

2014

# The Effects of the Read 180 Program on Oral Reading Fluency, Linguistic Comprehension, and Reading Comprehension with Secondary Special Education Students

David Lyon Teja

University of San Francisco, [dteja@chicousd.org](mailto:dteja@chicousd.org)

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The University of San Francisco

THE EFFECTS OF THE READ 180 PROGRAM ON ORAL READING FLUENCY,  
LINGUISTIC COMPREHENSION, AND READING COMPREHENSION WITH  
SECONDARY SPECIAL EDUCATION STUDENTS

A Dissertation Presented  
to  
The Faculty of the School of Education  
Learning and Instruction Department

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

by  
David L. Teja  
San Francisco  
May 2014

THE UNIVERSITY OF SAN FRANCISCO  
Dissertation Abstract

The Effects of The READ 180 Programs on Oral Reading Fluency, Linguistic Comprehension,  
and Reading Comprehension With Secondary Special Education Students

There is great concern about secondary special education students reading achievement in decoding, listening comprehension, and reading comprehension. The READ 180 Program is an evidence and scientific based reading program that includes direct instruction, computer aided instruction, and reading materials that are high interest and implement the common core. The purpose of this study was to see the differences in oral reading fluency, linguistic comprehension, and reading comprehension in a pretest posttest model over a fourteen-week testing period. Ten ninth grade secondary students who were reading below the 25<sup>th</sup> percentile were instructed with the READ 180 Program with fidelity (90 minutes a day, four days a week, for fourteen weeks). The students were pretested and posttested with the Listening Comprehension Adolescent and the Gate MacGinitie Reading Comprehension Test. The students oral reading fluency was progressed monitored weekly with one minuet timed eighth grade reading probes from easyCBM that tracked total words read correctly, and the total number of miscues (words mispronounced, or omitted). The results showed that the students increased in the number or words read correctly and had a statistically significant decrease in miscues. In addition, on the Listening Comprehension pretest and posttest, the students realized a statistically significant increase on their posttest scores. The reading comprehension pretest and posttest scores did not see any change over the fourteen-week testing period. The results of the study conclude that the READ 180 Program had an effect on the student's oral reading fluency and listening comprehension posttest scores.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

David L. Teja

May 22, 2014

Candidate, David L. Teja

Date

Dissertation Committee

Xornam Apedoe

May 22, 2014

Chairperson, Dr. Xornam Apedoe

Date

Yvonne Bui

May 22, 2014

Dr. Yvonne Bui

Date

Christopher Thomas

May 22, 2014

Dr. Christopher Thomas

Date

## Acknowledgements

I would like to thank my dissertation committee for their wisdom and desire to see this study be conducted. I would like to specifically thank Dr. Christopher Thomas for his gentle professionalism and encouragement. He helped this study stay relevant and practical for the field of education. I would like to thank Dr. Yvonne Bui for her brilliant contributions with all of the rigor of the study, with all of the technical details, and her repeated amount of feedback. She made this study applicable to the field of special education with relevancy and integrity. I want to give special thanks to Dr. Xornam Apedoe. Although Dr. Apedoe is not a special educator, she agreed to work with me on this study as my chair. Her amazing “can do” positive attitude was the driving force in the completion of this study. As a long distance student to the University of San Francisco, Dr. Apedoe “Skyped” with me on a weekly to monthly basis. This helped me feel connected to the University, part of the USF community, and gave me the encouragement to complete this study. Additionally, Dr. Apedoe prodded me along with encouragement, leadership, advocacy, and rigor. I am forever thankful for my outstanding dissertation committee.

## Dedication

I want to dedicate this dissertation to my father G. Dave Teja and my grandfather Bachan Singh Teja. As an immigrant scholar that came from India in 1920, Bachan Singh Teja always instilled the American Dream with an emphasis of community into my life. He was vital part of my youth and young adulthood until his death in 1992. He challenged me to live the American Dream, taught me work ethics, and he promoted higher education for the service of community. I am honored to have had such an important role model.

My father G. Dave Teja had his father's beliefs of following the American Dream with service to community instilled in him as a young boy who also lived his life to the fullest. As an alumnus of the University of San Francisco School of Law (Class of 1958) he was immediately drafted into the United States Army where he served with integrity and a sense of duty. Upon discharge from the Army, G. Dave Teja became Public Defender, District Attorney, and a Municipal Court Judge in his childhood community of Yuba City, California. He was a public servant for over twenty years for the County of Sutter raising his family one block from his childhood home in Tierra Buena. My father was thrilled that I was attending the University of San Francisco and following his legacy at this fine institution until his sudden death in August of 2012. The combination of both my grandfather and father instilled a huge commitment to change lives by dedicating my career to building community. I thank my grandfather and father for instilling these values into my life.

I want to dedicate this dissertation to my children, family, and friends that have stood by me while I have followed the dream. My son, Jordan has been dedicated to my attendance and completion of this program. Although I missed travel soccer games, sporting events, and school events, he has remained positive and loving through the whole process. My daughter, Josette, has been an amazing support through this journey. Although I missed father and daughter dances and cheerleading at football games, she has never given up on helping me finish the program. I thank my children for their sacrifices and I hope that I pass on the tradition of chasing the American Dream and building community into both of their lives.

My sister Lorie and her husband Bob have been an encouraging source for my completion of the program. My dear friends the Gilbert's and many others have been supportive, encouraging, and positive promoters of the completion of this program. My final dedication is to Donald "The Don" Milano who told me I was smart, be proud, and get it done until his passing in early 2014. This last one is for you Don!

## TABLE OF CONTENTS

Abstract.....	ii
Signature Page.....	iii
Acknowledgements.....	iv
Dedication.....	v
Table of Contents.....	vi
List of Tables.....	xi
List of Figures.....	x
Chapter.....	Page
I. INTRODUCTION.....	1
Statement of the Problem.....	1
Purpose of the Study.....	5
Significance of the Study.....	6
Theoretical Framework.....	8
Background and Need.....	19
Summary.....	42
Research Questions.....	43
Definition of Terms.....	44
II. REVIEW OF LITERATURE.....	49
Oral Reading Fluency.....	49
The Oral Reading Fluency Construct.....	50
Oral Reading Fluency as an Assessment Tool.....	51
Oral Reading Fluency Instructional Strategies.....	56
Oral Reading Fluency and The Read 180 Program.....	68
Oral Reading Fluency as a Predictor of Reading Comprehension.....	58
Linguistic Comprehension.....	60
Reading Comprehension With Secondary Special Education Students.....	63
Computer Aided Instruction.....	64
Strategy Instruction.....	65
Graphic Organizers.....	66
Hands On Learning.....	67
Direct Instruction.....	68

Teacher and Peer Modeling.....	69
Frequent Feedback.....	71
The Read 180 Program.....	72
Effectiveness of the READ 180 Program.....	75
Summary.....	82
III. METHODOLOGY.....	84
Research Questions.....	84
Research Design .....	85
Sampling Procedure.....	85
Protection of Human Subjects.....	89
Instrumentation.....	89
easy CBM Oral Reading Fluency Probe.....	89
The Listening Comprehension Test Adolescent.....	91
The Gates McGinitie Reading Test.....	92
Procedures and Treatment.....	93
Pretest Phase.....	94
The Read 180 With Fidelity Phase .....	94
Posttest Phase.....	96
Data Analysis.....	97
Research Question 1.....	97
Research Question 2.....	97
Research Question 3.....	98
Summary.....	98
IV. RESULTS.....	100
Research Question 1.....	101
Research Question 2.....	113
Research Question 3.....	114
Summary of Results.....	115
V. CONCLUSION, RECOMMENDATIONS, AND IMPLICATIONS.....	118
Summary of the Study.....	119
Discussion of Research Questions.....	119
Conclusions.....	125
Limitations.....	127
Implications.....	128
Research Implications.....	131
Education Implications.....	131
Summary.....	132



