need.

Chard, Vaughn, and Tyler (2002), determined that fluency appears to be important for students with significant reading problems. Slow, choppy oral reading is an indicator of students who read with numerous pauses. Repeated reading interventions demonstrated improvement in reading rate, accuracy, and comprehension with the struggling readers. Students need to be able to read with speed if they are going to make the connection between ideas. Fluency and comprehension may also be improved by providing struggling readers with text in chunks or phrases. Developing fluency is a necessity for a struggling reader, and teachers should consider several interventions and strategies to better develop teaching methods designed to improve fluency.

Therrien (2004), stated that repeated reading is an evidenced-based strategy that can be used to increase reading fluency and comprehension. Repeated reading can also be used effectively with nondisabled students and students with learning disabilities. This strategy can be used to increase reading fluency and reading comprehension. Slow decoding skills impede the flow of thought and hamper comprehension; therefore, fluency may stem from problems of decoding or dividing sentences into meaningful phrases. Repeated reading as a strategy has shown an increase in fluency and comprehension. Students that were cued to focus on speed and comprehension showed an increase in fluency and comprehension. Modeling as a strategy also showed an increase in fluency and comprehension.

Chard, et al., (2002) stipulated that repeated reading improves the reading fluency and comprehension of both nondisabled students and students with learning disabilities. The analysis indicated that repeated reading was an effective strategy for improving reading fluency and comprehension on a passage that is read repeatedly. According to Therrien (2004), students that reread a passage demonstrated a more fluent pace and comprehended the passage better. Additionally, students who were cued on what they were reading for their comprehension remembered more.

Gajria, Jitendra, Sood, and Sacks (2007) conducted research reviewing 29 studies designed to improve reading comprehension of students with learning disabilities. These studies were categorized in two areas: content enhancement, which includes instructional devices such as graphic organizers, advance organizers, student's prior knowledge, visual displays, semantic mapping, and mnemonic devices/illustrations. The other category, cognitive strategy instruction, incorporates single and multiple strategies. Single

strategies would teach students high order thinking and a specific task, such as the main idea of a passage or summarizing what was read. Identified single strategies were: self-questioning, mnemonic devices, cognitive mapping, self-monitoring, question and answer relationship, summarizing and paraphrasing. Multiple strategies were derived from the success of single strategies. Multiple strategies used were: summarization and self-monitoring, paraphrasing and repeated readings, and reciprocal teaching using Collaborative Strategic Reading (CSR) and POSSE. The POSSE strategy combines semantic mapping with *p*redicating ideas, *o*rganizing ideas, *s*earching/*s*ummarizing main ideas, and *e*valuating (Englert & Mariage, 1991). Collaborative Strategic Reading (CSR) uses reciprocal teaching and cooperative learning, (Bremer, Vaughn, Clapper & Ae-Hwa, 2002; Kim, Vaughn, Klingner, Woodruff, Reutebuch & Kouzekanani, 2008). CSR is divided into two phases. In the first stage, the following strategies are utilized: preview, click and clunk, get the gist, and wrap up. In the second phase, cooperative learning group activities prompt students to apply CSR strategies. According to Gajria, et al., (2007) that was a substantial effect when instructional materials were specifically designed or adapted for the study. Not only is the CSR strategy effective in teaching reading comprehension, it is also an effective strategy for teaching fluency. Additionally, Peer Assisted Learning (PALS) is also an effective teaching strategy. PALS emphasizes repeated reading that pairs a strong reader with a weak reader and requires the strong reader to read first (Fuchs & Fuchs, 2005; Fuchs, Fuchs, & Karzdan, 1996).

Watson, Gable, Gear, and Hughes (2012) provided an overview of possible factors associated with reading comprehension problems among secondary students with learning disabilities and evidence-based practices that match the individual needs of

students with learning disabilities. Factors that are essential for reading comprehension are: working memory capacity, prior knowledge, motivation, vocabulary, text coherence, and text structure (Watson, et al., 2012). Students with learning disabilities will be adversely affected if they have problems in any of these areas. It is important for secondary teachers of students with learning disabilities to use rigorous evidence-based reading strategies. Students who are engaged in their own learning are better able to connect prior knowledge to new knowledge. Watson, et al., (2012) and Gajria, et al., (2007) determined that instructional devices of graphic organizers and mapping tools are essential in learning reading comprehension, as well as paraphrasing and summarizing. The read-ask-paraphrase (RAP) strategy was identified for the purpose of teaching main ideas, and can improve reading comprehension for students with learning disabilities in any content area (Hagaman, Luschen, & Reid 2010; Watson, et al., 2012). This study determined that there are multiple evidence-based strategies available to address the deficits of students with learning disabilities (Watson, et al., 2012). Sencibaugh (2008) identified content enhancement strategies for improving reading comprehension. These strategies consisted of graphic organizers, advanced organizers, and mnemonic devices as identified by Gajria, et al., (2007) and Watson, et al., (2012). Sencibaugh (2008) also noted that peer tutoring and study guides could be utilized as content enhancement strategies.

Students with learning problems tend to have issues with organizing the materials that need to be learned through reading. This includes retrieving their prior knowledge, understanding the text and vocabulary, and making generalizations (Sencibaugh, 2008; Watson, et al., 2012). Teachers who combine enhancement strategies and cognitive

strategies equip students to become more independent and in control of their own learning (Gajria, et al., 2007; Sencibaugh, 2008). Intervention is the key to helping students have success and be motivated to improve their reading skills. Hattie (2009) created a meta-analysis to combine various studies that demonstrated strategies and interventions that have shown significant gains in student learning, which included repeated readings, modeling, PALS, CSR, feedback, and cueing. Students need to learn to decode, which subsequently leads to fluency, then comprehension of what is being read. Subsequently, this allows students to mitigate their reading struggles. Reading programs on the secondary level need to provide various strategies for the students based upon students' needs and learning styles and a curriculum program such as *LANGUAGE!* that is taught through direct instruction.

Statement of Purpose

Previously, when students entered high school, they were no longer taught reading skills as a specific class. Subsequently, this enhanced reading problems for struggling readers, especially special needs students who were reading below grade level. Consequently, reading high text was problematic for these students. High schools in Tennessee ascertained the need to implement reading programs for struggling readers, which included students with special needs. A Tier 3 intervention program, as part of the response to intervention (RTI), was established using the *LANGUAGE*! reading program to increase fluency and Lexile levels for students with special needs. The purpose of this research study is to determine if the use of *LANGUAGE!* has been effective in closing the reading gap for high school learners with special needs through direct instruction. This study will not be a comparison study, but a study to determine the effectiveness of the

LANGUAGE! reading program for an adolescent population. *LANGUAGE!* is a core curriculum reading program that emphasizes Test of Silent Word Reading Fluency (TOSWRF), Language Reading Scale (LRS), and Test of Written Spelling (TWS). To improve literacy, reading intervention programs such as *LANGUAGE!* were formulated to create the best reading instruction for testing and academic purposes, as well as personal enrichment and data collection used to determine present levels of educational performance (PLEP) in writing an individual education plan (IEP) for students with disabilities.

The *LANGUAGE!* program was designed for adolescents who had not learned to read through traditional instruction and learned best when given instruction in smaller parts (Scheffel, Shroyer, & Strongin, 2003). *LANGUAGE!* was developed by Jane Fell Greene (1995) for students at risk with reading delays in grades four through twelve and includes direct instruction in phonemic awareness, letter-sound correspondence, reading, writing, spelling, grammar, language, and vocabulary skills in every lesson within the unit (Joseph & Schisler, 2009; Scheffel, et al., 2003). The participants for this study were special needs students in grades 9-12 from four high schools in a suburban school district that utilized *LANGUAGE!* as its reading program of choice. Study participants attended a special education Tier 3 reading intervention class where they received 225 minutes of instruction per week using the *LANGUAGE!* reading program. This study is needed for numerous reasons, including the lack of research on curriculum-based reading programs for students with special needs and students with reading deficits.

Research Questions

1) What effect does *LANGUAGE!* have on closing the reading gap for secondary students with special needs?
2) Were there significant gains in Lexile scores while using the *LANGUAGE!* reading program.
3) Was there a significant improvement of a specific assessment AB, CD, or EF?
4) Was there a significant overall difference of growth among the four high schools?

CHAPTER 2

LITERATURE REVIEW

Many students, including students of special needs, enter high school reading below grade level. The reading ability of some of these students is severely below their working grade level, which makes high school difficult for them because they are unable to read the course text and comprehend what they are attempting to read (Ness, 2008; Rasinski, et al., 2005). Special needs students struggle the most. According to the National Longitudinal Transition Study-2 (NLTS-2), high school students with learning disabilities (LD) were behind in grade level an average of 3.4 years in reading (Wagner, Marder, et al., 2003; Wagner, Newman, et al., 2003, as cited by Fuchs, Fuchs, & Vaughn, 2014). Most high school teachers have not been properly trained to help special needs students and meet the needs of students that require basic skills intervention (Christie, 2008; Joseph, 2008; Mercer, Campbell, Miller, Mercer, & Lane, 2000). Previously, these students have been provided accommodations to meet the graduation requirements without having acquired necessary basic skills.

Historically, students leaving the eighth grade no longer received reading instruction (Ness, 2008; Hurst, Franklin, & Scales, 2010). However, high schools are now revising this policy and the special educational teachers are helping special needs students who have not acquired the information or foundation needed to be successful in the regular classroom setting (Hurst, et al., 2010). High schools are incorporating the RTI Model which is a multi-tier framework that provides intervention for the struggling students (Friedman, 2010). Some states, such as Tennessee, have adapted the RTI model to fit their personal needs. Tennessee has renamed its RTI model to RTI Squared (RTI^2).

Students with special needs, specifically students with learning disabilities (LD), functionally delayed (FD), intellectually disadvantaged (ID), and language impaired (LI), may struggle with decoding, fluency, and/or comprehension (See Appendix A) (Kavale, Spaulding, & Beam, 2009; tn.gov, n.d.a; tn.gov, n.d.b.; Williamson County Schools, 2016). While some students with specific learning disabilities may read fairly well, these students may need assistance to completely understand a concept that they missed in elementary and middle school, thus creating the need for intervention. For students with special needs, special education teachers work to close this gap using the mission of the high school RTI, which is to reduce or eliminate students' existing academic deficit (Fuchs, Fuchs, & Compton, 2010). Programs such as *LANGUAGE!, READ 180*, and SRA Reading Programs enable special education teachers to close the reading gap through direct focus, rigorous intervention, and having students work at their instructional level with age-appropriate materials (Christo, 2005). This helps increase students' foundational skills and fosters improvement in post-secondary outcomes. For students not identified as special education students, reading gaps are identified by a reading specialist who has specialized training addressing reading deficits, working with students, and serving as a resource to other teachers, (Selvaggi, 2014; Quatroche, Bean, & Hamilton, 2001).

It is apparent from previous research studies that there is a reading gap among nondisabled students or students with special needs as they are entering high school. For students that read slowly and struggle with reading, this will affect them academically and socially. Reading is a skill that is important for a person's success, not only in academics, but also in the world of work (DiGisi, 2010; Kendeou, et al., 2014). Reading

failure is extremely prevalent (Parker, 2004). Thus, it is essential that all students are taught to read and read with success. The mastery of reading will foster a sense of accomplishment and confidence among struggling readers and allow them to believe that they can be successful (Fuchs et al., 2010). Reading gaps will continue to grow unless rigorous interventions are implemented (Moats, 2004). Being able to read is a benchmark for adult independence; therefore, it is imperative that secondary students learn to read (Vaughn & Fletcher, 2010).

Reading Program Research

There are multitudes of research studies on how to teach reading through strategies and interventions on the secondary level to nondisabled students and students with special needs, but using direct instruction through the use of a curriculum-based reading program appears to be uncommon, especially for students with special needs. In a 2007 study conducted by Gajria, Jitendra, Sood, and Sacks, 34 investigations were detailed. None of these studies emphasized a reading program, but all noted reading strategies and interventions. Few studies were available to support the effectiveness of the various interventions that were described and, only five studies had been conducted during the previous five years of their study. Joseph (2008) stated that there was limited research on the effectiveness of programs and methods needed to teach middle and high school students. Three reading programs have been explored through research studies and have proven to be effective in teaching secondary students. The three specific reading programs identified in the study by Joseph (2008) were *Corrective Reading Decoding,* and *Reading Excellence: Word Attack and Rate Development Strategies*. *Great Leaps Reading Program* was only used in middle schools for this study.

Significant research has been conducted with middle school students and high school students on advanced reading skills, but there are few scientific studies probing the effectiveness of teaching basic reading skills to older students (Joseph, 2008).

A review of studies from 1986-2006 was conducted to explore the effectiveness of teaching basic reading skills to adolescents, resulting in 23 studies meeting the criteria for inclusion (Joseph & Schisler, 2009). Within the study, only five reading programs were identified; *Corrective Reading Decoding*, which was used in four studies, *Great Leaps Reading Program*, which was used in three investigations, *LANGUAGE!*, which was used in one study, *Char-L Intensive Phonics Program*, which was used in one study, and *MULTILIT (Making Up Lost Time in Literacy)*, which was used in one study. Outcomes of the study revealed the most significant achievement gains occurred in the oral reading fluency rate. The outcome of the study revealed that all five of the programs were in need of further investigation with more nondisabled adolescent participants and adolescent participants with special needs (Joseph & Schisler, 2009).

A synthesis of effective reading programs for middle and high schools was conducted by Slavin, Cheung, Groff, and Lake, (2008). The review was divided into four categories. Reading curricula included textbooks and curricula. Mixed-methods models were programs that combined large and small group instruction, computer activities, and other elements. CAI included supplementary materials and the use of technology to enhance reading achievement. Instructional process programs incorporated professional development for teachers and cooperative learning. In the reading curricula group, only 14 studies were located with two studies using the *LANGUAGE!* reading program and several using the *Corrective Reading Decoding* program, but none of these studies met

the criterion for inclusion in this synthesis. "The lack of research evaluating the reading textbooks for secondary students does not mean these programs are ineffective, just little evidence for using these programs," (Slavin, et al., 2008, p. 294-295). Two mixed-methods programs met the criterion for inclusion of the synthesis; *READ 180* was used in eight studies and *Voyager Passport* was used in one study. There are fewer large high-quality studies for middle and high school reading programs. Although 33 studies qualified for inclusion of the synthesis, only a small number of studies used any particular program. Thus, more research and development of reading programs for secondary students is clearly needed. Slavin (2010) added that more high-quality experimental studies were needed on secondary reading programs in order to determine what programs work and do not work.

Herrera, Truckenmiller, and Foorman, (2016) completed a synthesis study covering more than 20 years where 7,100 studies were identified by the search procedures. Of those studies, 111 used a research design that examined the effectiveness of the programs. Out of the 111 studies, 33 studies representing 29 programs were found to meet What Works Clearing House (WWC) standards and only 12 studies were identified as having a positive effect on reading comprehension, vocabulary, and literacy. Of those 12 studies, none of which were conducted in a high school setting, which suggested a clear gap in literature. This gap also suggested a gap in adolescent literacy literature. In completing the synthesis, the review team followed WWC procedures for reporting the study's findings. Of the 12 studies, six included explicit instruction in reading comprehension and seven included instructional routines. Herrera, et al., (2006) suggested that additional studies are needed on the implementation of effective programs

and practices for adolescents. The research team also suggested the need to expand the number and types of programs and practices available in adolescent literacy while providing rigorous scientific evidence supporting their effectiveness.