REFERENCES.....	135
APPENDIX A Permission Letter.....	145
APPENDIX B Informed Consent.....	147
APPENDIX C Cover Letter.....	150
APPENDIX D Easy CBM Oral Reading Fluency Student Copy and Assessor Copy Samples in Eighth Grade.....	153
APPENDIX E The Listening Comprehension Adolescent.....	156
APPENDIX F The Gates-MacGinitie Reading Tests Level 10/12 Form T.....	165

Tables

Table 1: How The READ 180 Program Instructs to The Simple View of Reading.....19

Table 2: Demographic Data on Ten Ninth Grade Students With Learning Disabilities That Includes Age, Ethnicity, English Language Learner Status, Full Scale Intellectual Quotient, and READ 180 Pretest Lexile Scores.....88

Table 3: The Wilcoxon Signed-Rank Non-Parametric Test on Medians and Standard Deviations from Pretest and Posttest Listening Comprehension Test Adolescent.....114

## Figures

Figure 1: Graphic Depiction of The Simple View of Reading.....	15
Figure 2: Student One CBM Monitoring Graph.....	103
Figure 3: Student Two CBM Monitoring Graph.....	104
Figure 4: Student Three CBM Monitoring Graph.....	105
Figure 5: Student Four CBM Monitoring Graph.....	106
Figure 6: Student Five CBM Monitoring Graph.....	107
Figure 7: Student Six CBM Monitoring Graph.....	108
Figure 8: Student Seven CBM Monitoring Graph.....	109
Figure 9: Student Eight CBM Monitoring Graph.....	110
Figure 10: Student Nine CBM Monitoring Graph.....	111
Figure 11: Student Ten CBM Monitoring Graph.....	112
Figure 12: easyCBM Progress Monitoring Average Miscues by Week for Ten Students.....	113

## Chapter 1

### Statement of the Problem

Representatives in the United States Department of Education continue to have concerns about the literacy levels of secondary students upon graduation from high school (Deschler & Hock, 2007). One of the areas that have been identified as lacking is the ability to read at grade level and comprehend what is read (Hernandez & Casey, 2011). According to the Progress in International Reading Study (TIMSS & PIRLS International Study Center, 2011), secondary students in the United States continue to rank below countries such as Hong Kong, The Russian Federation, Finland, Singapore, and Northern Ireland on literacy skills such as reading, writing, mathematics, and science (Mullis, Martin, Foy, & Drucker, 2011). The United States was ranked sixth out of 44 countries on the overall reading achievement which included reading subscales for access and retrieval, integration and interpretation, reflection and evaluation, comprehension of continuous texts, and non-continuous texts (Mullis, Martin, Foy, & Drucker, 2011).

Secondary students who are reading and comprehending below grade level continue to be a focus in American schools (Chall, 1990, Pisecco, Baker, Silva, & Brooke, 2001; Perie, Grigg, & Donahue, 2005). Many of these student's fit into subgroups outlined by the No Child Left Behind Act (NCLB, 2001), and are English language learners (ELL), economically disadvantaged students, students in major racial and ethnic groups, or students with learning disabilities (LD) who receive special education services.

Secondary students who do not read and comprehend well at the secondary level have a higher dropout rate which has been correlated to a student's literacy level, economic outcome, and societal success (Kurlaender, Reardon, & Jackson, 2008). Current estimates suggest that the high school dropout rate in the United States is about 23%, with dropout rates higher depending

on factors such as ethnicity, gender, language, and social class (Hauser, Simmons, & Pager, 2004). Nationally, the data show that females graduate at higher rates than males, and whites and Asians graduate from high school at higher rates than African Americans and Hispanics (Swanson & O'Connor, 2011). Dropout rates are estimated nationally at 35% for Hispanics and Blacks (Heckman & LaFontaine, 2007). Additionally, academic achievement and the development of literacy skills (reading and comprehending at grade level) have been associated with high school completion (Rumberger, 2004). Students, who are not proficient readers by the end of the third grade, score below basic or far below basic on state standards tests, and who live in poverty are less likely to graduate from high school (Hernandez & Casey, 2011). The risk of dropping out of high school increases with a student's age, with students who are experiencing learning difficulties, and with students who have been retained in elementary and middle school (Rumberger, 2004). School failure in elementary and middle school, and the inability to catch up was one reason stated by high school dropouts for stopping their secondary education (Bridgeland, Dilulio, & Morison, 2006).

Secondary students with disabilities have unique characteristics and have been studied less in the research. According to the Council for Exceptional Children (2001), secondary students with learning disabilities have average intelligence, learn at lower academic rate than their peers, are more difficult to teach, they require specialized curriculum, and they can have difficulty with reading (decoding, listening comprehension, and reading comprehension). Some of the reasons that secondary students with learning disabilities read and comprehend at lower levels is because of their failure to read strategically and to monitor their own understanding of what is being read (Swanson & O'Connor, 2011), they become dependent on their special education teachers to comprehend the information (Mastropieri & Scruggs, 1997), they need

intensive, repeated, explicit instruction to achieve academic success that includes appropriate repetitive opportunities to practice reading comprehension strategies to learn academic content (Mastropierei, Scruggs, & Graetz, 2003), they are not given enough time devoted only to reading text while they are in the special education class (Vaughn, Levy, Coleman, & Bos, 2002), and they lack basic reading processing skills that might improve their reading skills (Gersten, Fuchs, Williams, & Baker, 2001).

Oral reading fluency and the connection with reading comprehension has been studied extensively with students with and without learning disabilities. Many researchers believe there is a direct relationship between oral reading fluency and reading comprehension (Joseph & Schisler, 2009; Rasinski, 2009; Wexler, 2008; Roberts, Torgesen, Boardman, & Scammacca, 2008; Burns, 2007; Hale, et al., 2007; Hasbrouck & Tindal, 2006; Rasinski et al., 2005; Yovanoff, Duesbery, Alonzo, & Tindal, 2005; Archer, Gleason, & Vachon, 2003; Good, Simmons, & Kame'enui, 2001). Oral reading fluency is important because as students with learning disabilities grade level oral reading fluency increases, so does the student's ability to comprehend what is being read (Hale et al., 2007). Oral reading fluency has been studied as a viable tool for progress monitoring in fluency, diagnostics, and reading comprehension (Hasbrouck & Tindal, 2006; Good, Simmons, & Kame'enui, 2001; Fuchs, Fuchs, Hosp, & Jenkins, 2001).

In addition to oral reading fluency, developing reading comprehension requires good linguistic comprehension. Hoover, and Gough (1990) developed the Simple View of Reading that outlines that reading comprehension is the product of two processes, linguistic comprehension and decoding. In a study on linguistic comprehension, Hawkins et al. (2010)

validated The Simple View of Reading and found the linguistic comprehension had a direct impact on reading comprehension (effect size of .87).

Reading research focused on students with learning disabilities has discovered and documented many effective ways to teach oral reading fluency, linguistic comprehension, and reading comprehension to secondary students. There have been a number of programs that have been developed that incorporate decoding and linguistic comprehension (e.g. Corrective Reading, Fast ForWord, Accelerated Reader, READ 180, Read Naturally, Reading Apprenticeship, Reading Mastery, Reading Recovery, Voyager Reading Programs, Success Maker, and Reading Plus) (What Works Clearinghouse, 2010). These programs include, leveled and high interest reading material (level of difficulty, age appropriateness, and importance of information), frequent and on-going progress monitoring, increased instructional reading time, direct instruction and independent practice, multimodality exposure that includes computer aided instruction, and corrective feedback. Sanger, Ritzman, Schaefer, and Belau (2010) found that secondary students who demonstrated more interest in a mixed-methods reading program were more motivated to increase their reading skills. Sanger et al. (2010) concluded that a mixed-methods reading program should be intensive, research based, be highly structured, and include the foundational components of phonemic awareness, phonics, oral reading fluency, vocabulary, and reading comprehension.