Harmon, Hedrick, Wood, and Vintinner (2011) placed their findings into one of the following four categories: training and experience, school and student descriptions, reading programs, and teacher preparation of their reading programs. Out of 21 participants, only six stated they had a secondary reading curriculum as well as the option of whether to follow the curriculum. Reading program data indicated that 13 out of 21 participants used computer- based programs as part of their curriculum and developed the rest of program themselves. Reading programs utilized were *Read 180, The Academy of Reading Program,* and *Voyager* (Harmon, et al., 2011). Teachers reported that some teachers used the entire package of these programs, and other teachers made modifications and adapted other tools not related to the commercial programs. More research is needed to understand the ramifications of a high school reading program that is designed to meet the needs of the secondary student (Harmon, et al., 2011), and especially students with special needs.

Documenting the need for competent reading teachers and developing a framework for the ideal secondary reading program has also been studied (Harmon, et al., 2011), but developing an understanding about what should be used as curriculum in a reading program appears to be random. Each of these studies suggested that more research is needed on reading programs for students in the secondary setting. These suggestions should prompt investigations into the lack of research for programs to teach

reading to secondary students and secondary students with special needs. Similarly, research is needed to determine the effectiveness or ineffectiveness of existing programs.

Literacy Issues

It has been established that students with special needs frequently have literacy issues that produce academic struggles (Fuchs, et al., 2010; Hurst, et al., 2010; Vaughn & Fletcher, 2012; Vaughn, S., Fletcher, J. M., Francis, D. J., Denton, C. A., Wanzek, J., Wexler, J., . . . Romain, M. A., 2008). Over 30 years ago, Samuel Kirk (1963) and his colleagues established the category of learning disabilities (Chalfant, 1998, as cited in Vaughn, Gerstein, & Chard, 2000) in response to pressure from parents advocating on behalf of their children. Parents believed their children had been inappropriately identified and placed in classrooms with children identified with mental retardation (MR), or were struggling within general education classrooms, meaning their children were not receiving the appropriate education they needed or deserved (Vaughn, Gerstein, & Chard, 2000). Parents recognized that their children were not learning with the traditional format and needed more specialized instruction, and this led to students of learning disabilities (LD) to be tested for specific deficits, such as reading and math, by school psychologists. Students with learning disabilities have difficulty in learning in one or more areas of reading, math, writing, listening, and reasoning.

Academic deficits become more noticeable as a student progresses through their school career (Fuchs, et al., 2010). By the time a student enters the sixth grade, educators have acquired enough information and data to determine if a student has reading difficulties (Vaughn & Fletcher, 2010). This data and information are acquired and compiled from state criterion-referenced reading assessments, norm-referenced

reading achievement tests, and progress monitoring at the school/district level. These data resources provide reliable information to identify secondary students who are at risk for reading problems and the need for further intervention (Fuchs, et al., 2010; Vaughn & Fletcher, 2010). When students enter high school, they may be struggling readers in spite of intervention efforts. According to Vaughn, et al., (2008) there are four reasons older students have difficulty with reading. Not all students were provided with substantive early intervention. Some students received inadequate early intervention. Other students had effective intervention, but then began to struggle when the text became more difficult. Some students actually acquired reading difficulties later in their academic careers rather than in the earlier grades.

RTI

In order to identify students who need to improve literacy, high schools are developing intervention classes in reading through the use of the Response to Intervention (RTI) multi-tier model (Friedman, 2010; Wilson, et al., 2013). The model was originally designed for elementary schools, but existing reading gaps among students entering high school necessitated academic intervention for some students (Friedman, 2010). School districts utilize RTI to determine if a student is in need of additional intervention in reading and math. RTI was designed to help teachers improve the academic performance of struggling students with disabilities and nondisabled students (Friedman, 2010; Fuchs, Fuchs, & Vaughn, 2014). The RTI model was created to prevent students from moving through the educational system without having their academic struggles addressed (Friedman, 2010). The RTI model addresses student academic needs through intervention. The best description of the RTI model is a multi-

tiered system that uses evidence-based instructional practices, progress monitoring, and data collection (Stuart & Rinaldi, 2009) to determine what level of intervention the student needs. As the tier level increases, so does the intensity of the intervention. Student levels are determined from data that are collected through bi-monthly progress monitoring. The framework of RTI leads to better teaching and learning through intervention, strategic instruction, and assessments used for data collection.

While closing the reading gap is important to secondary school educators, minimal research is available for teachers and administration that illustrate how to implement the RTI intervention on the secondary level (Fuchs & Deshler, 2007; Fuchs, et al., 2010; Wilson, et al., 2013). There are some challenges for the implementation of RTI at the secondary level. For one, content-area teachers are providing the evidence-based instruction in reading as opposed to reading teachers in the lower levels. Many secondary schools are using the block schedule, which increases the difficulty in scheduling and staffing the tier levels. The requirement of high school credits and the mastery of content-area courses place pressure on students and educators. Another challenge is the emphasis on remediation instead of screening, because most students who struggle have already been identified (Fuchs, Fuchs, & Compton, 2010; Wilson, et al., 2013). Freidman (2010) also addressed four challenges for the implementation of the RTI model at the secondary level. One challenge is building capacity, which incorporates the importance of professional development for all levels within the school staff. Parents should be well informed so that they are part of the process through engagement and support. Ensuring fidelity of implementation where the teacher has flexibility in teaching, though understanding it, is crucial. Teachers must

follow the script that has been provided for student success. The last challenge is ensuring that necessary resources are in place. Students need more intensive intervention, which is Tier 3 intervention, based on their personal needs and lack of skills to facilitate learning (Fuchs, et al., 2010).

RTI Framework

The RTI framework consists of three tiers. Tier 1 includes core instruction (Wilson, et al., 2013), which all students receive in the general education classroom and is taught by a general education teacher. In implementing Tier 1 intervention, what is being taught is closely monitored through assessments to reflect student learning. These assessments can be informative, formative, and/or summative. When a student begins to struggle with a concept or standard or fails to progress, the student continues in the Tier 1 setting, but is also placed in a Tier 2 setting for intervention.

Tier 2 is designed to supplement Tier 1 instruction in a small-group setting based on skill levels and relies heavily on instruction provided by a teacher with special training (Christo, 2005; Friedman, 2010; Fuchs, Fuchs, & Vaughn, 2014; Stuart & Rinaldi, 2009). The grouping by skill level enables the instructor to effectively target the area of deficit (Christo, 2005). The instructors of Tier 2 could be a certified teacher, a reading specialist, trained tutors or paraprofessionals, or classroom teachers who collaborate with implementation of secondary intervention (Vaughn & Roberts, 2007). Tier 2 instruction consists of re-teaching, reviewing, and providing opportunities for more practice and is provided outside of the Tier 1 classroom (Christo, 2005). Tier 2 uses small-group intervention, which is taught during designated times that have been incorporated into the schedule. The time allocated to Tier 2 is generally 20-40 minutes, three to four times a

week for 10-20 weeks (Friedman, 2010; Vaughn, et al., 2007). Progress is monitored every two weeks to determine their growth. Assessments should align with what is being taught with what is being measured, as well as the frequency of the measurement. With the use of the data from progress monitoring, the teacher, data team, and/or school will determine if the student is ready to exit the support of Tier 2 or move to Tier 3 (Fuchs, et al., 2014; Wilson, et al., 2013). The majority of students in Tier 2 intervention do not need Tier 3 intervention but may need Tier 2 intervention periodically during their time in high school (Wanzek & Vaughn, 2010). Tier 2 students generally are able to maintain at or near grade level. The duration of Tier 2 will depend on the severity of the deficit and the age of the students. Older students with more severe deficits and gaps will require more intense and rigorous intervention (Christo, 2005). Students who have not demonstrated success in the first two tiers have signaled that they need more intensive instruction (Fuchs, et al., 2014) within the tier framework and should also be placed in Tier 3 in addition to Tier 1 and Tier 2 (Stuart & Rinaldi, 2009).

Tier 3 intervention serves the needs of students with the most severe reading problems and is designed to accelerate instructional outcomes (Wanzek & Vaughn, 2010). Some students placed in Tier 3 are identified with special needs (Fuchs, et al., 2014) and are placed as part of special education services. Tier 3 instruction is not a review of what was taught in Tier 1 and Tier 2, but a unique application of content (Wilson, et al., 2013) using distinctive teaching strategies and curriculum programs. Tier 3 incorporates individualized instruction as well as small group instruction. The individualized instruction is necessary because not all students have the same gap or deficit. Each student has unique needs and skills, which makes small classes and small

groups important for the Tier 3 intervention. Teachers in the Tier 3 setting must identify the critical needs of reading instruction that are foundational to content-area learning as well as support skill development in key literacy areas. Along with the identification of critical needs, teachers must also identify how to teach these key areas to students with a long history of learning difficulties. Tier 3 intervention must be intense and must maintain frequent progress monitoring to determine the growth and the rate of improvement (Christo, 2005). Frequent progress monitoring, which should occur every two weeks, is important to ensure that the specific needs of students have been targeted. Teachers must be focused on their instruction and support to the students. Students who score in the bottom 25th percentile based on national standards of their class are generally placed in a Tier 3 intervention reading class. A study conducted by Torgesen (2001) used the Woodcock Reading Mastery Test in which students that had a standard score below 90 were considered nonresponsive after intervention and were considered in the bottom 25th percentile (Fuchs & Deshler, 2007). It has been suggested that students that have the greatest academic deficit and are struggling readers need to bypass Tier 2 and move directly to Tier 3 (Fuchs, et al., 2010; Wilson, et al., 2013) with the purpose of closing the reading gap and remediating their academic deficits. According to Christo (2005), advocates of the RTI model argue that students who have not been successful in Tier 1 and Tier 2 should be eligible for special education.

LANGUAGE! A Core Curriculum Reading Program

Due to the problem of under-developed reading skills, some high schools have implemented the *LANGUAGE!* reading program for special educational students as an intervention being taught by special educational teachers. The *LANGUAGE!* program

was designed for the purpose of adolescents who had not learned to read through traditional instruction and who learned best when given instruction in smaller parts (Scheffel, Shroyer, & Strongin, 2003). *LANGUAGE!* was developed by Jane Fell Greene (1995) for at-risk students with reading delays in grades 4-12 and includes direct instruction in phonemic awareness, letter-sound correspondence, reading, writing, spelling, grammar, language, and vocabulary skills in every lesson within the unit (Joseph & Schisler, 2009; Scheffel, et al., 2003).

Table 1

Levels of LANGUAGE!

Levels	Units Per Level	Levels Per Unit	Steps Per Lesson
A	6	10	6
B	6	10	6
C	6	10	6
D	6	10	6
E	6	10	6

The program includes six levels, with six units per level, ten lessons per unit, and six steps per lesson as shown above in Table 1. The steps are the same in each lesson and in the same order throughout the program as illustrated in Table 2.

Table 2

Steps of Each Lesson in LANGUAGE!

Steps	1	2	3	4	5	6
	Phonemic Awareness and Phonics	Word recognition and Spelling	Vocabulary and Morphology	Grammar and Usage	Listening and Reading Comprehension	Speaking and Writing

LANGUAGE! a curriculum-based reading program that is taught through direct instruction, is designed to work with students on their current reading level and uses their prior knowledge to continually increase their reading levels and knowledge of the English language. When students begin the intervention using the *LANGUAGE!* reading program, the students are assessed to determine the appropriate placement within the program. *LANGUAGE!* is implemented, either individually or in small groups, with the curriculum presented in a six-step lesson process in each unit (Scheffel, et al., 2003). Each lesson is designed and recommended to be taught in a 90-minute block that is added into the day. The program is designed with a daily pacing guide and supplemental materials. The materials include: an interactive text with a lesson planner, assessments and summative assessments, special instructional support, and a student text. The interactive text is a workbook that is a composite of worksheets/activities for the students to practice what is being taught. The assessments are used to monitor mastery, which allows for retakes when students have not met a mastery level of 80%. Other content mastery assessments include fluency and reading comprehension drills in which the students can document and monitor their progress on a graph. When students are monitoring their own progress, this is a form of self-assessment in which students are taking responsibility for their own

learning (Phillips, 2016). Self-assessment is defined as "a process by which students monitor and evaluate the quality of their thinking and behavior when learning and identifying strategies that improve their understanding and skills" (McMillan & Hearn, 2017, p. 40). Students can acquire effective learning achievements when they are taking responsibility for their own learning (Ndoye, 2017). Students can gain a high level of awareness of their own personal learning gaps and develop strategies (Ndoye, 2017) to overcome these learning gaps by self-assessment and taking responsibility for their own learning. By using self-assessment, students can plan their own way of studying as they monitor their progress and make any adjustments that they personally have identified through the use of their own data (Phillips, 2016).

Summative assessments are administered at the conclusion of each level book. Special instruction support includes pre-tests and post-tests for spelling. Students are administered a list of words on a pre-test, and again on a post-test. To achieve mastery, students must score 80%. Word card generators, are instructional support cards that help students work with words that they have spelled incorrectly. In like manner, Sortegories are incorporated as part of special instruction support. Sortegories provide online word activities with interactive reading, vocabulary, and comprehensive activities. Special instruction support also utilizes graphic organizers, which help students put their ideas and thoughts in order. Graphic organizers vary from diagramming sentences, KWL charts, pre-writing, multiple meaning maps, explore it, categorize it, and time lines. Graphic organizers are also used as a template for certain activities. Other supports include masterpiece sentences, in which students create sentences based on "pieces" they are provided, eReader online, a software that read the instructions and text selections

aloud, and Words for Teachers online, which allows teachers to customize activity worksheets based on the words in the curriculum.

After the students complete activities in the instructional interactive text, the work is checked, allowing the teacher and student to collaborate. Ongoing assessments permit teachers to monitor content and skills every two to three weeks. Finally, the student must master 80% of each ongoing assessments, which includes: all unit tasks, decoding and encoding a unit's reading/spelling vocabulary, comprehension of the stories, application of the unit's written and oral language concepts, and satisfactory completion of a unit's narrative and expository composition assignments (Greene, 1996). If a student scores below 80%, then the teacher will reinforce step 4 in lessons 4, 7, and 9. If a student scores below 60%, the teacher re-teaches step 4 in lessons 1, 3, and 5 (Greene, Eberhardt, & Greene, 2009). When the student masters 80% of the unit, the student moves to the next unit, but if the student does not master 80% of the unit, the teacher re-teaches or reinforces until the mastery level is met (Scheffel, et al., 2003). *LANGUAGE!* provides data from the assessments and three benchmarks to determine growth in the three areas of Language Reading Scale (LRS), Text of Written Spelling (TWS), and Test of Silent Word Reading Fluency (TOSWRF). Professional development for *LANGUAGE!* is not mandatory before implementing the reading program, but is highly recommended. Nationally certified *LANGUAGE!* trainers are available to conduct trainings that last from three to five days at local schools or school districts. During the professional development, participants acquire training on the use of the technology components of *LANGUAGE!* as well as the curriculum content, how to administer the curriculum-based

assessments and to interpret the data, how to prepare lesson plans, and how to train other teachers (Deshler, Palincsar, Biancarosa, & Nair (2007).