According to the Carnegie Council on Advancing Adolescent Literacy (2010) school districts are turning to commercially developed reading interventions like the READ 180 Program which uses a mixed-method format (a combination of direct-instruction, computer-based reading instruction, and independent reading) to teach literacy instruction (reading comprehension, oral reading fluency, vocabulary, spelling, and writing) among at-risk readers in

upper elementary and secondary levels (Slavin, Cheung, Groff, & Lake, 2008). Chicago Public Schools increased the use of the READ 180 Program to 8,600 students in 80 schools during the 2009-2010 school year (Chicago Public Schools, 2009). Scholastic reports that 1.2 million students in 40,000 classrooms in the United States are currently using the READ 180 (Scholastic, 2011). Scholastic claims about the program's effectiveness, suggesting that it can improve the reading levels of students by two to five years with one year of instruction using the READ 180 Program (Scholastic, 2009).

### **Purpose of the Study**

The purpose of this quantitative study was to examine the changes that the READ 180 Program makes in reading comprehension, decoding (oral reading fluency), linguistic comprehension amongst the test population of secondary students with learning disabilities when implemented through a special education pullout model. Ten secondary students with learning disabilities who are being served in special education pullout were instructed with the READ 180 Program. The students completed one pretest and posttest to assess their reading comprehension (Gates-MacGinitie Reading Comprehension Test), and their linguistic comprehension (The Listening Comprehension Test Adolescent). Additionally, the students were given a weekly progress monitoring measure that assessed their oral reading fluency (Curriculum Based Measurement Oral Reading Fluency Probes, easy CBM).

The Northern California high school purchased the READ 180 Program for students with learning disabilities and English Language Learners who tested below the 25<sup>th</sup> percentile upon transition to the ninth grade. The high school's commitment to the READ 180 Program was motivated by low test scores of these two target groups of secondary students on the high stakes



testing (STAR and CAHSEE). The high school committed to a block schedule so that the READ 180 Program could be taught with fidelity in 90 minute blocks to the target students (the students who tested below the 25<sup>th</sup> percentile who were ninth graders with learning disabilities who were being instructed in a special education pull out model or were English Language Learners being taught Language Arts in an English Language Development classroom). Additionally, as the high school moves to implement the common core, the multimodality nature of the READ 180 Program has not been studied with secondary students with learning disabilities as a scientifically based reading intervention. The purpose of this study was to look at the secondary students with learning disabilities and the changes in decoding (oral reading fluency), listening comprehension, and reading comprehension as seen through the Simple View of Reading conducted by Gough and Tunmer (1986).

### **Significance of the Study**

This study is significant for a number of reasons. First, the legal requirements (NCLB and IDEA) that outline evidence-based practice and scientific-based reading programs make this research imperative to understanding what impact a mixed-method literacy intervention like the READ 180 Program might have on secondary students with learning disabilities being served in a special education pullout model. As schools race to implement tiered interventions and the common core across schools in the United States, they are searching for the most efficient and effective reading programs for all target groups. The nature of the mixed-method literacy intervention and intensity of the READ 180 Program might make it a viable intervention if the research can support the effectiveness in developing reading skill for secondary students with learning disabilities.

Second, in general there have not been many reading studies that have been done at the secondary level with students with learning disabilities who are being served in a special education pullout model (What Works Clearinghouse, 2009). The majority of the research that has been conducted with special education students being served in a pullout model has been done at the elementary level (What Works Clearinghouse, 2009). The READ 180 Program needs to be studied further with secondary students with learning disabilities in a special education pullout model to see the effectiveness of the READ 180 intervention on the students' reading skill (i.e., decoding, linguistic comprehension, and reading comprehension). Understanding how this intervention works with students with learning disabilities at the secondary level will make an important contribution to the literature about effective reading interventions.

Third, the NCLB, the IDEA, and California's push toward the common core require that schools implement evidence based practices that are based on the literature and implement scientific based reading programs for all reading curricula that is being taught at the secondary level. The NCLB is very specific on the implementation of evidence based scientific based reading programs by the end of the 2014 school year. IDEA suggests that secondary students with learning disabilities be taught reading intensive tiered interventions like READ 180 in the pull out special education classroom. The current push with common core suggests that depth of instruction may be employed with evidence based scientific based reading interventions that develop literacy skills across the content. The READ 180 Program is grounded in evidence-based practices, is a scientific-based reading program, it is tiered for intensive instruction, and it meets the essence of NCLB, IDEA, and the implementation of common core (Scholastic, 2009).

Fourth, this research might provide valuable information about the change in oral reading fluency, listening comprehension and reading comprehension amongst the test population of secondary students with learning disabilities that might add insight into the changes in reading comprehension. This information would be valuable for secondary teachers and school districts of students with learning disabilities being served in a tiered intensive pullout model. Districts considering the expense and intensity of the READ 180 program for secondary students with learning disabilities might be interested in the results of this study.

Finally, with the current push to common core, the mixed methods instructional approach of the READ 180 Program may be of great interests to schools as they implement the common core. The READ 180 Program utilizes computer-aided instruction, direct instruction, and hands on learning to enhance a student's success with the program. As literacy skills are going to be taught across contents, the Smarter Balanced Assessments will be given with technology (computers, and technology books), and the content will push student learning to new levels, the READ 180 Program has is naturally imbedded with skills students will need to take full advantage of the common core. The READ 180 Program is a mixed methods scientific approach to reading that has many common core prerequisite skills imbedded into the program.

### **Theoretical Framework**

The Simple View of Reading can serve as a theoretical rationale as it includes three constructs that are being measured in this study (decoding, linguistic comprehension, and reading comprehension). The Simple View of Reading was introduced in the research on reading comprehension conducted by Gough and Tunmer (1986). The Simple View of Reading emphasizes decoding and linguistic comprehension in building reading comprehension. Since

The Simple View of Reading was introduced, considerable evidence has been collected that supports this theory (Aaron, Joshi, & Williams, 1999; Carver, 1998; Hoover & Gough, 1990). For example, two longitudinal studies have been conducted in a large investigation on reading comprehension (n=570, second, fourth, and eighth grade students, and n=453, second, fourth, and eighth grade students) and the results provide strong support for The Simple View of Reading (decoding + linguistic comprehension = reading comprehension) (Catts, Hogan, Adolf, & Barth, 2003).

The current study was modeled after a quasi-experimental study conducted by Tilstra et al. (2009). The study included 271 students, although none of the students were gifted or special education students. The Tilstra study examined the Simple View of Reading and the effect of linguistic comprehension and decoding (oral reading fluency) on reading comprehension for students in elementary, middle, and secondary school. The participants were assessed in a pre-test/post-test model using the Gates-MacGinitie Reading Comprehension test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000), the Iowa Test of Basic Skills (ITBS) Listening Comprehension subtest (Hoover, Heironymus, Frisbie, & Dunbar, 1996) and a Curriculum-Based Measurement (CBM) maze reading task (Deno, 1985; Espin & Foegen, 1996). Tilstra et al. concluded that (a) the Simple View of Reading is a relevant communication tool to help educators understand the factors that influence reading comprehension, (b) the model helps identify the factors and how they may shift as readers develop, and (c) the Simple View of Reading explains a large portion of variance in reading comprehension from elementary to secondary settings.