Studies Using *LANGUAGE!*

Greene (1996) completed a pilot study from 1994-1995 using the *LANGUAGE!* reading program. Participants were students who were significantly below grade level, were in six Associated Marine Institutes (AMI) across the country, and were juvenile offenders. Records from the treatment group indicated that all 45 participants were from lower socioeconomic backgrounds and ranged from ages 13-17. The comparison group had 51 participants who ranged in age from 13-17 and were from lower socioeconomic backgrounds. Average participation length for the comparison groups was 20.7 weeks, and this group was pre-tested upon entry and post-tested upon completion of the program. Both the comparison group and the treatment group received intensive educational intervention during their participation in the AMI programs. The participants were administered three tests to measure reading, writing, and language performance. The three tests were The Gray Oral Reading Tests (GORT-3) for rate, accuracy, and comprehension, the Peabody Individualized Achievement Test (PIAT-R) for written expression, and the Wide Range Achievement Test (WRAT-R) for encoding and decoding. Due to the participants entering and leaving at different times during the study, the pre-tests and post-tests were utilized to determine differences. The pre-test concluded that the treatment group had greater deficits than the comparison group. Pre-test data indicated that the comparison group scored significantly higher than the treatment group on criterion measures, comprehension, and reading. The post-test data noted that the differences or gaps between the two groups had been eliminated or closed. Results

indicated that the treatment group had a gain average of more than three grades in word identification, spelling, comprehension, and composition during a six-month enrollment period of intervention. Overall results indicated and supported that middle schools students and high school students who had not acquired written language (reading, spelling, and composition) by traditional standards were successful in comprehensive, individualized, structured language by teaching phonemic awareness (Greene, 1996).

Scheffel, et al., (2003) focused on the efficacy of a reading intervention program with adolescents that had significant reading deficits using *LANGUAGE!* In the 1998-1999 school year, three schools were selected in which 83% of the student population were reading below grade level. From these three schools, 552 participants in 6th grade, 7th grade, 8th grade, and 10th grade who were performing below average in reading, were chosen for the study. Only 14 students were identified as students with learning disabilities. The participants received daily intervention for 90 minutes in groups of 10-28 students, resulting in approximately 270 hours of intervention within the school year. The participants were taught based upon their individual pre-test and on-going assessments with classes provided for each grade level. The study was performed as a one-group pre-test/post-test design and using the pre-test and post-test to measure comparison for reading decoding and comprehension with the data collected by the school district. Due to different teachers implementing and collecting the data, mean scores from the schools were calculated across the pre-test and post-test. Wide Range Achievement Test-3 (WRAT-3) for spelling, Woodcock-Johnson Tests of Achievement Revised (WJ-RACH) for word attack and letter-word identification, and Multilevel Academic Survey Test (MAST) for reading were used for pre-testing and post-testing.

The WRAT-3 overall gain for 6th grade was .4%, .52% for 7th grade, .09% for 8th grade, and .03% for 10th grade. The MAST short form overall gain for 6th grade was 6.16%, 4.04% for 7th grade, 8.74% for 8th grade, and 1.71% for 10th grade and the MAST long form overall gain for 6th grade was 5.17%, 8.57% for 7th grade, 7.5% for 8th grade, and 6.15%fopr 10th grade. The WJ-RACH overall gain for 6th grade was 9.13%, 7.28% for 7th grade, 10.91% for 8th grade, and 10.41% for 10th grade. Overall results indicated that students receiving instruction using the *LANGUAGE!* reading program made significant gains in decoding skills, sight word recognition, spelling, and comprehension.

Lawrence (2003) completed a study using the *LANGUAGE!* reading program with six middle school participants with learning disabilities. Average age of student participants was 14, and the students were placed into two groups of three students each for pairing purposes. The study was conducted over a 13-week period, with each group receiving 60 minutes of intervention per day. The study used Woodcock-Johnson III Psycho-Educational Battery to determine that all participants were below the 50th percentile in basic reading and writing skills. Three instruments were used for the pre-test and post-test; the Wide Range Achievement test Revised 3rd Edition (WRAT-R) for word recognition skills, Woodcock Johnson Revised (WJ-R) to measure decoding skills, and the Basic Reading Inventory (BRI) to measure oral reading and accuracy rates. In addition to the pre-test and post-test, a reading attitude survey was administered to measure students' attitudes toward reading. Using a scale of 0-11, with 11 as an unfavorable attitude toward reading, an average score of 5.5 was acquired through the study, suggesting a neutral attitude toward reading. The WRAT-R pre-test had grade equivalent scores from 4th grade to 7th grade with the post-test measuring an increase

from 6th grade to high school level. The WJ-R pre-test had grade equivalent scores from 3.5 to 7.6 with the post-test measuring an increase from 3.8 to > 16.9. The BRI measured a 4% increase of words read per minute. Overall results revealed that the intervention was effective in improving word recognition skills and fluency skills, which included rate and accuracy, and the student's attitude toward reading.

Parker (2009) completed a study using *LANGUAGE!* and its impact on state reading proficiency scores for secondary students with disabilities. The study consisted of 1,998 students with disabilities from nine middle schools and seven high schools in an urban Northeast Ohio school district. There were 1,754 participants who received instruction using the *LANGUAGE*! reading program. The study identified 60% of the participants who showed growth in both comprehension and fluency after receiving the *LANGUAGE!* reading intervention. These same participants either moved up a book level or were removed from remediation. Of the participants, 20% demonstrated growth only in fluency and 16% demonstrated growth only in comprehension. Only 3% of the participants did not show any growth. The participants' average grade equivalent growth was 1.5-1.9 after one year of intervention. One particular student's growth was 7.1 years in a single academic year and another student's growth was 4.0 years in a single academic year. Students also showed gains in their comprehension and fluency levels using the *LANGUAGE!* reading program. Student growth in intervention was also noted, which indicated a 1.5-1.7 year growth on the state reading proficiency subtest in fluency and reading comprehension. When struggling adolescent readers with disabilities use the LANGUAGE! reading program, their literacy skills are positively impacted.

The What Works Clearinghouse (WWC), (2013) identified 16 studies on the effects of *LANGUAGE!*. Only one of these studies was categorized as part of the adolescent literacy area and met WWC standards with reservations. The study was a quasi-experimental design that included 1,272 participants in grades 9-10, conducted by Zmach, Chan, Salinger, Chinen, Tanenbaum, and Taylor (2009, as cited by WWC, 2013). The study reported a negative but not a statistically significant difference between the *LANGUAGE!* group and the comparison group on the TOSWRF (Zmach, et al., 2009, as cited by WWC, 2013).

Fields (2014) completed a study using the *LANGUAGE!* reading program with 86 sixth grade students over a four-month period to determine if the *LANGUAGE!* reading program had a positive impact on students. The participants were not in a control group and were not randomly selected. These findings of Fields' study indicated that there was a statistically significant difference between the average pre-test and post-test scores after intervention with a medium effect size. The study measured an overall gain of 88 Lexile points. Students with the lowest pre-test scores showed the greatest gain overall. Students with the highest pre-test scores made little to no progress, which could be attributed to students entering the program in Level C as opposed to Level E. *LANGUAGE!* is recommended for implementation over a year, and results from this study suggest that significant gains can be made in less time.

CHAPTER 3

METHODOLOGY

Introduction

The problem addressed in this quantitative study was the effectiveness of the *LANGUAGE!* curriculum-based reading program in closing the reading gap of secondary students with special needs. It is important to determine whether a core curriculum reading program is effective when teaching struggling readers with special needs. This chapter includes detailed information on the restatement of the problem, research design and participants, Lexiles, instruments, procedure and analysis, and restatement of the research questions.

Restatement of the Problem

Secondary schools have determined that students with special needs are entering high school unprepared to read and comprehend text. By using the capitalized RTI model, a Tier 3 intervention program with students of special needs, and using the *LANGUAGE!* core curriculum reading program, high school students will have the opportunity to increase their reading fluency, comprehension, and Lexile scores. The purpose of this study was to determine if the use of *LANGUAGE!* has been effective in closing the reading gap for high school learners with special needs. *LANGUAGE!* is a core curriculum reading program that emphasizes Test of Silent Word Reading Fluency (TOSWRF), Language Reading Scale (LRS) and Test of Written Spelling (TWS).

Design of Study

A quantitative study was used to determine if the use of *LANGUAGE!* has been effective in closing the reading gap for high school learners with special needs. The

choice of a quantitative approach was best suited to address the purpose of this study of analyzing extant data from *LANGUAGE!* assessments from the 2016-2017 academic school year. The *LANGUAGE!* curriculum-based reading program was designed for adolescents who had not learned to read through traditional instruction and learned best when given instruction in smaller parts (Scheffel, Shroyer, & Strongin, 2003). This core curriculum reading program was developed by Greene (1995) for at-risk students with reading delays in grades 4-12. *LANGUAGE!* includes: direct instruction in phonemic awareness, letter-sound correspondence, reading, writing, spelling, grammar, language, and vocabulary skills in every lesson within a unit (Joseph & Schisler, 2009; Scheffel, et al., 2003).

Sample/Participants

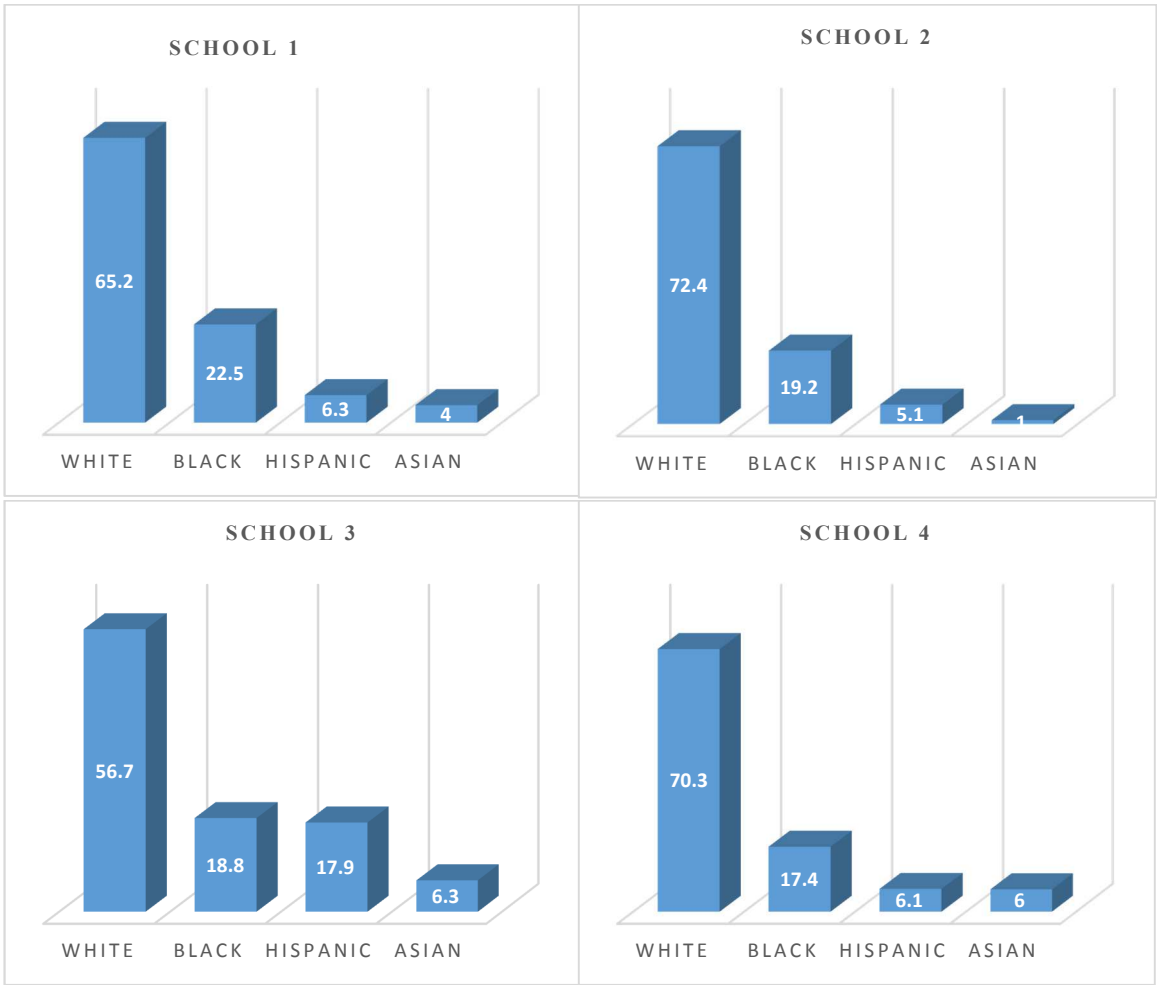
The research was conducted in a suburban school district in Tennessee where *LANGUAGE!* was selected as a high school special education reading program for students who were reading below their grade level. These students were identified by the use of Easy CBM during the past three school years. *LANGUAGE!* is a core curriculum reading program that includes phonemic awareness, word recognition and spelling, vocabulary and morphology, grammar and usage, listening and reading comprehension, speaking and writing, and fluency. The research was implemented during the 2016-2017 school year and was collected from four of the eight high schools within the research district. Three of the eight high schools in the research district were not implementing *LANGUAGE!* for the special education reading intervention program and one high school in the research district did not give permission for the study. The four high schools in the study included grades 9-12 and had a combined total population of 7,853 students.

Students with special needs that require special education services comprise 5.5% - 10.2% of the total population in each school. Demographics of High School 1 has a student population of 2,151 students with 33% of students being classified as minorities and 9% of students being classified as special education. Enrollment demographics in High School 1 are as follows - 65.2% White, 22.5% African-American, 6.5% Hispanic, and 4% Asian. Economically disadvantaged students comprise 15.4% of the school population and the school's graduation rate is 95.6%. The gender ratio consists of 50% male and 50% female. Demographics of High School 2 has a student population of 1,821 with 25.3% of students being classified as minorities and 13.2 % of students being classified as special education. Enrollment demographics in High School 2 are as follows - 72.4% White, 19.2% Black, 5.1% Hispanic, and less than 1% Asian. Economically disadvantaged students comprise 20.1% of the school population and the school's graduation rate is 91.7%. The gender ratio consists of 49% male and 51%. Demographics of High School 3 has a student population of 1,882 students with 43% of students being classified as minorities and 10.5% of students being classified as special education. Enrollment demographics in High School 3 are as follows - 56.7% White, 18.8% Black, 17.9% Hispanic, and 6.3% Asian. Economically disadvantaged students comprise 32.1% of the school population and the school's graduation rate is 95.4%. The gender ratio consists of 49% male and 51% female. Demographics of High School 4 has a student population of 1,955 with 29.7% of students being classified as minorities and 13.9% of students being classified as special education. Enrollment demographics in High School 4 are as follows - 70.3% White, 17.4% Black, 6.1% Hispanic, and 6% Asian. Economically disadvantaged students comprise 19.4% of the school population

and the school's graduation rate is 97.8%. The gender ratio consists of 49% male and 51% female. Demographics of the four high schools are shown below in Table 3.

Table 3

Demographics of the Four High Schools



Research participants consisted of 265 students in grades 9-12 from four of the high schools in the research district. These students qualified for placement in reading

intervention classes and were identified as receiving special education services. The students ranked in the lower 25th percentile of achievement and received 225 minutes per week of intervention using the curriculum-based *LANGUAGE!* reading program, which was administered in either a 90-minute block or a 45-minute class period. Table 4, as shown below, identifies how many *LANGUAGE!* classes were offered in each high school, how many special education teachers were using the program in each school, the total number of students that used the reading program, and the level book(s) that each school used.

Table 4

Four High Schools Special Education Intervention Reading Program

Schools	Number of Special Education Teachers	Number of Classes Per School	Total Number of Students Per School	Book Levels Being Used Per School
1	4	6	59	B, C, D
2	4	10	56	A, B, C, D
3	4	10	75	A, C, D
4	3	7	75	A, B,C, D,E, F
Totals	15	33	265	

Selection of Participants

Research participants were special education students who scored in the bottom 25th percentile in reading comprehension using Easy CBM for data analysis and/or had a reading deficit identified by the school psychologist using the Gray Oral Reading Test (GORT), Wechsler Individual Achievement Test (WIAT), or Woodcock Reading Mastery Test (WRMT) who were reading below grade level and were slated for the

special education reading classes taught by special education teachers. To determine if a student was in the bottom 25th percentile in reading, students were given the ACT Explore and Aimsweb while still in middle school to determine their percentile placement. During the 2016-2017 school year, middle schools in the research district began using Easy CBM, a universal screener, to determine placement. The ACT Explore assessment is no longer available for use; thus, placement in the bottom 25th percentile occurred irrespective of the identifier used for assessment. Students that fell below the 25th percentile while in middle school were receiving reading intervention instruction using either the *LANGUAGE!* or *SRA* reading program. The *SRA* reading program includes phonics, decodable text, timed reading and fluency, comprehension, vocabulary, and literature (McGraw Hill, 2012). All teachers using the *LANGUAGE!* program have completed professional training to teach the reading program curriculum and develop support from *LANGUAGE!* and the appropriate district personnel in order to ensure the implementation of fidelity. This is to insure the implementation of fidelity. Special education teachers who are teaching the reading intervention class collaborate twice per year regarding the *LANGUAGE!* reading program.

As the students' progress from the middle school to the high school, each special education teacher considers the recommendations from the middle school as well as analyzing the data from Easy CBM and the *LANGUAGE!* program to determine if a student continues to perform below reading grade level and should remain in a reading intervention class. When students with learning disabilities or other special needs begin the school year, each high school in the research district gives either a *LANGUAGE!* placement test or administers the first *LANGUAGE!* benchmark to determine the

student's Lexile score for placement in the appropriate *LANGUAGE!* level. When a student with learning disabilities or other special needs transfers in during the school year, the student is given an Easy CBM assessment to determine placement. The *LANGUAGE!* reading program has six books, which are designated as A-F and divided into three levels. Each book consists of six units that include 10 lessons, for a total of 36 units. The first level is comprised of books A and B, which cover units 1-12. The second level is comprised of books C and D, which cover units 12-14. The third level is comprised of books E and F, which cover units 25-36.

Lexile Scores

The purpose of the Lexile is to provide a scientific approach of measuring reading ability and text measurement of difficulty (MetaMetrics, 2008). There are two Lexile measures: The Lexile Reader Measure assesses a student's reading ability and can monitor student growth. The Lexile Text Measure represents the difficulty of the text (Harvey, 2011). The Lexile that *LANGUAGE!* utilizes is the reader measure. Student reading ability is determined by administration of a reading comprehension assessment and the resulting Lexile score (Harvey, 2011). The Lexile Reader and Lexile Text Measure range from 0L to 2000L, with the higher number corresponding to a higher level of comprehension (Archer, 2010; MetaMetrics, 2008; 2009).

Lexile Levels

Table 5 as shown below, indicates the necessary student Lexile scores for correct book placement. Lexile scores alone, not grade level, determine this placement. Readability levels for Lexile Text Measures correspond with text selections, as well as grade equivalents. These Lexile numbers allow student to select reading books on the

appropriate Lexile level. When a student has a 700L reading measure and reads a 700L text, the student is predicted to comprehend 75% of the book, which is known as targeted reading (MetaMetrics, 2009). A targeted rate is the point at which a reader will comprehend enough to understand the text, even with challenges within the text. The Lexile scale is a developmental scale that can be used to determine whether a reader's ability is developing and showing gains over time with the use of progress monitoring. Educators can also use Lexile measures to monitor student growth in relation to state and national proficiency level (Archer, 2010; Harvey, 2011; MetaMetrics, 2009).

Table 5

LANGUAGE! Readability Levels for Text Selection
Lexile Text Measures Ranges and Corresponding Grade Ranges (Green, et al., 2009)

Book	Decodable	Instructional	Challenge
A	200L-400L (1-2)	300L-700L (2-3)	650L-950L (4-5)
B	300L-700L (2-3)	500L-850L (3-4)	750L-1050L (5-6)
C	500L-850L (3-4)	650L-950L (4-5)	850l-1075l (6-7)
	Independent	Instructional	Challenge
D	650L-950L (4-5)	750L-1075L (5-7)	950L-1150L (7-9)
E	750L-1050L (5-6)	850L-1100L (6-8)	1000L-1200L (8-10)
F	850L-1075L (6-7)	950L-1200L (7-10)	1100L-1300L (10-12)

Instruments

The three benchmarks of *LANGUAGE!* that were administered in the 2016-2017 school year were the assessment tools. These benchmarks of the *LANGUAGE!* reading program were used to determine fluency rate from the Test of Silent Word Reading Fluency (TOSWRF) and Lexile scores from the Language Reading Scale (LRS). The TOSWRF can be administered in a group or individual setting using either a computer or a paper version. Paper versions are scored and entered manually. TOSWRF is designed to measure word identification, speed, and word comprehension (Williams & Bell, 2005). TOSWRF is an assessment that uses a string of letters with no spaces between the letters that form words. There are no single letter words, such as "I" or "a." The students place a vertical line to show the break between words. Assessment time lasts three minutes and is monitored by a computer. LRS is an untimed assessment that is administered in a group. A raw score is provided that *LANGUAGE!* can convert to a Lexile measure and percentile rank. Using the *LANGUAGE!* program, students are given three benchmarks each fall, winter, and spring. Benchmarks are assessments that establish achievement or lack of achievement during a specific period of time in which students have been instructed and are measured against a standard. These three *LANGUAGE!* benchmarks were used as measurement to ascertain significant gains and to determine the effect that *LANGUAGE!* has on closing the reading gap for secondary students with learning disabilities. The reading gap is determined by the student's Lexile score based on benchmark scores and the appropriate grade level.

Procedure

The analysis used extant data of reading fluency (TOSWRF) and comprehension data (LRS) from the *LANGUAGE!* reading program were used to determine the effectiveness of closing the reading gap for high school learners with special needs. The *LANGUAGE!* benchmark assessments from fall, winter, and spring were used to analyze student gains after receiving intervention through a Tier 3 framework using the *LANGUAGE!* reading program. Study participants were previously identified as students with learning disabilities or other special needs that were performing in the bottom 25th percentile and were enrolled in a special education reading intervention class using the *LANGUAGE!* reading program. If a student was missing a single benchmark of LRS, the participant's data was eliminated from the LRS portion of the study, and if a student was missing a single benchmark of TOSWRF, the participant's data was eliminated from the TOSWRF portion of the study. All three benchmarks were needed to determine gain. Data was collected from the *LANGUAGE!* reading program using the raw scores from the LRS and TOSWRF benchmarks that were administered in August 2016, December 2016, January 2017, and May 2017 to complete a repeated measure ANOVA analysis using the IBM Statistical Package for Social Sciences (SPSS) significance level of .05 to determine a significant difference.

ANOVA utilized extant data from the three *LANGUAGE!* LRS and TOSWRF benchmarks as a repeated measure for each of the high schools. The LRS and TOSWRF data was arranged so that variables were recorded once for each student. Each benchmark was a dependent variable and each school was an independent variable. Each school was separated for grouping purposes. The LRS and TOSWRF data was recorded

once for each student. The repeated measures ANOVA analysis was used to determine if *LANGUAGE!* is effective in closing the reading gap for students with special needs.

A second set of repeated measures ANOVA used the LRS benchmarks from each of the four high schools to determine if there was a significant gain in Lexile scores while using the LANGUAGE! curriculum-based reading program. Each benchmark was the dependent variable and all high schools were the independent variable with significant levels as $p < .05$. The LRS data was recorded once for each student.

An additional repeated measures ANOVA utilized extant LRS and TOSWRF data to determine if there was significance within the three groups of AB, CD, and EF using the three benchmarks of *LANGUAGE*! from each of the four high schools. Each level, AB, CD, and EF, was the dependent variable and each high school was the independent variable. Each school was separated for grouping purposes. The *LANGUAGE!* reading program combines books A and B, C and D, E and F for the benchmark assessments. The level of significance was $p < .05$. The variables were written for each assessment to be recorded as one case and the LRS and TOSWRF data was recorded once for each student.

A final repeated measures ANOVA was used to identify if there was a significant overall difference among the four high schools using the LRS and TOSWRF benchmarks' raw scores from the extant data. The LRS and TOSWRF benchmarks were the dependent variables and each high school was an independent variable. The level of significance was $p < .05$. The variables will be written for each assessment to be recorded as one case and the LRS and TOSWRF data was recorded once for each student.

Restatement of Research Questions

1) What effect does *LANGUAGE!* have on closing the reading gap for secondary students with special needs?
2) Were there significant gains in Lexile scores while using the *LANGUAGE!* reading program?
3) Was there a significant improvement of a specific assessment AB, CD, or EF?
4) Was there a significant overall difference among the four high schools?

CHAPTER 4

RESULTS

Introduction

The results from the data that were collected for this quantitative study will be used to determine whether the core curriculum reading program *LANGUAGE!* is effective when teaching struggling readers with special needs. Raw scores from Language Reading Scale (LRS) and Test of Silent Word Reading Fluency (TOSWRF) were collected from the *LANGUAGE!* reading program that was obtained in the 2016-2017 school year. The LRS measures reading comprehension through Lexile scores. Lexile scores are a scientific approach of measuring the reading ability of students as well as the measurement of text difficulty (MetaMetrics, 2008). Through the use of progress monitoring and the *LANGUAGE!* benchmarks, the Lexile scale, which is a developmental scale, can be used to determine whether a reader's ability is developing and showing gains over time. Lexile measures can be used to monitor student growth in relation to state and national proficiency level (Archer, 2010; Harvey, 2011; MetaMetrics, 2009) making the Lexile valid and reliable. The TOSWRF is a theoretically research-based method that provides reliable and valid measures of students' ability to recognize printed words. The TOSWRF uses a string of letters with no spaces between the letters that form words, which is designed to measure word identification, speed, and word comprehension (Williams & Bell, 2005). This chapter includes detailed information on the population and sample size, data analysis of each of the four research questions with tables, and summary of the results.

Population and Sample

During the 2016-2017 school year, 7,853 students attended four high schools in grades 9-12 in a suburban school district in Tennessee. From this population, 5.5% - 10.2% of the student population were identified as students with special needs. From the four high schools, 265 students received reading intervention instruction using the *LANGUAGE!* reading program (Greene, 1995) in a special education reading lab, taught by special education teachers.

From the pool of 265 students, there were two groups identified for the study. One group was the Language Reading Scale (LRS), and 170 of these students were selected as participants. The second group was the Test of Silent Word Reading Fluency (TOSWRF) and 128 of these students were selected as participants. The criterion for selection for the LRS group were based upon the participants being assessed for reading comprehension three times using the *LANGUAGE!* LRS fall benchmark, winter benchmark, and spring benchmark. Each of these benchmarks is used to determine growth in student Lexile scores. Consequently, 95 students were excluded from the pool of 265 students for lack of completing all three LRS benchmarks in the calendar school year. The criterion for selection for the TOSWRF group were based upon the participant being assessed for fluency speed three times using the *LANGUAGE!* TOSWRF fall benchmark, winter benchmark, and spring benchmark, which are used to determine fluency speed. As a result, 137 students were excluded from the pool of 265 students for lack of completing all three TOSWRF benchmarks in the calendar school year. There was an overlap of participants within the study. The same 128 participants that qualified for the TOSWRF group also qualified for the LRS group.

The data used to complete this research was extant data from the *LANGUAGE!* reading program from the 2016-2017 school year. Due to irregularities in all four high schools of teachers entering demographics, it was not possible to determine each participant's current grade at the time the data was collected. The identity of each participant's gender was not available because the *LANGUAGE!* program does not offer that option. Furthermore, each student's identifying disability was not readily available without acquiring consent, which would have limited the sample size in this study.

Data Analysis

Research Question 1.

LRS results.

To determine reading comprehension, the LRS benchmarks are administered three times per year measuring reading comprehension in the fall, winter, and spring. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Greene, 1995) and previous studies identifying the use of *LANGUAGE!* (Fields, 2014; Green, 1996; Lawrence, 2003; Parker, 2009; Scheffel, et al., 2003; WWC, 2013). Only 170 of the 265 participants were assessed three times using the *LANGUAGE!* LRS benchmarks during the 2016-2017 school year. It is noteworthy to mention that there is no differentiation by participation in the *LANGUAGE!* curriculum-based reading program. The raw scores from the *LANGUAGE !* LRS benchmark data were used to answer the research question: What effect does *LANGUAGE!* have on closing the reading gap for secondary students with learning disabilities?

H_0: There will be no significant effect of *LANGUAGE!* closing the reading gap for students with special needs.

H_1: There will be a significant effect of *LANGUAGE!* closing the reading gap for students with special needs.