This study explored the effectiveness of the READ 180 Program as an intensive reading intervention to increase the reading skills (decoding, linguistic comprehension, and reading

comprehension) of secondary students who are served in a pullout special education model, and are qualified for special education as students with a learning disability. The READ 180 Program is an interactive reading program that combines English Language Arts direct instruction in reading and spelling, computer aided instruction that is leveled, a CD-rom library for guided and modeled reading, and an integrated spelling program. One of the goals of the READ 180 Program is to improve reading skills for students in all areas including oral reading fluency, linguistic comprehension, and reading comprehension (Scholastic, 2009).

The theoretical orientation of this study can be grounded in the reading component model of reading outlined in *The Simple View of Reading* (Gough & Tunmer, 1986; Hoover & Gough, 1990; Aaron, Joshi, & Williams, 1999; Aaron & Joshi, 2006). *The Simple View of Reading* provides a framework that outlines the two processes and skills that students need for reading comprehension: (a) word decoding (oral reading fluency) and (b) linguistic comprehension skills (Hoover & Gough, 1990; Kendeou, Savage, & van den Broek, 2009). Hoover, and Gough (1990) suggest that both decoding (oral reading fluency) and linguistic comprehension should be acquired together for success in reading comprehension. Kendeou, Savage and van den Broek (2009) assert that linguistic comprehension combined with decoding are core components that help students learning reading comprehension. Reading is a complex activity, and the strength of *The Simple View of Reading* is the simplicity of the model with meaningful and testable outcomes that are predictable (Hoover & Gough, 1990).

Hoover and Gough (1990) define decoding as "the ability to rapidly derive a representation from printed input that allows access to the appropriate entry in the mental lexicon, and thus, the retrieval of semantic information at the word level (Hoover & Gough, 1990, p. 130)." To assess decoding using the theory (*The Simple View of Reading*) one must

assess "skill in deriving appropriate phonologically-based representation of novel letter strings (e.g. by assessing the ability to pronounce isolated real words, or by assessing the ability to pronounce isolated pseudo words (Hoover & Gough, 1990, p. 130)." This definition goes beyond the traditional definition of decoding as the ability to sound out words based on phonics rules. The meaning of decoding expands to include fast and accurate reading of familiar and unfamiliar words in both lists and connected text (Gough & Tunmer, 1986).

Research using the Simple View of Reading was conducted on bilingual elementary students in grades 1-4. The literature has expanded to secondary and adult students who have been measured based on the Simple View of Reading theory and these researchers have added oral reading fluency as a measure of decoding which impacts reading comprehension (Tunmer & Chapman, 2012; Macaruso & Shankweiler, 2010; Tilstra et al., 2009; Cutting & Scarborough, 2006; Jenkins, Fuchs, Van den Broeck, Espin, & Demp, 2003; Joshi & Aaron, 2000; Ransby & Swanson, 2003). Tilstra et al. (2009) define decoding as "the ability to group words into meaningful grammatical units to read quickly, effortlessly, and with expression (p. 385)." Decoding (reading fluency) is "commonly measured as the number of words read correctly in one minute, has been demonstrated to have a significant positive relationship to overall reading proficiency, decoding, and reading comprehension (p. 385)." Tilstra et al. (2009) point out there are differences in elementary and secondary students, and why decoding needs to include an oral reading fluency component to build secondary students reading comprehension when using the Simple View of Reading theoretic rationale.

Hoover, and Gough (1990) explain that linguistic comprehension is the ability for the student to take spoken words, make interpretations, and allow the student the ability to interpret and understand the language. That is, linguistic comprehension is "the ability to take lexical

information (semantic information at the word level) and derive sentence and discourse interpretations (Hoover & Gough, 1990, p. 131)." According to Hoover and Gough (1990), linguistic comprehension assessment needs to include "the ability to answer questions about the contents of a read narrative (Hoover & Gough, 1990, p. 131)." Language comprehension (LC) is called by several other names in various studies, including linguistic comprehension, listening comprehension, and comprehension. All of these terms are defined as the ability to derive meaning from spoken words when they are part of sentences or other discourse. According to Catts, Adolf, and Weismer (2006), language comprehension abilities, at a minimum, encompass "receptive vocabulary, grammatical understanding, and discourse comprehension (p. 1390)".

The Simple View of Reading (1990), defines reading comprehension as the "the ability to take lexical information (i.e., semantic information at the word level) and derive sentence and discourse interpretations... (p. 131)." Additionally, "reading comprehension involves the same ability (as linguistic comprehension), but one that relies on graphic based information arriving through the eye (p. 131)." Reading comprehension (RC) differs from linguistic comprehension (LC) because the student must be able to process print, as opposed to oral language which includes the ability to perceive the words and derive meaning (Hoover & Gough, 1990). According to Hoover and Gough (1990) linguistic comprehension becomes reading comprehension when the word meaning is derived from print.

Kamhi (2007) describes the differences between decoding (word recognition) and reading comprehension as it relates to theoretical rationale of The Simple View of Reading. Decoding can be taught, but reading comprehension is not a skill and cannot be easily taught. Kamhi explains that word recognition can be taught because it involves a narrow scope of knowledge (e.g. letters, sounds, words) and processes (decoding) that, once acquired, will lead to fast,

accurate word recognition. Kamhi explains that reading comprehension is not a skill, but it is a complex function of higher-level mental processes that include thinking, reasoning, imagining, and interpreting. According to Kamhi, this higher-level processing involved in reading comprehension is dependent on having specific knowledge in a content area, and this makes reading comprehension primarily knowledge-based, not skills-based.

In the Simple View of Reading model both decoding and language comprehension skills are equally important to reading comprehension. If a student's ability to decode words (oral reading fluency) and understand text (linguistic comprehension) is high, then it can be predicted that the student will not have difficulty with reading comprehension. According to the Simple View of Reading and the synthesis of research about the theory, if the student has difficulty with either decoding (oral reading fluency), and/or linguistic comprehension, then there will be a direct negative effect on a student's reading comprehension.

The Simple View of Reading suggests that reading comprehension (R) can be represented as the product of word recognition skill (D) (Decoding/Oral Reading Fluency) and language (linguistic) comprehension skill (L), as is represented in the following equation

$$R = D \times L$$

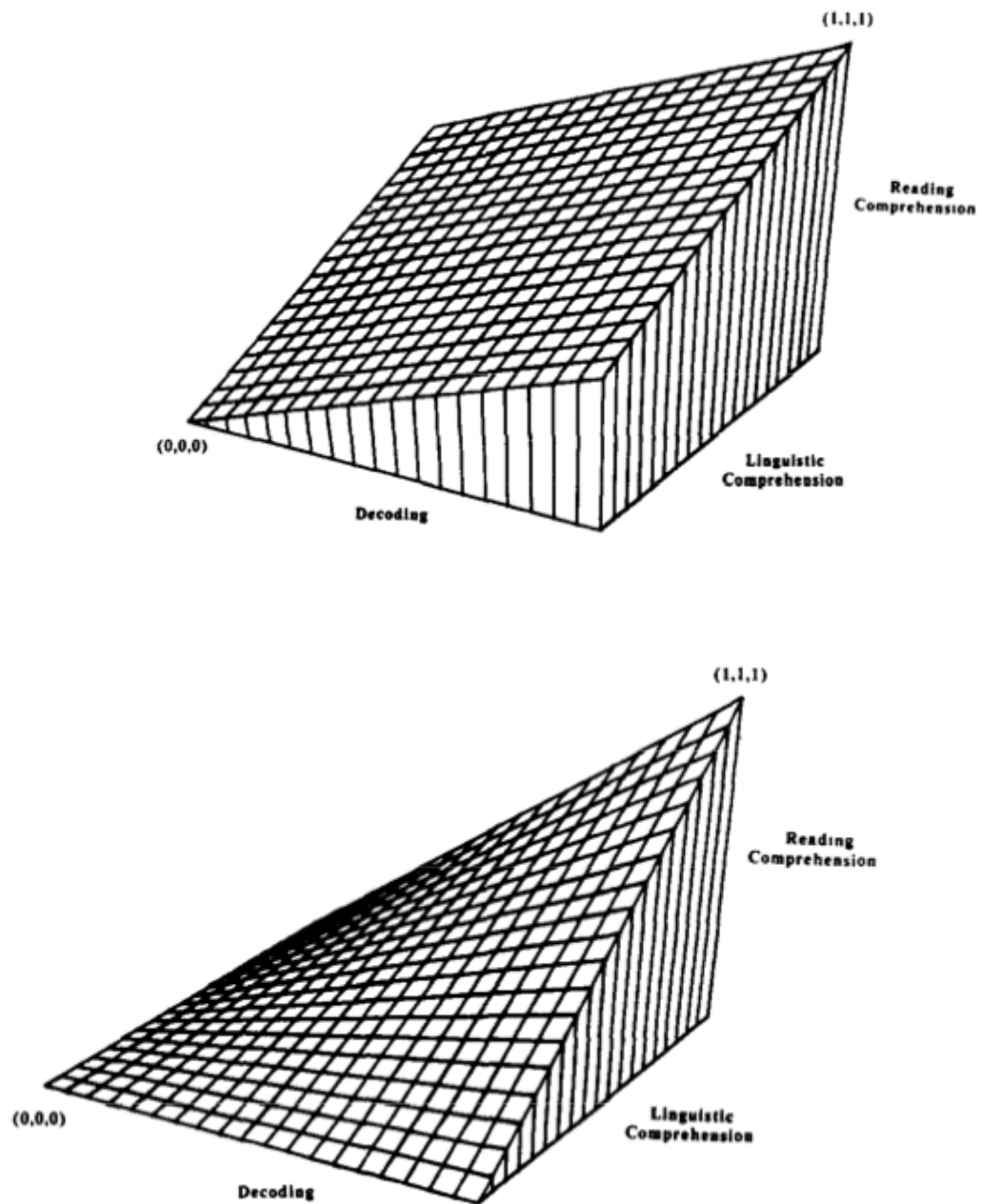
The variables (R, D and L) can be assigned a value ranging from 0 to 1 (e.g., 1=perfect skill in one area, 0=lacking skill in one area), and the formula can be used to predict reading comprehension ability. So for example, if  $D=0$  and  $L=1$  then  $R = 0 \times 1$ , which is 0, thus the Simple View of Reading Model would predict that the student would do poorly with reading comprehension. Likewise, if  $D=1$  and  $L=0$  then the Simple View of Reading Model would predict that the student would once again do poorly with reading comprehension (Hoover &



Gough, 1990). This highlights the importance of having both decoding skill and linguistic comprehension skill for good reading comprehension (Figure 1).

Figure 1 is a graphic model of the Simple View of Reading that depicts each of the elements (decoding and linguistic comprehension) and their effect on reading comprehension. The graphic on the top of Figure 1 displays two factors (decoding and linguistic comprehension) influence a student's reading comprehension outcome measure (0, 0, 0= nullity or no skill, 1, 1, 1= perfection or high skill). If decoding is at 0 (nullity) and linguistic comprehension is at 0.5 (some skill), then the student's reading comprehension is lower. A student will need to develop both decoding skills and linguistic comprehension skill to realize an increase in a student's reading comprehension skill (1, 1, 1=perfection).

The second graphic in Figure 1 represents no skill in decoding or linguistic comprehension (0, 0, nullity). This lack of skill affects a student's reading comprehension (0, 0, 0=nullity). When decoding and linguistic comprehension moves up to a 1 (1, 1=perfection), then based on this theory a student's reading comprehension follows to a 1 (1, 1, 1=perfection).



*Figure 1.* Graphic depiction of the simple view of reading (1990). The figure displays the relationships between decoding (D), linguistic comprehension (L), and reading comprehension (R), where each ranges from nullity (0, 0, 0) to perfection (1, 1, 1).

### **Research on the Simple View of Reading**

The Simple View of Reading has been validated by the research and has been shown to account for approximately 40% to 80% of the variance for reading comprehension for reader's

ages eight to sixteen (Catts, Adlof, Hogan, & Weismer, 2005; Johnston & Kirby, 2006; Joshi & Aaron, 2000). The Simple View of Reading has been validated as a conceptual framework for teachers because it is easy to apply, and promotes a framework of understanding the complex construct of teaching reading (Tilstra et al., 2009). In line with The Simple View of Reading it has been suggested that teachers should employ different and varied teaching strategies that include decoding and reading comprehension skill development (Kendeou, Savage, & van den Broek, 2009).

A meta-analysis was conducted on 33 studies to look at the validity of The Simple View of Reading and reported on reading comprehension, decoding, and language (linguistic) comprehension for students who were between the ages of five and twelve, (Florit & Cain, 2011). The researchers concluded that The Simple View of Reading is a useful model for researchers and teachers, it has been used successfully as a framework to study students who demonstrate reading difficulties, and the philosophy of the Simple View of Reading should continue to focus on oral reading fluency (decoding), and linguistic comprehension which should have an effect on reading comprehension (Florit & Cain, 2011). The Simple View of Reading has been validated through a factor analysis of the original data set (Kendeou, Savage, & van den Broek, 2009). The findings support the generality and validity of the Simple View of Reading as a conceptual framework in an era of evidence-based approaches to education (Kendeou, Savage, & van den Broek, 2009; Individuals with Disabilities in Education Act, 2004).

Tilstra et al. (2009) conducted a study across grade levels (fourth, seventh, and ninth grade readers, n=271) to explore the application of the theory to determine if the components of the Simple View of Reading (decoding, and linguistic comprehension) played a role in a students' reading comprehension across grade levels (elementary, middle, and high school). The

researchers screened the participants using the Gates-MacGinitie Reading Comprehension Test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000) which assesses a student's comprehension of prose passages, and the Iowa Test of Basic Skills (ITBS) Listening Comprehension subtest (Hoover, Heironymous, Frisbie, & Dunbar, 1996) which assesses strengths and weaknesses in listening comprehension using a multiple-choice format testing six major skills (literal meaning, inferential meaning, following directions, visual relationships, numerical/spatial/temporal relationships, and speaker point of view). Tistra et al. (2009) also used a Curriculum-Based Measurement (CBM) maze-reading task (Deno, 1985; Espin & Foegen, 1996) which is a general outcome measure of students' reading proficiency. Tistra et al. (2009) assert that the Simple View of Reading explains a large proportion of the variance for the factors influencing a student's reading comprehension (decoding, listening comprehension, verbal proficiency, and reading fluency). For ninth grade students, Tilstra et al. (2009) found that decoding explained 17% of the variance in reading comprehension, and listening comprehension explained an additional 21% of the variance in reading comprehension. Tilstra et al. (2009) concluded that the Simple View of Reading is an important communication tool that helps teachers comprehends factors influencing reading comprehension for elementary, middle, and secondary grade readers.

Kirby, and Savage (2008) reviewed empirical studies that were conducted with the Simple View of Reading, and they examined the applicability and validity of the theory. They conclude that the Simple View of Reading is an important function in a broad framework of educational efforts to conceptualizing the learning of reading comprehension by focusing on the importance of decoding, and linguistic comprehension.

## The Simple View of Reading and the READ 180 Program

The three variables (decoding/oral reading fluency)(D), linguistic comprehension (LC), and reading comprehension (RC) are defined in detail above as they are described in the Simple View of Reading. The READ 180 Program instructs toward each of these variables (see Table 1). The Direct Instruction (DI) component of the program instructs to all three of the variables. The student is taught decoding/oral reading fluency strategies during the DI that they use during the CAI, CD-ROM Library and Whole Class Wrap-Up. Additionally, LC is a prerequisite skill (the understanding of the English language) and is taught during the DI. The students will use LC during the CAI, the CD-ROM Library, and the Whole Class Wrap-Up. RC is used during DI, CAI, CD-ROM Library, and the Whole Class Wrap-Up. An increase in Decoding/Oral Reading Fluency, LC, and RC are three of the goals of the READ 180 Program.