To answer this research question, a repeated measures ANOVA was run between schools on their performances across the three LRS benchmarks. Each test was identified as the dependent variable and each school was an independent variable. The ANOVA test determined there were significant differences with High School 1 in raw scores, $F(2, 66) = 8.158$, $p = .001$, 95% CI [0.14, 0.27] and in High School 3 $F(2,104) = 7.457$, $p = .001$, 95% CI [0.24, 0.39]. Equally important, High School 1 decreased its average score from LRS benchmark 1 ($M = 27.24$, $SD = 7.08$) to LRS benchmark 2 ($M = 23.74$, *SD* 6.60) while increasing slightly from benchmark 2 to benchmark 3 ($M = 24.75$, $SD =$ 6.69), dropping below the average scores set by LRS benchmark 1. There was no significant difference with High School 2 in raw scores, with a $p = .067$, but was approaching significance. High School 2 decreased its average score from LRS benchmark 1 ($M = 29.77$, $SD = 9.24$) to LRS benchmark 2 ($M = 26.65$, $SD = 8.377$) and slightly increased to LRS benchmark 3 ($M = 27.52$, $SD = 9.49$), but dropping below the average score set by LRS benchmark 1. High School 3 slightly decreased its average score from LRS benchmark 1 ($M = 25.10$, $SD = 9.29$) to LRS benchmark 2 ($M = 21.94$, *SD* 7.57) while increasing slightly from LRS benchmark 2 to LRS benchmark 3 ($M = 24.21$, $SD = 9.07$). Most noticeably, High School 4 had no significant change in the means and standard deviation. High School 4 decreased its average score slightly from LRS benchmark 1 ($M = 24.96$ $SD = 8.496$) to LRS benchmark 2 ($M = 23.27$, *SD* 7.82),

while increasing slightly from LRS benchmark 2 to LRS benchmark 3 (M = 24.92, SD = 8.20), almost matching the average score set by LRS benchmark 1. Table 6 contains the ANOVA summary table of the four high schools' LRS benchmarks, and Table 7 displays the means and standard deviations for the LRS benchmarks.

Table 6

Combined High Schools Comprehension (LRS) Benchmarks

	LRS	*SS*	*DF*	*MS*	*F*	*p**
HS1						
	Benchmarks	220.020	2	110.040	8.158	.001***
	Students	3674.873	33	111.360		
	Residual	889.980	66	13.485		
HS2						
	Benchmarks	161.699	2	80.849	2.824	.067
	Students	5650.624	30	188.654		
	Residual	1717.634	60	28.627		
HS3						
	Benchmarks	279.862	2	139.931	7.457	.001***
	Students	9802.604	52	188.512		
	Residual	1951.472	104	18.764		
HS4						
	Benchmarks	97.077	2	48.538	1.981	.143
	Students	7732.256	51	151.613		
	Residual	2499.590	102	25.506		
	Total	34677.691	506			

LRS (Language Reading Scale)
*** $p < .001$
** $p < .01$

Table 7

Combined High Schools Means and Standard Deviations for Comprehension (LRS)

		M	*SD*	*N*
HS1				
	BM1	27.235	7.075	34
	BM2	23.735	6.598	34
	BM3	24.750	6.688	34
HS2				
	BM1	29.774	9.240	31
	BM2	26.645	8.376	31
	BM3	27.516	9.489	31
HS3				
	BM1	25.094	9.286	53
	BM2	21.943	7.586	53
	BM3	24.208	9.068	53
HS4				
	BM1	24.962	8.496	52
	BM2	23.269	7.816	52
	BM3	24.923	8.205	52

BM (Benchmark)
HS (High School)
LRS (Language Reading Scale)

Most noticeably, the initial ANOVA found significance. An alpha of .05 was used for all statistical tests. For a pairwise comparison, a Bonferroni corrections test was used to control the type 1 error rate, and due to multiple independent and dependent variables, was used for repeated measures. A Bonferroni post hoc test, as displayed in Table 8, was run to identify where the differences occurred. This test detected a significant difference between LRS benchmark 1 and LRS benchmark 2, and a significant difference was determined between LRS benchmark 1 and LRS benchmark 3 for High School 1, but no significant differences between, LRS benchmark 2 and LRS benchmark 3. High School 2 showed a significant difference between LRS benchmark 1 and LRS benchmark

2, but no significant difference between LRS benchmark 1 and LRS benchmark 3, nor between LRS benchmark 2 and LRS benchmark 3. A significant difference was determined between LRS benchmark 1 and LRS benchmark 2, as well as between LRS benchmark 2 and LRS benchmark 3, but was no significant difference between LRS benchmark 1 and LRS benchmark 3 for High School 3. High School 4 showed no significant differences between any LRS benchmarks.

Table 8

Comparison of LRS Benchmarks of Each High School

	LRS	LRS	*p**
HS1			
	BM1	BM2	.005***
	BM1	BM3	.013***
	BM2	BM3	.651
HS2			
	BM1	BM2	.041**
	BM1	BM3	.416
	BM2	BM3	1.000
HS3			
	BM1	BM2	.004***
	BM1	BM3	.610
	BM2	BM3	.044**
HS4			
	BM1	BM2	.119
	BM1	BM3	1.000
	BM2	BM3	.300

BM (Benchmark)
HS (High School)
LRS (Language Reading Scale)
*** $p < .001$
** $p < .01$
*Bonferroni Correction

Analysis of the LRS of the four high schools indicated that two of the four high schools, High School 1 and High School 3, had a significant difference in comprehension growth measured by the *LANGUAGE!* LRS benchmarks that are administered in the fall, winter, and spring of each school year. Although significance was established, High School 1 decreased its average score from LRS benchmark 1 ($M = 27.24$, $SD = 7.08$) to LRS benchmark 2 ($M = 23.74$, SD 6.60) while increasing slightly from benchmark 2 to benchmark 3 ($M = 24.75$, $SD = 6.69$). High School 3 slightly decreased its average score from LRS benchmark 1 ($M = 25.10$, $SD = 9.29$) to LRS benchmark 2 ($M = 21.94$, SD 7.57) while increasing slightly from LRS benchmark 2 to LRS benchmark 3 ($M = 24.21$, $SD = 9.07$). Three of the four high schools indicated significant differences when comparing LRS benchmark 1 to LRS benchmark 2. Only one high school, High School 3, indicated a significant difference when comparing LRS benchmark 1 to LRS benchmark 2 and LRS benchmark 2 to LRS benchmark 3. High School 4 showed no significant differences when comparing all three of the benchmarks.

TOSWRF results.

To determine fluency speed, TOSWRF benchmarks are administered three times per year measuring fluency speed. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Green, 1995) and previous studies identifying the use of *LANGUAGE!* (Fields, 2014; Green, 1996; Lawrence, 2003; Parker, 2009; Scheffel, et al., 2003; WWC, 2013). Of the four high schools, only 128 of the 265 participants were assessed three times using the *LANGUAGE!* TOSWRF benchmarks during the 2016-2017 school year. It is noteworthy to mention that there is no differentiation by participation in the *LANGUAGE!* curriculum-based reading program.

The raw scores from the *LANGUAGE !* TOSWRF benchmark data were used to answer the research question: What effect does *LANGUAGE!* have on closing the reading gap for secondary students with learning disabilities?

H_0: There will be no significant effect of *LANGUAGE!* closing the reading gap for students with special needs.

H_1: There will be a significant effect of *LANGUAGE!* closing the reading gap for students with special needs.

To answer this research question, a repeated measures ANOVA was run between schools on their performances across the three TOSWRF benchmarks. Each test was identified as the dependent variable and each school was an independent variable. The ANOVA determined that there were significant differences with High School 1 in raw scores, $F(2, 56) = 14.904$, $p < .001$, 95% CI [0.16, 0.30] in High School 2 $F(2,48) = 15.201$, $p < .001$, 95% CI [0.13, 0.28] and in High School 3 $F(2, 74) = 4.008$, $p = .001$, 95% CI [0.22, 0.38]. In addition, High School 1 increased its average score considerably from TOSWRF benchmark 1 ($M = 74.52$, $SD = 16.99$) to TOSWRF benchmark 2 ($M = 92.97$, SD 18.72) while decreasing considerably from benchmark 2 to benchmark 3 ($M = 83.97$, $SD = 16.89$), but maintaining above the average score set by TOSWRF benchmark 1. High school 2 increased its average score considerably from TOSWRF benchmark 1 ($M = 65.84$, $SD = 12.76$) to TOSWRF benchmark 2 ($M = 83.36$, SD 29.63) while slightly decreasing from benchmark 2 to benchmark 3 ($M = 80.24$, $SD = 26.79$), but maintaining above the average score set by TOSWRF benchmark 1. High School 3 increased its average score considerably from TOSWRF benchmark 1 ($M = 72.13$, $SD =$ 19.17) to TOSWRF benchmark 2 ($M = 82.42$, SD 31.70) while slightly decreasing from

TOSWRF benchmark 2 to TOSWRF benchmark 3 (*M* = 80.40, *SD* = 19.47), but maintaining above the average score set by TOSWRF benchmark 1. Although High School 4 showed no significant differences, the means and standard deviations demonstrated a slight increase from TOSWRF benchmark 1 (*M* = 83.75, *SD* = 28.15) to TOSWRF benchmark 2 (*M* = 88.00, *SD* = 29.84) while decreasing from TOSWRF benchmark 2 to TOSWRF benchmark 3 (*M* = 81.06, *SD* = 30.20), and dropping below the average score set by TOSWRF benchmark 1.

Table 9

Combined High Schools Fluency (TOSWRF) Benchmarks

	TOSWRF	*SS*	*DF*	*MS*	*F*	*p**
HS1						
	Benchmarks	4935.885	2	2467.943	14.904	.000***
	Students	16608.390	28	593.157		
	Residual	9272.782	56	165.585		
HS2						
	Benchmarks	4367.040	2	2183.520	15.201	.000***
	Students	44938.720	24	1872.447		
	Residual	6894.960	48	143.645		
HS3						
	Benchmarks	2257.947	2	1128.974	4.008	.022**
	Students	43973.970	37	1188.486		
	Residual	20844.720	74	281.685		
HS4						
	Benchmarks	882.574	2	441.287	1.291	.282
	Students	66875.210	35	1940.720		
	Residual	23935.430	70	341.935		
	Total	245787.610	380			

HS (High School)
TOSWRF (Test of Silent Word Reading Fluency)
*** $p < .001$
** $p < .01$

Table 9 above contains the ANOVA summary table of the four high schools' TOSWRF benchmarks and Table 10 displays the means and standard deviations for the TOSWRF benchmarks.

Table 10

Combined High Schools Means and Standard Deviations for Fluency (TOSWRF)

		M	*SD*	*N*
HS1				
	BM1	74.517	16.990	29
	BM2	92.966	18.718	29
	BM3	83.966	16.889	29
HS2				
	BM1	65.840	23.762	25
	BM2	83.360	29.626	25
	BM3	80.240	26.783	25
HS3				
	BM1	72.132	19.173	38
	BM2	82.421	31.703	38
	BM3	80.395	19.470	38
HS4				
	BM1	83.750	28.152	36
	BM2	88.000	29.836	36
	BM3	81.056	30.196	36

BM (Benchmark)
HS (High School)
TOSWRF (Test of Silent Word Reading Fluency)

Table 11

Comparison of TOSWRF Benchmarks of Each High School

	TOSWRF	TOSWRF	*p**
HS1			
	BM1	BM2	.000***
	BM1	BM3	.003**
	BM2	BM3	.089
HS2			
	BM1	BM2	.000***
	BM1	BM3	.000***
	BM2	BM3	1.000
HS3			
	BM1	BM2	.099
	BM1	BM3	.011**
	BM2	BM3	1.000
HS4			
	BM1	BM2	.918
	BM1	BM3	1.000
	BM2	BM3	.388

BM (Benchmark)
HS (High School)
TOSWRF (Test of Silent Word Reading Fluency)
*** $p < .001$
** $p < .01$
*Bonferroni Correction

Most noticeably, the initial ANOVA found significance. An alpha of .05 was used for all statistical tests. For a pairwise comparison, a Bonferroni corrections test was used to control the type 1 error rate, and due to multiple independent and dependent variables, were used for repeated measures. A Bonferroni post hoc test, as shown above in Table 11, was run to identify where the differences occurred. A significant difference between TOSWRF benchmark 1 and TOSWRF benchmark 2 and a significant difference between TOSWRF benchmark 1 and TOSWRF benchmark 3 for High School 1 was determined, but no significant difference between TOSWRF benchmark 2 and TOSWRF

benchmark 3 was found. High School 2 showed a significant difference between TOSWRF benchmark 1 and TOSWRF benchmark 2, as well as between TOSWRF benchmark 1 and TOSWRF benchmark 3, but no significant difference between TOSWRF benchmark 2 and TOSWRF benchmark 3 was found. From High School 3, a significant difference was found between TOSWRF benchmark 1 and TOSWRF benchmark 3, but no significant difference between TOSWRF benchmark 1 and TOSWRF benchmark 2, as well as between TOSWRF benchmark 2 and TOSWRF benchmark 3, was found. High School 4 showed no significant differences between any TOSWRF benchmarks.

Analysis of the Test of Silent Word reading Fluency (TOSWRF) of the four high schools indicated that three of the four high schools had a significant difference in fluency speed measured by the *LANGUAGE!* TOSWRF benchmarks that are administered in the fall, winter, and spring of each school year. Conversely, with significance established, high school 1 increased its average score from TOSWRF benchmark 1 ($M = 74.52$, $SD = 16.99$) to TOSWRF benchmark 2 ($M = 92.97$, SD 18.72) while decreasing from benchmark 2 to benchmark 3 ($M = 83.97$, $SD = 16.89$). High School 2 increased its average score from TOSWRF benchmark 1 ($M = 65.84$, $SD = 12.76$) to TOSWRF benchmark 2 ($M = 83.36$, $SD = 29.63$) while slightly decreasing from benchmark 2 to benchmark 3 ($M = 80.24$, $SD = 26.79$). High School 3 increased its average score from TOSWRF benchmark 1 ($M = 72.13$, $SD = 19.17$) to TOSWRF benchmark 2 ($M = 82.42$, $SD = 31.70$) while slightly decreasing from TOSWRF benchmark 2 to TOSWRF benchmark 3 (M = 80.40, SD = 19.47). Most noticeably, High School 4 showed no significant differences, but the means and standard deviations

demonstrated a slight increase from TOSWRF benchmark 1 (*M* = 83.75, *SD* = 28.15) to TOSWRF benchmark 2 (*M* = 88.00, *SD* = 29.84) while decreasing from TOSWRF benchmark 2 to TOSWRF benchmark 3 (*M* = 81.06, *SD* = 30.20). In contrast, all four high schools indicated significant differences when comparing benchmark 1 to benchmark 2, and three of the four high schools indicated significant differences when comparing benchmark 1 to benchmark 3. None of the four high schools showed significant differences when comparing benchmark 2 to benchmark 3.

Research Question 2.

LRS results.

Lexile scores are used to provide a scientific approach of measuring reading ability (MetaMetrics, 2008). To determine a student's reading ability, a reading comprehension assessment must be administered, resulting in a Lexile score (Harvey, 2011). The higher the Lexile score, the higher level of comprehension is obtained by the student (Archer, 2010; MetaMetrics, 2008; 2009). The *LANGUAGE!* reading program uses the Language Reading Scale (LRS) to determine reading comprehension by administering LRS benchmarks in the fall, spring, and winter of each school year. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Greene, 2009). All four high schools were combined as one group, identifying 170 eligible participants that were assessed three times using the *LANGUAGE!* LRS benchmarks during the 2016-2017 school year. It is noteworthy to mention that there is no differentiation by participation in the *LANGUAGE!* curriculum-based reading program. The raw scores from the *LANGUAGE!* LRS benchmark data were used to

answer the research question: Were there significant gains in Lexile scores while using the *LANGUAGE!* reading program?

H_0: There will be no significant gains in Lexile scores while using the *LANGUAGE!* reading program.

H_1: There will be a significant gains in Lexile scores while using the *LANGUAGE!* reading program.

To answer this research question, a repeated measures ANOVA was used to combine all schools as one group on their performances across the three LRS benchmarks. Each test was identified as the dependent variable and all four schools were combined as one group as the independent variable. The ANOVA test determined that there were significance in raw scores, $F(2, 338) = 15.497$, $p < .001$, 95% CI [0.58, 0.70]. Table 12 contains the ANOVA summary table and Table 13 displays the means and standard deviations for the LRS benchmarks. Although there were significant differences, there were slight decreases and increases in means and standard deviations between benchmarks. LRS Benchmark 1 decreased its score from ($M = 26.34$, $SD = 8.75$) to LRS benchmark 2 ($M = 23.56$, $SD = 7.270$) while LRS benchmark 2 increased slightly to LRS benchmark 3 ($M = 25.14$, $SD = 8.50$) but not reaching or surpassing, the average score established by LRS benchmark 1.

Table 12

ANOVA Summary for LRS Benchmarks

Source	*SS*	*DF*	*MS*	*F*	*p**
Benchmarks	656.616	2	328.308	15.497	.000***
Students	27999.570	169	165.678		
Residual	7160.718	338	21.186		
Total	35816.900	509			

LRS (Language Reading Scale)
*** $p < .001$

Table 13

Means and Standard Deviations for LRS Benchmarks

	M	*SD*	*N*
Benchmark 1	26.34	8.755	170
Benchmark 2	23.56	7.727	170
Benchmark 3	25.14	8.467	170

LRS (Language Reading Scale)

As a result, the initial ANOVA determined significance; therefore, a Bonferroni post hoc test was run to identify where the differences occurred. An alpha of .05 was used for all statistical tests. For a pairwise comparison, a Bonferroni corrections test was used to control the type 1 error rate, and due to multiple independent and dependent variables, was used for repeated measures. A Bonferroni post hoc test determined a significance between benchmark 1 and benchmark 2 and between benchmark 2 and benchmark 3. There was no significance between benchmark 1 and benchmark 3 with a $p = .061$, as shown in Table 14.

Table 14

Comparison of LRS Benchmarks

LRS	LRS	*p**
BM1	BM2	.000***
BM1	BM3	.061
BM2	BM3	.007**

BM (Benchmark)
LRS (Language Reading Scale)
*** $p < .001$
** $p < .01$
*Bonferroni Correction

Research Question 3.

LRS levels AB, CD, EF.

The *LANGUAGE!* reading program was designed for adolescents who had not learned to read through traditional instruction and who learned best when given instruction in smaller parts (Scheffel, Shroyer, & Strongin, 2003). *LANGUAGE!* is a curriculum-based reading program that was developed by Jane Fell Greene (1995) for at-risk students with reading delays in grades 4-12, and is divided into levels and units (Joseph & Schisler, 2009; Scheffel, et al., 2003). The program consists of six levels: A, B, C, D, E, and F, with six units per level, 10 lessons per unit, and six steps per lesson. The *LANGUAGE!* reading program uses the Language Reading Scale (LRS) to determine reading comprehension by administering LRS benchmarks three times per year. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Greene, 1995). Of the 265 participants, 170 were assessed three times during the 2016-2017 school year for reading comprehension, and 49 participants were administered the AB level LRS benchmarks, 110 participants were administered the CD level LRS

benchmarks, and 11 participants were administered the EF level LRS benchmarks. It is noteworthy to mention that there is no differentiation by participation in the *LANGUAGE!* curriculum-based reading program. The raw scores from the *LANGUAGE!* LRS benchmark data were used to answer the research question: Was there a significant improvement of a specific assessment between the levels AB, CD, or EF in the *LANGUAGE!* reading program?

H_0: There will be no significant improvement of a specific assessment between levels in the *LANGUAGE!* reading program.

H_1: There will be a significant improvement of a specific assessment *between* levels in the *LANGUAGE!* reading program.

To answer this research question, a repeated measures ANOVA was used to combine levels, AB, CD, and EF, from all schools as three groups on their performances across the three LRS benchmarks. Additionally, all four high schools were combined as one group identifying the 170 eligible participants that were assessed three times using the *LANGUAGE!* LRS benchmarks. Levels AB, CD, and EF, were identified as the dependent variables and all four schools were combined as one group as the independent variable. The ANOVA test determined that there were no significant differences using the *LANGUAGE!* LRE benchmarks with levels AB and EF in raw scores. A significant difference was found with level CD, $F(2, 218) = 30.808$, $p < .001$, 95% CI [0.57, 0.72]. Although there were significant differences, there were decreases and increases in means and standard deviations between benchmarks with level CD. LRS level CD benchmark 1 decreased its score from ($M = 28.16$, $SD = 7.80$) to LRS level CD benchmark 2 ($M = 23.84$, $SD = 7.07$) while LRS level CD benchmark 2 increased to LRS level CD

benchmark 3 (*M* = 26.55, *SD* = 7.53) but not reaching or surpassing the average score established by LRS level CD benchmark 1. Level AB established no significant differences, nor showed an increase in means and standard deviations. LRS level AB benchmark 1 decreased its score slightly from (*M* = 23.57, *SD* = 10.42) to LRS level AB benchmark 2 (*M* = 23.12, *SD* = 9.22) and LRS level AB benchmark 2 slightly decreased to LRS level AB benchmark 3 (*M* = 21.84, *SD* = 9.30). Level EF established no significance, but level EF showed an increase in means and standard deviations. LRS level EF benchmark 1 increased its score slightly from (*M* = 20.36, *SD* = 6.98) to LRS level EF benchmark 2 (*M* = 22.82, *SD* = 7.28) and LRS level EF benchmark 2 slightly increased to LRS level EF benchmark 3 (*M* = 25.73, *SD* = 10.09) increasing above the average score established by LRS level EF benchmark 1. Table 15 contains the ANOVA summary table of the four high schools' LRS benchmarks and Table 16 displays the means and standard deviations for the LRS benchmarks levels AB, CD, and EF.

Table 15

LRS Benchmark Scores Separated by LANGUAGE! Levels

Level	Source	*SS*	*DF*	*MS*	*F*	*p**
AB						
	Benchmarks	79.442	2	39.721	1.720	.184
	Students	11221.401	48	233.779		
	Residual	2216.558	96	23.089		
CD						
	Benchmarks	1052.442	2	526.221	30.808	.000***
	Students	14047.724	109	128.878		
	Residual	3723.558	218	17.081		
EF						
	Benchmarks	158.606	2	79.303	2.703	.091
	Students	1447.636	10	144.764		
	Residual	566.727	20	29.336		
	Total	34514.094	507			

LRS (Language Reading Scale)
*** $p < .001$
** $p < .01$

Table 16

Means and Standard Deviations of LRS for Levels AB, CD, EF

Levels	LRS	*M*	*SD*	*N*
AB				
	BM1	23.57	10.416	49
	BM2	23.12	9.216	49
	BM3	21.84	9.301	49
CD				
	BM1	28.16	7.796	110
	BM2	23.84	7.077	110
	BM3	26.55	7.534	110
EF				
	BM1	20.36	6.975	11
	BM2	22.82	7.278	11
	BM3	25.73	10.090	11

BM (Benchmark)
LRS (Language Reading Scale)

Most noticeably, the initial ANOVA found significance. An alpha of .05 was used for all statistical tests. For a pairwise comparison, a Bonferroni corrections test was used to control the type 1 error rate, and due to multiple independent and dependent variables, was used for repeated measures. A Bonferroni post hoc test was run to identify where the differences occurred. Level AB and level EF found no significant differences between any LRS benchmarks. Level CD found significant differences between all LRS benchmarks $p < .001$ and $p < .01$ as shown in Table 17.

Table 17

Comparison of LRS Benchmarks of Levels AB, CD, EF

LEVEL	LRS	LRS	*p**
AB			
	BM1	BM2	1.000
	BM1	BM3	.113
	BM2	BM3	.768
CD			
	BM1	BM2	.000***
	BM1	BM3	.027**
	BM2	BM3	.000***
EF			
	BM1	BM2	.669
	BM1	BM3	.318
	BM2	BM3	.424

BM (Benchmark)
LRS (Language Reading Scale)
*** $p < .001$
** $p < .01$
*Bonferroni Correction

Analysis of LRS benchmarks in relations to the three levels, AB, CD, and EF, indicated there were no significant differences in comprehension growth in levels AB (n = 49) and EF (n = 11). A significant difference was determined in level CD (n = 110), as measured by the *LANGUAGE!* LRS benchmarks' raw scores. Although there were significant differences, there were decreases and increases in means and standard deviations between benchmarks with level CD. Level AB established no significant differences, nor demonstrated an increase in means and standard deviations. Level EF established no significant differences, but level EF showed an increase in means and standard deviations.

TOSWRF levels AB, CD, EF.

LANGUAGE! is a curriculum-based reading program that was developed by Jane Fell Greene (1995) for at-risk students with reading delays in grades 4-12 and is divided into levels and units (Joseph & Schisler, 2009; Scheffel, et al., 2003). The program includes six levels, A, B, C, D, E, and F, with six units per level, ten lessons per unit, and six steps per lesson. The *LANGUAGE!* reading program uses the Test of Silent Word reading Fluency (TOSWRF) to determine fluency speed by administering the TOSWRF benchmarks three times per year. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Greene, 1995). Of the 265 participants, 128 were assessed for reading fluency, with 31 participants administered the AB level TOSWRF benchmarks, 88 participants administered the CD level TOSWRF benchmarks, and nine participants administered the EF level TOSWRF benchmarks. The raw scores of the TOSWRF benchmarks measure the fluency speed of students. It is noteworthy to mention that there is no differentiation by participation in the *LANGUAGE!*

curriculum-based reading program. The raw scores from the *LANGUAGE!* TOSWRF benchmark data were used to answer the research question: Was there a significant improvement of a specific assessment between the levels AB, CD, or EF in the *LANGUAGE!* reading program?

H_0: There will be no significant improvement of a specific assessment between levels in the *LANGUAGE!* reading program.

H_1: There will be a significant improvement of a specific assessment between levels in the *LANGUAGE!* reading program.

To answer this research question, a repeated measures ANOVA was used to combine levels AB, CD, and EF from all schools as three groups on their performances across the three TOSWRF benchmarks. All four high schools were combined as one group, identifying the 128 eligible participants that were assessed three times using the *LANGUAGE!* TOSWRF benchmarks. Levels, AB, CD, and EF were identified as the dependent variable and all four schools were combined as one group as the independent variable. The ANOVA test determined that there were significant differences using the *LANGUAGE!* TOSWRF benchmarks with levels AB, $F(2, 60) = 5.784$, $p = .001$, 95% CI [0.17, 0.33] and CD, $F(2, 174) = 47.475$, $p < .001$, 95% CI [0.60, 0.77] in raw scores. A significant difference was not found with level EF with $p = .076$.

In addition to significant differences in TOSWRF levels AB and CD, there were increases in means and standard deviations between benchmarks with levels AB and CD. TOSWRF Level AB established a significant difference and showed an increase in means and standard deviations. TOSWRF level AB benchmark 1 decreased in score slightly from ($M = 66.84$, $SD = 29.86$) to TOSWRF level AB benchmark 2

(*M* = 59.87, *SD* = 25.74) and TOSWRF level AB benchmark 2 increased considerably to TOSWRF level AB benchmark 3 (*M* = 71.84, *SD* = 27.61), exceeding above the average score established by benchmark 1. TOSWRF level CD benchmark 1 increased in score from (*M* = 74.63, *SD* = 18.42) to TOSWRF level CD benchmark 2 (*M* = 94.60, *SD* = 21.17), then TOSWRF level CD benchmark 2 decreased to TOSWRF level CD benchmark 3 (*M* = 84.83, *SD* = 19.78), but did not decrease below the average scores established by TOSWRF level CD benchmark 1. Level EF established no significance and established a steady decrease in means and standard deviations. TOSWRF level EF benchmark 1 decreased in score slightly from (*M* = 102.67, *SD* = 19.06) to TOSWRF level EF benchmark 2 (*M* = 99.89, *SD* = 26.05), and TOSWRF level EF benchmark 2 decreased considerably to TOSWRF level EF benchmark 3 (*M* = 80.22, *SD* = 36.45) decreasing below the average score established by TOSWRF level EF benchmark 1. Table 18 contains the ANOVA summary table of the four high schools' TOSWRF benchmarks and Table 19 displays the means and standard deviations for the TOSWRF benchmarks levels AB, CD, and EF.

Table 18

TOSWRF Benchmark Scores Separated by LANGUAGE! Levels

Level	Source	*SS*	*DF*	*MS*	*F*	*p**
AB						
	Benchmarks	2240.022	2	1120.011	5.784	.005**
	Students	3966.000	30	132.200		
	Residual	11617.978	60	193.633		
CD						
	Benchmarks	17562.758	2	8781.379	47.475	.000***
	Students	11388.159	87	130.898		
	Residual	32184.576	174	184.969		
EF						
	Benchmarks	2694.741	2	1347.370	3.040	.076
	Students	5823.111	8	727.889		
	Residual	7091.259	16	443.204		
	Total	94568.604	381			

TOSWRF (Test of Silent Word Reading Fluency)
*** $p < .001$
** $p < .01$

Table 19

Means and Standard Deviations of TOSWRF for Levels AB, CD, EF

Levels	TOSWRF	*M*	*SD*	*N*
AB				
	BM1	66.84	29.860	31
	BM2	59.87	25.738	31
	BM3	71.84	27.614	31
CD				
	BM1	74.63	18.423	88
	BM2	94.60	21.174	88
	BM3	84.83	19.776	88
EF				
	BM1	102.67	19.059	9
	BM2	99.89	26.045	9
	BM3	80.22	36.448	9

BM (Benchmark)
TOSWRF (Test of Silent Word Reading Fluency)

Most noticeably, the initial ANOVA found significance. An alpha of .05 was used for all statistical tests. For a pairwise comparison, a Bonferroni corrections test was used to control the type 1 error rate, and due to multiple independent and dependent variables, was used for repeated measures. A Bonferroni post hoc test was run to identify where the differences occurred. Level AB found a significant difference between TOSWRF benchmark 1 and TOSWRF benchmark 2, but no significant difference between TOSWRF benchmark 2 and TOSWRF benchmark 3, or between TOSWRF benchmark 1 and TOSWRF benchmark 3. Level CD found significant differences between all three TOSWRF benchmarks $p < .001$, and level EF found no significant differences between any TOSWRF benchmarks as shown in Table 20.