Table 1  
How The READ 180 Program Instructs to The Simple View of Reading

Variable	Direct Instruction	Computer Aided Instruction	CD-ROM Library	Whole Class Wrap-Up
Decoding/Oral Reading Fluency	Yes	Yes	Yes	Yes
Linguistic Comprehension	Yes	Yes	Yes	Yes
Reading Comprehension	Yes	Yes	Yes	Yes

The theoretical rationale that embodies the Simple View of Reading is related to this study because oral reading fluency (decoding) (using Curriculum Based Measurement oral reading fluency probes) and linguistic comprehension (using The Listening Comprehension Test Adolescent) will be measured on secondary students with learning disabilities to see if there is an effect on their reading comprehension (using the Gates-MacGinitie Reading Comprehension tests) in a pre/post test design. The Simple View of Reading takes into account that students who have low oral reading fluency skills (decoding) and/or linguistic comprehension skills need to build these skills in order to realize an increase in their reading comprehension. The READ 180 Program will be the program that will be measured to see the effect on the oral reading fluency (decoding) skills and linguistic comprehension skills of secondary students with learning disabilities.

### **Background and Need**

In this section, a background of reading comprehension with secondary students with learning disabilities will be provided and a justification as to why this study is needed. To begin,

the importance of literacy skills for secondary students with learning disabilities are discussed in the context of reading comprehension. Next, several aspects of reading comprehension are discussed as follows: (a) the importance of literacy skills (b) policy and law factors (c) reading strategies and instruction for secondary students with learning disabilities (d) the READ 180 Program, and (e) assessing oral reading fluency (g) assessing linguistic comprehension and (h) assessing reading comprehension.

### **The Importance of Literacy Skills**

According to the Alliance for Excellent Education (2011), reading proficiency is a top priority in education. A lot of emphasis has been placed on increasing early literacy skills in elementary and secondary schools to effect long-term literacy acquisition and academic success (Lenz, Deshler, Schumaker, & Ehren, 2011; No Child Left Behind Act, 2001). Unfortunately, current data indicates that 25 percent of the nation's eighth graders and 27 percent of the nation's twelfth graders read below the basic level in reading which means that these students do not have even partial mastery of the appropriate grade-level skills and knowledge (Lee & Grigg, 2007; Alliance for Excellent Education, 2009). According to the Alliance for Excellence in Education (2009) six million secondary students are reading below grade level. Papplewis (2005) describes skill deficits of struggling secondary readers that include, lack of decoding skills, oral reading fluency, reading comprehension, vocabulary skills, limited background knowledge, an inability to process grade-level text, and low motivation. According to Kamil et al., (2008), essential reading skills include: phonemic awareness, phonics, oral reading fluency, vocabulary, and reading comprehension. Students are leaving the secondary setting without the reading and writing skills needed to be successful in college and in a career, and an increasing number of students must take remedial classes when they enter college (Alliance for Excellent Education,

2009). According to the Alliance for Excellent Education (2009) 7,000 students drop out of high school each day. These students have difficulty with success in advanced literacy skills across the secondary content areas. According the Alliance for Excellent Education (2009) success in advanced literacy skills is one of the best predictors of a student's success in beginning college courses. The Alliance estimates that 52 percent of high school graduates tested in 2011 on the ACT (Assessing Academic Growth for College and Career Readiness) met the reading readiness benchmark, and 25 percent of students tested in 2011 on the ACT met or exceeded college readiness benchmarks in all four academic areas (English, reading, mathematics, and science). The Alliance surveyed employers and found that 40 percent of employers were dissatisfied with high school graduates' ability to read and understand complicated materials, think analytically, and solve real-world problems.

The Center on Instruction (2008) outlines five areas that secondary struggling readers (which includes students with LD) are challenged with and they include word study, oral reading fluency, vocabulary, reading comprehension, and motivation. The Center describes struggling readers in word study as readers who may read single-syllable words effortlessly but have challenges decoding multisyllabic words, lack knowledge of sounds to print, have difficulty breaking words into syllables, and do not often use word analysis to break words into syllables. The Center suggests that teaching word study is important and students should be taught to identify and break words into syllable types, teach students to read multisyllabic words by blending the parts together, teach students to identify irregular words, teach students the meaning of prefixes, suffixes, endings, and root words, teach students to break words into word parts, and teach students when to use context to decode unknown words.



The Center describes secondary struggling readers with oral reading fluency as students who read slowly and labor to read their words with automaticity, struggle with decoding, do not pause at punctuation or phrases, lack voice, articulation, or emotion while reading, and lack the skills that result in dysfluent reading. The Center suggests that oral reading fluency instruction is not often a part of reading instruction, and oral reading fluency is especially important for secondary students who are faced with more challenging content-area text reading.

The third area that the Center emphasizes is vocabulary. The Center describes struggling readers as having limited exposure to new words, students do not enjoy reading and do not select reading as an independent activity, students lack the ability to comprehend what they read and to learn new words, lack experiences that give them deep understanding of what they read, and have limited content-specific prior knowledge to support new word learning. The Center suggests that to improve vocabulary that students should receive additive vocabulary instruction (explicit instruction of specific words, and guided practice), generative vocabulary instruction (relatedness and classes of words), and academic vocabulary instruction (meaning of words in specific content).

The fourth area that the Center discusses is reading comprehension and they describe struggling secondary readers as readers who fail to use metacognitive strategies while reading, are not aware of their understanding when it breaks down, do not interact or question text while they are reading, lack prior-knowledge, cannot make connections between the new material and what they already know, do not read with goals or purpose, and do not enjoy reading. The Center suggests that struggling secondary readers be taught how to activate prior knowledge, use graphic organizers, teach reading comprehension monitoring strategies, teach summarization

skills, teach students to ask and answer questions, and teach students how to use multiple reading comprehension strategies at the same time while reading.

The last area that the Center discusses is motivation with secondary struggling readers who may engage in reading as a passive process (they do not activate prior knowledge, use reading strategies, and do not use strategic thought processes), have low reading comprehension with text, do not access a variety of reading materials and prefer not to read, and are not interested in learning about topics or content through reading. The Center suggests that students be taught how to provide content goals for reading, support student autonomy, the use of interesting texts, and allow opportunities for students to collaborate with one another during reading.

In a report published by The National Joint Committee on Learning Disabilities in 2008, it was reported that LD students have difficulty with the literal understanding of what is read; ability to identify specific aspects of the text that reflect overall meaning; extension of the ideas in the text by making simple inferences; and drawing conclusions based on the text. Secondary students have a higher demand in academic classes and include: greater complexity of tasks; steadily increasing amounts of information; the need for comprehension of complex linguistic forms and abstract concepts; high stakes testing and graduation requirements; greater demand for working memory for on-the spot problem solving; increased focus on specific content with tightly scheduled time slots for acquisition of knowledge tied to standards and high stakes assessment; increased reliance on print; increased expectations for greater output within shorter amounts of time requiring rapid and accurate retrieval of information and consolidation of learning into long-term memory; increased demands for digital literacy proficiency; and increased need for self-advocacy and individual responsibility. The Committee makes

suggestions for the implementation of tiered interventions included in RtI and note that most of the current research has been done at the elementary level and additional research is needed at the secondary level in a tiered-based progress-monitoring model that helps support students with LD in special and general education. The researchers conclude that when planning instruction and intervention to address secondary students with LD and literacy it should include: target areas that are critical to reading and writing (decoding, vocabulary, reading comprehension, oral reading fluency, spelling, composing higher-order language skills, metalinguistic awareness, metacognitive skills of self-regulation and executive functioning), combined strategy-based instruction and remediation with skill based instruction that generalizes, literacy strategies within the context of content-area material, clearly scaffolded and sequenced instruction that helps students become independent learners, provide multiple opportunities to apply skills learned and generalize skills and strategies, identify and incorporate strategies and tools that provide support for acquisition of literacy skills necessary to print and digital environments, and use student performance assessment data to progress monitor, determine needs, and get information about the student's strengths and interests.