Table 20

Comparison of TOSWRF Benchmarks of Levels AB, CD, EF

LEVEL	TOSWRF	TOSWRF	*p**
AB			
	BM1	BM2	.006***
	BM1	BM3	.285
	BM2	BM3	.292
CD			
	BM1	BM2	.000***
	BM1	BM3	.000***
	BM2	BM3	.000***
EF			
	BM1	BM2	1.000
	BM1	BM3	.347
	BM2	BM3	.188

BM (Benchmark)
TOSWRF (Test of Silent Word Reading Fluency)
*** $p < .001$
** $p < .01$
*Bonferroni Correction

Analysis of TOSWRF benchmarks relative to levels AB, CD, and EF indicated there were significant differences in fluency speed in levels AB (n = 31) and CD (n = 88) measured by the *LANGUAGE!* TOSWRF benchmarks' raw scores. There was no significant difference in level EF (n = 9), but approaching with p = 076. Although there were significant differences, there were decreases and increases in means and standard deviations between benchmarks with levels AB and CD. Level EF established a steady decrease in means and standard deviations.

Research Question 4.

Due to the problem of under-developed reading skills, each of the four high schools utilized in this study were using the *LANGUAGE!* curriculum-based reading program for Tier 3 intervention with students with special needs taught by special education teachers. The *LANGUAGE!* reading program was designed for adolescents who had not learned to read through traditional instruction (Scheffel, Shroyer, & Strongin, 2003) and needed a more rigorous approach to close the gaps in reading skills. The *LANGUAGE!* reading program uses the Language Reading Scale (LRS) to determine reading comprehension and the Test of Silent Word Reading Fluency (TOSWRF) to determine fluency speed by administering the LRS and TOSWRF benchmarks in the fall, winter, and spring of each school year. These benchmarks are considered to be valid and reliable per the *LANGUAGE!* reading program (Greene, 1995). Data from the four high schools were used to answer the research question: Was there a significant overall difference among the four high schools?

H_0: There will be no statistically significant overall difference among the four high schools.

H_1: There will be a statistically significant overall difference among the four high schools.

Data from eight repeated measures ANOVA using the LRS and the TOSWRF raw scores were collected to determine if there was a significance among the high schools. High School 1 and High School 3 each had significant differences in both LRS and TOSWRF scores. High School 2 had significant difference only in TOSWRF scores. High School 4 demonstrated no significant differences in either assessment of LRS or TOSWRF scores.

High School 1 and High School 3 performed better than High School 2 and High School 4 due to significant differences in both LRS and TOSWRF, with High School 1 demonstrating a slightly higher overall significant difference than High School 3 based upon the significant difference in TOSWRF scores, High School 1 $p < .001$ and High School 3 $p < .01$. High School 1 demonstrated more of an overall difference in both comprehension and fluency with the LRS $F(2, 66) = 8.158$, $p = .001$, 95% CI [0.14, 0.27] and TOSWRF $F(2, 56) = 14.904$, $p < .001$, 95% CI [0.16, 0.30]. High School 3 demonstrated an overall difference in both LRS $F(2, 104) = 7.457$ $p = .001$, 95% CI [0.24, 0.39] and TOSWRF $F(2, 74) = 4.008$, $p < .01$, 95% CI [0.22, 0.38]. High School 2 showed significance only in fluency, TOSWRF $F(2, 48) = 15.201$, $p < .001$, 95% CI [0.13, 0.28] and no significance with $p = .067$. Table 21 displays the overall significance of the four high schools used in this study.

Table 21

Overall Significance of the Four High Schools

	HS 1	HS 2	HS 3	HS 4
LRS				
**p*	.001****	.067	.001****	1.430
TOSWRF				
**p*	.000***	.000***	.022**	.282

LRS (Language Reading Scale)
TOSWRF (Test of Silent Word Reading Fluency)
**** $p = .001$
*** $p < .001$
** $p < .01$

Table 22 displays the means and standard deviations for the LRS and TOSWRF benchmarks. High school 1 decreased its average score from LRS benchmark 1 ($M = 27.24$, $SD = 7.08$) to LRS benchmark 2 ($M = 23.74$, $SD = 6.60$) while increasing slightly from benchmark 2 to benchmark 3 ($M = 24.75$, $SD = 6.69$). High School 3 slightly decreased its average score from LRS benchmark 1 ($M = 25.10$, $SD = 9.29$) to LRS benchmark 2 ($M = 21.94$, $SD = 7.57$) while increasing slightly from LRS benchmark 2 to LRS benchmark 3 ($M = 24.21$, $SD = 9.07$). There was no significance or loss with High School 2 in raw scores, with a $p = .067$. Most noticeably, there was no meaningful change in the means and standard deviation of high school 4. High School 4 decreased its average score slightly from LRS benchmark 1 ($M = 24.96$ $SD = 8.496$) to LRS benchmark 2 ($M = 23.27$, $SD = 7.82$) while increasing slightly from LRS benchmark 2 to LRS benchmark 3 ($M = 24.92$, $SD = 8.20$).

High School 1 increased its average score considerably from TOSWRF benchmark 1 ($M = 74.52$, $SD = 16.99$) to TOSWRF benchmark 2 ($M = 92.97$, $SD = 18.72$) while decreasing from benchmark 2 to benchmark 3 ($M = 83.97$, $SD = 16.89$), but

above the average score set by benchmark 1. High School 2 increased its average score considerably from TOSWRF benchmark 1 (*M* = 65.84, *SD* = 12.76) to TOSWRF benchmark 2 (*M* = 83.36, *SD* = 29.63) while slightly decreasing from benchmark 2 to benchmark 3 (*M* = 80.24, *SD* = 26.79), but above the average score set by benchmark 1. High School 3 increased its average score from TOSWRF benchmark 1 (M = 72.13, SD = 19.17) to TOSWRF benchmark 2 (*M* = 82.42, *SD* = 31.70) while slightly decreasing from TOSWRF benchmark 2 to TOSWRF benchmark 3 (*M* = 80.40, *SD* = 19.47) but staying above the average score set by benchmark 1. Although High School 4 demonstrated no significance, the means and standard deviations demonstrated a slight increase from TOSWRF benchmark 1 (M = 83.75, SD = 28.15) to TOSWRF benchmark 2 (*M* = 88.00, *SD* = 29.84) while decreasing from TOSWRF benchmark 2 to TOSWRF benchmark 3 (*M* = 81.06, *SD* = 30.20) falling below the average score set by benchmark l.

Table 22

Overall Means and Standard Deviations for LRS and TOSWRF

		LRS *M*	LRS *SD*	LRS *N*	TOSWRF *M*	TOSWRF *SD*	TOSWRF *N*
HS1				34			29
	BM1	27.235	7.075		74.517	16.990	
	BM2	23.735	6.598		92.966	18.718	
	BM3	24.750	6.688		83.966	16.889	
HS2				31			25
	BM1	29.774	9.240		65.840	23.762	
	BM2	26.645	8.376		83.360	29.626	
	BM3	27.516	9.489		80.240	26.783	
HS3				53			38
	BM1	25.094	9.286		72.132	19.173	
	BM2	21.943	7.586		82.421	31.903	
	BM3	24.208	9.068		80.95	19.470	
HS4				52			36
	BM1	24.962	8.496		83.750	28.152	
	BM2	23.269	7.816		88.000	29.836	
	BM3	24.923	8.205		81.056	30.196	
TOTAL				170			128

Summary

This quantitative study determined that not all high schools are as successful as other high schools in closing the reading gap using the *LANGUAGE!* curriculum-based reading program. This could be due to the lack of fidelity or lack of teacher experience in using the LANGUAGE! reading program. Each high school in the study did not teach the exact same levels AB, CD, and EF, but all high schools did teach level CD. This could be due to a limited number of staff and available space within each school. Some of the high schools demonstrated significant differences, but gains were not always evident in means and standard deviations. Chapter 5 includes a summary of findings per

research question, as well as limitations and recommendations for further investigations using the *LANGUAGE!* curriculum-based reading program.

CHAPTER 5

DISCUSSION

This quantitative study researched the *LANGUAGE!* curriculum-based reading program to determine if the use of *LANGUAGE!* had been effective in closing the reading gap for high school learners with special needs through direct instruction. This study identified four high schools, grades 9-12, that used *LANGUAGE!* as their reading intervention program in a Tier 3 setting for students with special needs using extant data from the 2016-2017 school year. The students who were in the reading intervention program received 225 minutes a per week of rigorous direct instruction using the *LANGUAGE!* reading program taught by special education teachers. The participants from a pool of 265 students were selected based upon their completion of three Language Reading Scale (LRS) benchmarks (n = 170) that measures reading comprehension and completing three Test of Silent Word Reading Fluency (TOSWRF) benchmarks (n = 128) that measures reading speed. Participants were not required to complete all six assessments to be eligible for the study. The participants were required to complete the series of three benchmarks in each group of LRS and/or TOSWRF benchmarks to qualify for the study. After a determination of which participants had taken all three benchmarks under each assessment, LRS (n = 170) and TOSWRF (n = 128), multiple repeated measures ANOVA were conducted. In conducting the research using extant data, it was not possible to determine the participants' current grade at the time the data was collected, nor the gender or disability identification of each qualifying participant. This was due to fidelity irregularities in all four high schools of teachers not coding every student's grade, and *LANGUAGE!* does not have an option to identify student's gender.

Identifying each student's learning disability would have limited the pool of participants due to requiring additional permission for the study.

This study was not a comparison study, but was conducted to determine the effectiveness of the *LANGUAGE!* reading program for an adolescent population with special needs. Jane Fell Greene (1995) developed *LANGUAGE!* for students at risk with reading delays in grades 4-12. The *LANGUAGE!* reading program was designed for adolescents who had not learned to read through traditional instruction (Scheffel, Shroyer, & Strongin, 2003), specifically establishing reading gaps and the need for reading intervention. *LANGUAGE!* includes direct instruction in phonemic awareness, letter-sound correspondence, reading, writing, spelling, grammar, language, and vocabulary skills in every lesson within the unit (Joseph & Schisler, 2009; Scheffel, et al., 2003). Research questions that were investigated:

1) What effect does *LANGUAGE!* have on closing the reading gap for secondary students with special needs?
2) Were there significant gains in Lexile scores while using the *LANGUAGE!* reading program?
3) Was there a significant improvement of a specific assessment AB, CD, or EF?
4) Was there a significant overall difference of growth among the four high schools?

Research findings are detailed below and organized by each research questions, followed by a conclusion of the study.

Research Question 1

In identifying the results of the first research question, the process was conducted in two groups; LRS and TOSWRF. The results from group one was collected from four repeated measures ANOVA. The results were employed to identify if there were any significant differences from the LRS benchmarks using the *LANGUAGE!* reading program (n = 170). The LRS benchmarks demonstrated a significant difference with High School 1 and High School 3. The differences in LRS (n = 170) are noteworthy due to the use of RTI, the students' mindset, and the *LANGUAGE!* reading program equals student success. High school 4 showed no significance with $p < .001$. High School 2 with $p < .05$ as significant, showed no significance, but was approaching significance with a $p = .067$. A Bonferroni pairwise comparison was run to identify where the differences occurred and detected a significant difference between LRS benchmark 1 and LRS benchmark 2 from three of the high schools; High School 1, High School 2, and High School 3. A significant difference was detected between benchmark 2 and benchmark 3 from only High School 3 and a significant difference was detected between benchmark 1 and benchmark 3 from High School 1.

In spite of the repeated measures ANOVA showing differences in the LRS benchmarks for High School 1, High School 2, and High School 3, the means showed no gains from benchmark 1 to benchmark 3 from any of the four high schools. In fact, the means demonstrated a loss from benchmark 1 to benchmark 2 and a gain from benchmark 2 to benchmark 3, but benchmark 3 not reaching or surpassing the base line that was set by benchmark 1 for all four high schools.

In addition to summarizing the first research question, the results from four additional repeated measures ANOVA were employed to identify if there were any significant differences in the TOSWRF benchmarks using the *LANGUAGE!* reading program (n = 128). The TOSWRF benchmark results determined significance in fluency from three of the four high schools; High School 1, High School 2, and High School 3. High School 4 showed no significance with $p < .05$. The gains in TOSWRF (n = 128) are noteworthy. All four high schools increased their average scores between benchmark 1 and benchmark 2 and High School 1, High School 2, and High School 3 also increased their average scores between benchmark 1 and benchmark 3 in means and standard deviations. A Bonferroni pairwise comparison was run to identify where the differences occurred. A significant difference was detected between TOSWRF benchmark 1 and TOSWRF benchmark 2 from High School 1 and High School 2. A significant difference was detected between benchmark 1 and benchmark 3 from High School 1, High School 2, and High School 3. A significant difference was not detected for High School 4.

The repeated measures ANOVA showed differences in the TOSWRF benchmarks for High School 1, High School 2, and High School 3, the means showed gains from benchmark 1 to benchmark 2 from all four high schools. All four high schools demonstrated a drop in the means from benchmark 2 to benchmark 3, but benchmark 3 reached and surpassed the base line that was set by benchmark 1 for all High School 1, High School 2, and High School 3. High School 4 failed to reach the base line with benchmark 3 that was set by benchmark 1.

The results indicated that *LANGUAGE!* was more significantly effective with fluency (TOSWRF) than comprehension (LRS). This is evident from Table 8 and Table 11, where only High School 1 demonstrated an overall difference between LRS benchmark 1 and LRS benchmark 3 in comprehension and three high schools demonstrated differences between TOSWRF benchmark 1 and TOSWRF benchmark 3 in fluency using a Bonferroni post hoc. Equally important, the means as shown in Table 7 for the LRS benchmarks of High School 1 indicated a loss between benchmark 1 and benchmark 3 nor the other three high schools. However, the means from the TOSWRF benchmarks showed a gain between benchmark 1 and benchmark 3 from High School 1, High School 2, and High School 3. The researcher chose benchmark 1 and benchmark 3 as the comparison because benchmark 1 was given at the beginning of the school year as the fall benchmark and benchmark 3 was given at the end of the year as the spring benchmark which should show the most gain due to rigorous intervention being administered over an entire school year as the *LANGUAGE!* program was intended. Hence, it can be suggested statistically that *LANGUAGE!* is effective in closing the reading gap for secondary students with special needs and justified by the differences in LRS benchmarks and TOSWRF benchmarks as demonstrated by High School 1, High School 2, and High School 3 and justified by the gains in the TOSWRF benchmarks as demonstrated by High School 1, High School 2, and High School 3.

Research Question 2

The results from four repeated measures ANOVA were employed to identify if there were any significant differences in Lexile scores using the *LANGUAGE!* reading program's LRS benchmarks. Lexile scores are a method of measuring comprehension

reading levels. All four of the high schools' LRS benchmarks, which determine comprehension levels, were combined as one group (n = 170) to measure the participants' performance in comprehension levels. The repeated measures ANOVA ascertained there were significant gains in Lexile scores using the raw scores from the *LANGUAGE!* reading program with $p < .001$. Although there were significant differences, there were decreases and increases with the means and standard deviations between the LRS benchmarks. A Bonferroni pairwise comparison was run to identify where the differences occurred. A significant difference was detected between LRS benchmark 1 and LRS benchmark 2, as well as between LRS benchmark 2 and LRS benchmark 3. A significant difference was not detected between benchmark 1 and benchmark 3, but was approaching significance with p = .061. The results indicated that even though there was no significant difference between benchmark 1 and benchmark 3 from the Bonferroni correction test, significance was approached with p = .061. Yet, the means indicated a loss from benchmark 1 to benchmark 2 and from benchmark 1 to benchmark 3. The *LANGUAGE!* reading program demonstrated significance in Lexile scores based on the LRS benchmarks with a value of $p < .05$ with the ANOVA and Bonferroni test, but not necessarily through the means and standard deviations.