There are many concerns for society when dealing with secondary students who have low literacy skills (Lenz, Deschler, Schumaker & Ehren, 2011). The dropout rate increases significantly (Paplewis, 2005; Biancarosa & Snow, 2003), and students who read below grade level are two times as likely to drop out of high school as secondary students who read at grade level (Alliance for Excellence, 2009; Fleishman, 2004). Even more disturbing is the fact that students who drop out of high school are three and a half times more likely to commit offenses that might lead them to incarceration, and it is well documented that a high percentage of incarcerated youth have significant reading deficits, and have been unsuccessful in school

(Coalition for Juvenile Justice, 2001). Students who have grade level literacy skills are less likely to participate in delinquent offender behavior and could reduce recidivism rates by as much as 20% (Coalition for Juvenile Justice, 2001; National Center for Educational Statistics, 1999; Steurer, Smith, & Tracy, 2001).

### **Policy and Law Factors: NCLB, IDEA, RtI and Common Core**

The general context of the problem is made more substantial through the legal mandates for student performance on high stakes tests and is outlined under two Federal laws. The No Child Left Behind Act of 2001 (NCLB) and Individuals with Disabilities Act of 2004 (IDEA). According to Linn, Baker, and Betebenner (2002) secondary students in the high incidence category (students with learning disabilities, who are being served in special education) are a subgroup struggling nationally to increase their performance on high stakes tests. Linn, Baker, and Betebenner (2002) suggest that secondary students with learning disabilities frequently experience low achievement on high stakes testing due to reading difficulties that in turn has an effect on the school's Academic Performance Index (API), and the outcome of these tests affects each student's Average Yearly Performance (AYP), which has an impact on a school's Academic Performance Index.

In the era of high stakes testing (STAR, Standardized Testing and Reporting, the California High School Exit Exam, CAHSEE, and the implementation of the Common Core), increased school accountability (Average Yearly Progress, AYP, and Academic Performance Indicators, API), sanctions (program improvement schools, schools converted to County or charter schools), and the implementation of evidence based practices and interventions through data-based decision making (NCLB, 2001, Individuals with Disabilities Education Act, IDEA,

2004), American schools are under pressure to increase all subgroups' literacy skills. One of the subgroups that is being targeted are secondary students with documented learning disabilities who are qualified for special education services, and who are being served in a special education pullout model to address their reading and comprehension skills deficits. Most of these secondary students with learning disabilities enter the secondary setting without basic skills such as grade level reading, reading comprehension, oral reading fluency, writing, spelling, and math skills (Adelman, 2006). Many of these skills are necessary to comprehend the general education curricula such as Social Science, Science, English Language Arts, and Mathematics (Adelman, 2006).

As stated previously, schools in the United States are being faced with more accountability through high-stakes testing. Subgroups such as English Language Learners and high incidence students with learning disabilities and being served in special education are being required to make gains on content standards tests, state high school exit exams, and college level entrance exams. Knowing how to read is a critical skill not just for students who are taking high stakes tests, but also for students who are completing their secondary education. This skill is outlined by NCLB and IDEA and students may no longer have exemption (No Child Left Behind Act of 2001).

Both NCLB and IDEA have provisions that provide for the implementation of interventions for students and support an intensive intervention model (e.g., Response to Intervention and Content Literacy Continuum). The laws provide for scientific, research-based instruction and intervention in general education; monitoring and measurement of student progress in response to instruction and interventions; and the use of these measures of student progress to shape instruction and make educational decisions. Both NCLB and IDEA have

provisions that provide for the implementation of interventions for students and support the RtI Model (tiered interventions). The laws provide for scientific, research-based instruction and intervention in general education; monitoring and measurement of student progress in response to instruction and interventions; and use of these measures of student progress to shape instruction and make educational decisions.

In the reauthorization of the Individuals with Disabilities Education Act of 2004, Response to Intervention (RtI) is outlined in IDEA also outlines the use of scientifically-based instructional practices (2004):

Performance of children with disabilities, including the use of scientifically-based instructional practices, to the maximum extent possible; (F) providing incentives for whole-school approaches, scientifically-based early reading programs, positive behavioral interventions and supports, and early intervening services to reduce the need to label children as disabled in order to address the learning and behavioral needs of such children. (p. 118, STAT. 26501)

Many researchers have responded to understanding the RtI Model by developing the three-tier model of interventions. They are described by (a) tier 1 is the primary intervention, (b) tier 2 is the secondary intervention, and (c) tier 3 is the tertiary prevention as delivered through the continuum of school-wide support (Compton, Fuchs, & Fuchs, 2006, Chard, 2006, Marston, 2005). Based on national norms, the National Research Center on Learning Disabilities at Vanderbilt University (2006), and the Center of Teaching and Learning at the University of Oregon (2006) estimate that tier 1 accounts for 80% of the students of a school population, tier 2 accounts for 15% of the population, and tier 3 accounts for 5% of the student population. The

Center on Teaching and Learning at the University of Oregon (2006) found that, 80% of students were at low risk with additional support for reading challenges in regular education when tier 1 interventions were introduced, 15% of the student population were at risk for reading challenges at tier 2 with supplemental interventions, and 5% of the students were being served at tier 3 with severe challenges in learning how to read. In all of the tiered models, all of the researchers are providing special education services in the tier 3 interventions.

Forty-six states are focusing on a nationwide set of voluntary K-12 standards in English Language Arts/Literacy and Math called the Common Core. Curriculum and instruction are being rewritten to meet the rigor and demand of new coursework. Districts are training staff, evaluating technology requirements, and field-testing a new computer based assessment model. The common core is replacing state content standards with the implementation deadline during the 2014-2015 school year.

Some of the major changes include increasing students exposure to text complexity, progressive development of reading comprehension and rigorous text-based questioning, increasing importance of informational text for college and career readiness, and increase opportunities for students to develop independence while becoming self-directed learners (California Department of Education, California Common Core State Standards, 2013). With the adoption of the Common Core, students will be taught deeper critical thinking skills with an emphasis on basic literacy skills such as oral reading fluency, listening comprehension, and reading comprehension that the students of today need to successfully enter the workforce or complete college. The Common Core has been designed help all students (economically disadvantaged, English language learners, and special education students) with deeper and demanding curriculum. Additionally, technologically balanced assessment systems (computer

based) are being developed and will replace the standards multiple-choice tests that are currently used in schools today.

As is stated above, California is moving toward implementation of the California Common Core State Standards. According to the Electronic Education Report (2011), the READ 180 Next Generation Program embraces the Common Core by aligning the program with more rigor, more writing, more nonfiction, and more independent practice with text. Scholastic (2013) explains how the READ 180 Program is in alignment and supports the California Common Core Standards. The READ 180 Program supports the California Common Core Standards through rapid acceleration toward independent reading of grade-level text, trellises students toward increasing text complexity, gives students progressive development of reading comprehension and tasks based on rigorous text based questioning, offers students more information text than traditional reading programs, and gives students increasing opportunities for greater independence (Scholastic, 2013).