Research Question 3

In identifying the results for the third research question, the process was conducted in two groups; LRS and TOSWRF. The results for group one was collected from three repeated measures ANOVA that were employed to identify if there were any significant differences from the LRS benchmarks using the *LANGUAGE!* reading program (n = 170) for levels AB, CD, and EF. All four high schools were combined for

each respective level of AB, CD, and EF. In determining if there was a significant improvement of a specific level within the *LANGUAGE!* program, only level CD showed significant differences on the LRS benchmarks with 110 participants out of the 170 tested with $p < .001$, but according to means and standard deviations there was a decrease from benchmark 1 to benchmark 3. Levels AB and EF showed no significant differences, which could be due to the small number of participants compared to the CD level of 110 participants. The AB level had 49 participants and the EF level had only 11 participants, which makes obtaining valid data inconclusive. Although there was a small number of participants, according to means and standard deviations, only level EF showed an increase from benchmark 1 to benchmark 2 to benchmark 3 with an overall increase from benchmark 1 to benchmark 3. Due to the low number of participants the results could be inconclusive.

In addition to summarizing the third research question, the results from three additional repeated measures ANOVA were employed to identify if there were any significant differences in the TOSWRF benchmarks using the *LANGUAGE!* reading program ($n = 128$) for levels AB, CD, and EF. All four high schools were combined for each respective level of AB, CD, and EF. Of the 128 participants, 31 were administered the AB level, 88 were administered the CD level, and 9 were administered the EF level. The number of participants for the EF level is a small pool to obtain data with validity. In determining if there was a significant improvement of a specific level within the *LANGUAGE!* program, level AB and level CD showed significance on the TOSWRF benchmark with $p < .001$, and level EF was approaching with $p = .076$. According to means and standard deviations, level AB demonstrated an increase from benchmark 1 to

benchmark 3 and Level CD demonstrated an increase from benchmark 1 to benchmark 2, a decrease from benchmark 2 to benchmark 3, but benchmark 3 surpassed the base line score set by benchmark 1. Level EF had a decrease from each benchmark, dropping significantly from benchmark 1 to benchmark 3.

The third research question suggested that there was significant improvement of a specific assessment between levels of AB, CD, and EF in the *LANGUAGE!* reading program. Level CD showed significance in both LRS and TOSWRF benchmarks with $p < .001$ and gains with the TOSWRF benchmarks as shown in the means and standard deviations. Level AB showed significance with the TOSWRF benchmarks with $p < .001$ and gains with the TOSWRF benchmarks as shown in the means and standard deviations. There is concern that level EF failed to show any differences in both LRS and TOSWRF, but demonstrated gains in the LRS means and standard deviations. This could be due to having low participation numbers, which limited the validity of the level EF data. The results indicated that level CD demonstrated improvement over level AB and level EF in both LRS and TOSWRF, but due to the low participant numbers of Level EF this can be inconclusive.

Research Question 4

To generate the results for the fourth research question, the process was conducted in two groups, LRS and TOSWRF, using eight repeated measures ANOVA. These test were conducted to identify if there were any significant differences among the four schools using the LRS benchmarks scores and the TOSWRF benchmarks scores. Of the four high schools, High School 1 and High School 3 showed significance in both reading comprehension (LRS) and fluency speed (TOSWRF) benchmarks with $p < .05$ as

significant. High School 2 was approaching significance in LRS with a $p = 0.67$ and demonstrated significance in TOSWRF $p < .001$. High School 4 failed to show any significance in either LRS or TOSWRF benchmarks. High School 1, High School 2, and High School 3 also demonstrated gains with the TOSWRF benchmarks using the means and standard deviations exceeding the base line set by benchmarks 1. All four high schools demonstrated the lack of gains according to the means and standard deviations with the LRS benchmarks. Unfortunately High School 4 showed no differences or gains with LRS benchmarks or TOSWRF benchmarks. High School 1 and High School 3 showed differences with both LRS benchmarks and TOSWRF benchmarks and showed gains only with TOSWRF benchmarks. High School 2 showed both differences and gains with TOSWRF benchmarks. This suggests there is a significant overall difference among the four high schools.

Implications

This project aimed to spark further research at the high school level regarding available programs for adolescents with special needs and/or with nondisabled adolescents. Research should also be conducted to ascertain if these programs are successful. More studies will determine if the presently available programs are sufficient or if there is a need for more programs to be created to accommodate the needs of adolescents that are struggling readers and require intervention to close their reading gaps.

As indicated in the review of literature, research has implied that there are programs available for younger students in the elementary and middle schools and that research has been conducted in large quantities to determine the effectiveness of these

programs for the younger-age student, but there is limited research addressing the older adolescent population (Harman, et al., 2011; Joseph, 2008; Joseph & Schisler, 2009; Slavin, et al., 2008). For the four high schools that were included in this research, two high schools, High School 1 and High School 3, showed evidence of success with the *LANGUAGE!* curriculum-based reading program in both LRS and TOSWRF. One high school, High School 3, showed evidence of success with TOSWRF. Thus, it can be questioned whether other secondary schools would have the same results or would other secondary high schools have results similar to High School 4 that failed to show any significance or gains in both LRS and TSOWRF.

Most noticeably, *LANGUAGE!* implied to be more effective with fluency than reading comprehension from the results of the data that was collected. Three of the four high schools demonstrated significance with TOSWRF where only two high schools demonstrated significance with LRS, with one high school approaching significance with LRS. In addition, three of the high schools demonstrated gains with the TOSWRF with means and standard deviations. This all indicating that *LANGUAGE!* is more effective with fluency than reading comprehension.

Even though the validity in some areas was low, overall validity was comparable with (n = 170) for LRS and (n = 128) for TOSWRF. In conducting another study, a larger sample size could be identified to determine if the same results would be duplicated, in addition to a closer observation of validity of the data and the fidelity of administering the benchmarks, as well as identifying student demographics such as gender, current grade level, and disability identification. Without further research, it was

difficult to determine if the student's disability, current grade, or teacher's experience in teaching *LANGUAGE!* impacted this study.

There is a concern regarding the drop in the number of participants from the original set of students that were in the reading intervention program using *LANGUAGE!*. Only 64% of the participants completed all three LRS benchmarks, and only 48% of the participants completed all three TOSWRF benchmarks. Due to the use of extant data, it was not possible to determine if the students were absent during the testing window, if the students were transient, if the students moved up or down to another level within the *LANGUAGE!* reading program, if the students were exited from the *LANGUAGE!* reading program, or if the students were exited from special education services, therefore being removed from the special education intervention classroom. Perhaps fidelity checks on a regular basis would increase the percentage of students completing all three benchmarks as well as documentation of why students were unable to complete all three benchmarks.

There is a major concern regarding why High School 4 failed to show any significant differences or gains according to the extant raw data that was used for the purpose of this study. High School 4 had one less participant than the highest of all four schools participating in taking the LRS benchmarks and only two less participants than the highest of all four schools participating in taking the TOSWRF benchmarks. High School 4 only demonstrated an increase between TOSWRF benchmark 1 and TOSWRF benchmark 2, then decreasing to benchmark 3 below the original average score set by benchmark 1. Without further research, it cannot be determined if the lack of teaching experience with the *LANGUAGE!* program was a factor or other factors in not acquiring

any significant differences in areas of reading comprehension and fluency speed or the lack of validity from the participants. High School 4 was the only school that taught level EF of the *LANGUAGE!* reading program in the 2016-2017 school year. Due to low participation numbers, validity could be questioned. Perhaps High School 4 might consider eliminating teaching level EF and provide more rigor and time with levels AB and CD in closing the reading gap for students with special needs.

Findings from this study will be useful to teachers in acknowledging the importance of fidelity in administering the benchmarks and maintaining better records to track the effectiveness of the *LANGUAGE!* reading program. The information that was outlined in this study will be useful in acknowledging the importance of teaching reading to struggling high school students and high school students with special needs. Administrators must be aware that content teachers may not be qualified or understand how to teach reading to secondary students and that secondary students need to be taught differently than elementary students. Reading teachers and reading specialist need to be hired to teach these intervention classes through the RTI model. Data must be collected to identify where the students have reading gaps so that the gaps can be addressed and corrected. This study was able to document that the RTI model can be adapted and used in a high school setting for intervention purposes. In addition, this study noted the limited research available on reading intervention programs for the struggling adolescent reader in a high school setting with special needs (Joseph & Schisler, 2009). *LANGUAGE!* is one of the few reading programs that is available to teach the struggling adolescent reader and should be used to improve students' reading comprehension and fluency speed.

Limitations

This study only researched students with special needs. The participants were not randomly selected due to the use of extant data, and the final sample size was smaller than the researcher had predicted. Of the 265 participants, not all students had completed all three LRS benchmarks and/or all three of the TOSWRF benchmarks, which limited the sample size. Due to implementation errors, if a student was missing a single benchmark of LRS, the participant's data was eliminated from the LRS portion of the study, and if a student was missing a single benchmark of TOSWRF the participant's data was eliminated from TOSWRF portion of the study. When researching the levels of *LANGUAGE!*, the EF level of participants was a small sample size prior to the removal of participants due to not completing three benchmarks in either LRS and/or TOSWRF group.

Another limitation was the use of extant data being of convenience. Complete student data would have enriched this study by being able to determine the gender, grade level, and learning deficit of each participant. More consistency and student implementation of the benchmarks would have enhanced the sample size. Using extant data precluded the researcher from being able to prove validity of the data and the fidelity in administering the assessments, teaching the curriculum, and noting the experience of each teacher involved in collecting the data. In using extant data, the researcher was also unable to determine if the participants were placed in the appropriate level of *LANGUAGE!*.

Future Research

The *LANGUAGE!* reading program was designed for adolescents who needed reading intervention instruction in smaller parts and increased rigor. The *LANGUAGE!* reading program is intended for a full year of rigorous instruction following the curriculum-based guidelines that are outlined in the curriculum. A longitudinal study following adolescent students with special needs and nondisabled students, from the time the students enter the program to the time the students are exited from the program, while documenting their progression from the beginning of the program to the end of the program, would be an interesting study. In following the students, data would be collected on yearly student improvement, sustainability of the improvement during the progression of the program, and length of time students remained in the program determined by semester or calendar year. Similarly, it could be determined if special needs students were exited from special education services when they were exited from the program. Subsequent investigation could determine if students showed gains in other areas in addition to the reading program if *LANGUAGE!* was used as an intervention.

Additional future research could complete the same or similar study, as documented, to determine each student's disability and to determine if there is a significant difference based upon a student's disability, grade level, and gender. Another research study would be to interview special education teachers and/or general education teachers who are teaching *LANGUAGE!* as an intervention Tier 3 and determine their perspective of the program and its effectiveness in teaching students with specials needs and/or nondisabled students.

A final research study could be completed documenting the shared ownership and responsibility of teaching reading in the high schools through the partnership of special education and inclusion classes. A case study could be conducted of students that are in Tier 3 reading intervention for nondisabled students and students that are in Tier 3 reading intervention through the special education program and are also in a Tier 1 inclusion class. This study could research the gains that the students acquire in Tier 3 and the rate of their self-efficacy and growth mindset through a survey. Teachers of all three classes would be interviewed in regards to their shared relationship of the students, professional learning communities (PLC) data, progress monitoring data, programs and strategies being used in both Tier 1 and Tier 3, as well as if the student is showing gains in other content area classes.

Conclusion

More examples and information on how the RTI framework can be adapted for the secondary level are needed so that more high schools can provide intervention for the struggling readers through the RTI framework. More professional development is needed on how to teach the struggling adolescent reader and the adolescent reader with special needs with the use of *LANGUAGE!* or other available reading programs. Within the professional development, teachers would be taught the proper way of teaching *LANGUAGE!* and administering the assessments and benchmarks. This professional development needs to be an ongoing process within districts with fidelity checks to monitor success or the lack of as well as to determine if more individual training is needed for the teachers. Within the professional developments, there can be share sessions among the teachers on how they are being creative with the *LANGUAGE!*

reading program and in motivating the adolescent mindset. Along with motivating the student's growth mindset, a session on teacher's mindset would be beneficial. If a teacher does not have a growth mindset, then they will not be able to motivate the student's growth mindset (Rattan, et al., 2015). With a growth mindset, students will develop a self-efficacy that they can overcome their reading deficit and have academic success (McCabe & Margolis, 2001). These professional developments could be designed as a professional learning communities (PLC) where teachers learn to read the data and share their data with each other to seek out the reading gaps and how to close or eliminate the reading gaps of the struggling adolescent reader.

The findings from this study suggests that *LANGUAGE!* was effective in closing the reading gap for secondary students with special needs. Three of the four high schools included in this study demonstrated significance in either reading comprehension (LRS) or fluency speed (TOSWRF), or both areas in some instances. Three of the four high schools included in this student demonstrated gains in TOSWRF from benchmark 1 to benchmark 3 according to means and standard deviations. It is evident from the literature review that there are limited studies on secondary students with reading issues, with special needs and/or nondisabled students. More research is needed in determining what reading programs are available for secondary students with special needs and/or nondisabled students in a high school setting and the effectiveness of these programs in closing the reading gap for these students.

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APPENDICES

APPENDIX A

SLD, ID, FD, LI

A person identified with a specific learning disability (SLD) has a disorder that limits their understanding of language in spoken and/or written forms. This disorder can also affect the ability to listen, think, read, speak, write, spell, and/or perform adequately math problems (IDEA 2004 as cited by Kavale, Spaulding, & Beam, 2009). The definition of SLD has not changed in over 40 years (Kavale et al., 2009) although the achievement gap has continued to increase. A student identified as being intellectually delayed (ID) has significant limitations in both intellectual functioning and in adaptive behavior. Adaptive behavior includes a person's social and practical skills faced in daily life. The determination of a student being identified ID is done before the student reaches the age of 18. Intellectually delayed (ID) replaced the previous category/terminology of mental retardation (MR), (Williamson County Schools, 2016). Someone identified as functionally delayed (FD) has a continuous significant disability in intellectual functioning which affects the ability to progress in the general curriculum, but adaptive behavior is not significantly impaired. Academically, the student will struggle, but socially the student is able to perform in the home and community near the level of their peers. For students to be identified as FD, are shown to perform at or below the fourth percentile in two or more areas of: basic reading skills, reading fluency skills, reading comprehension, math calculations, math problem solving, and written expression (tn.gov, n.d.a; Williamson County Schools, 2016). A student's adaptive scores must fall above the level of intellectual disability (ID) eligibility standards (Williamson County Schools, 2016). Another disability would be language impairment (LI) which means a

communication disorder. A student who is LI has a deficiency in the ability to gain information in language skills and/or the ability to use expressive language skills. This could include the interruption in the flow of speech as in fluency due to repeating words or taking too long to pronounce sounds, (tn.gov, n.d.b).