### **Characteristics of Scientifically Based Reading Programs**

NCLB outlines the five essential instructional components that are included in scientifically based reading programs (Armbruster, 2001). The five components include: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The National Reading Panel (2000) defines phonemic awareness as "the ability to focus and manipulate phonemes in spoken words (p. 2-5)." There are 41 phonemes in the English language and they are the smallest units of spoken language. The National Reading Panel (NRP) (2000) sought to find out if phonemic awareness could be taught to students who were learning how to read. The NRP conducted a meta-analysis and found that teaching phonemic awareness helped students learn



how to read. The NRP concluded that phonemic awareness needed to be included in all scientific-based-reading programs.

Phonics instruction was the second component that the NRP (2000) considered as an essential component of a Scientific Based Reading (SBR) program. Phonics is an essential component for learning how to read and it involves learning of the alphabetic system. Phonics enhances students' ability to become good spellers, and assists students with becoming proficient readers. The NRP (2000) has documented that phonics instruction enhances students' ability in reading comprehension. This was across cultural and socio-economic factors. Phonics instruction is a key component in SBR program and it is asserted that phonics instruction must be used with other instructional methods to be fully effective.

Oral Reading Fluency (ORF) was the third aspect that was identified by the NRP (2000) that was important for an SBR program. Oral reading fluency can be defined as the speed, accuracy, and proper expression in which a student can read out loud. The NRP suggested that reading practice improves oral reading fluency, and common instructional practices such as guided repeated oral reading and independent silent reading may be instructional approaches that will improve oral reading fluency. The NRP emphasized that instructional approaches such as guided repeated oral reading may have a positive impact on word recognition, reading fluency, and comprehension for elementary and secondary students (The National Reading Panel, 2000).

Vocabulary development was the fourth method that was deemed essential by the NRP (2000) of a SBR program. Many methods of vocabulary instruction have been outlined by NRP (explicit, indirect, pre-teaching vocabulary, word meaning, word roots, multimedia methods, and

association methods). The NRP found that links between computer technology and vocabulary instruction enhanced students learning to read.

Reading comprehension was the final component discussed by the NRP as an essential component for an SBR program. Reading comprehension is the construction of meaning between the reader and the text (Bitter, O'Day, Gubbins, & Socias, 2009). Reading is an active and purposeful process that allows the reader to discover the meaning of the text (Bitter, O'Day, Gubbins, & Socias, 2009). There are multiple strategies that can be employed to teach reading comprehension (direct instruction, group instruction, cooperative group instruction, and guided practice to name a few). A SBR program may have one or more of these strategies integrated into the comprehension component of the program.

### **Reading Strategies and Instruction for Secondary Students With Learning Disabilities**

There is a body of research that describes effective teaching interventions and strategies that improve grade level oral reading fluency and reading comprehension in secondary students with learning disabilities and are served in special education (Berkeley, Scruggs, & Mastropieri, 2011). These strategies and interventions include: (a) use of leveled and appropriate high interest instructional reading materials, (b) frequent progress monitoring, (c) increased instructional time, (d) direct instruction, (e) modeling, (f) independent practice, (g) multimodal instruction, and (h) corrective feedback. Each of these strategies and interventions will be discussed briefly below.

One effective strategy includes leveled and appropriate high interest instructional reading materials (Mastropieri, Scruggs, & Graetz, 2003). Abridged novels, magazines, modified literature are all examples of reading materials that can be leveled at a lower readability level.

High interest materials may include specific issues that secondary students may have a high interest in reading (e.g., computer games, gang affiliation, peer pressure, teen pregnancy, and bullying).

Additionally, research supports that frequent progress monitoring (Deshler & Hock, 2007), should be done through (a) teacher observation, (b) assessment, which may include formal and informal assessment, (c) grade-leveled oral reading fluency probes using one minute reading rates (total words read out loud in one minute minus the miscues) with curriculum based measurement, (d) integrated oral reading fluency reading inventories that are included in a computer aided instructional component within a reading intervention, (e) entry level assessments, and (f) summative assessments (Deshler & Hock, 2007). Data driven decision-making helps teachers make sound instructional decisions for secondary students with learning disabilities, and allows frequent and consistent progress monitoring on an on-going basis (Archbald & Keleher, 2008).

Researchers agree that the amount of instructional reading time allotted can have a dramatic effect on oral reading fluency and reading comprehension (Garjria, Jitendra, Sood, & Sacks, 2007). The more time that is spent in the reading activity the better the chance for the secondary students with learning disabilities to increase their oral reading fluency and reading comprehension. Services in special education are traditionally intensive, implemented one on one or in small groups, and have learning goals and objectives that are written at least annually that may include oral reading fluency and reading comprehension that are included on the Individualized Education Plan (IEP).

Direct instruction is a reading instructional strategy that is used across education settings and in special education (Joseph & Schisler, 2009). When students are taught one on one or in small groups, the teaching can be targeted to their learning style and instructional reading level. Direct instruction is a delivery model implemented in pullout models of special education for secondary students with learning disabilities and it is a beneficial delivery model to enhance oral reading fluency and reading comprehension (Benner, 2007). The more direct instruction that is provided in reading through the pullout special education model to the learning secondary students with learning disabilities, the greater the gains are toward grade level oral reading fluency and reading comprehension (Benner, 2007).

Modeling has been studied and shown to be effective in impacting a student's oral reading fluency and reading comprehension, and can be implemented in a variety of settings in secondary education (Rasinski, et al., 2005). There are many types of modeling that can be used to instruct secondary students with learning disabilities such as: peer modeling, teacher-student modeling, CD Rom modeling, and computer assisted modeling (Rasinski, et al., 2005). These varied modeling strategies can have an effect on oral reading fluency and reading comprehension (Rasinski, et al., 2005). Modeling provides the secondary learner an example of a peer who demonstrates grade level oral reading fluency and reading comprehension. Modeling by the teacher provides a fluent adult who has oral reading fluency, and reading comprehension skills. In addition, the Read 180 Program integrates the use of technology to give the secondary student with learning disabilities (CD-Rom and computer aided instruction) oral reading fluency modeling, and reading comprehension skills that can be individualized to secondary students with learning disabilities learning levels (Rasinski, et al., 2005).

Research indicates that secondary students benefit from independent practice that might impact their oral reading fluency and reading comprehension by allowing the student the opportunity to practice reading (Swanson & O'Connor, 2011). Independent practice is accomplished through silent reading, reading orally to a peer, reading orally to an adult, or tape recording a student's oral reading. Independent practice has been shown to be effective in increasing a student's oral reading fluency and reading comprehension by allowing the student the ability to generalize emerging reading skills that have been taught (Swanson & O'Connor, 2011).

Multimodality instructional strategies can have an impact on reading performance and can be implemented in all aspects of teaching reading to secondary students with learning disabilities (Scruggs, Mastropieri, Berkeley, & Graetz, 2010). Reading is naturally visual (seeing what you are reading) and auditory (hearing what you are reading). Computer aided instruction is an example of one multiple modality that can add the kinesthetic approach by having the learner interact with the computer visually, auditorally, and kinesthetically (Slavin, et al., 2006; Hall, Hughes, & Filbert, 2000; Soe, Koki, & Chang, 2000).

Corrective feedback can be accomplished throughout the reading instruction of secondary students with learning disabilities. This can be done one on one or in small groups with peers or adults, and can be given through computer aided instructional components of reading programs that are individualized and utilize computer technology that allows the students to tape their oral reading fluency while they are interacting with the computer aided instruction (Scruggs, Mastropieri, Berkeley, & Graetz, 2010).

Effective reading strategies that enhance improved oral reading fluency and increased reading comprehension skills have been well studied with secondary students with learning disabilities. These scientific based reading programs (SBR) that are evidenced based (EB) are included in the Read 180 Program. These SBR that are EB include the use of leveled and appropriate high interest instructional reading materials, frequent progress monitoring, increased instructional time, direct instruction, modeling, independent practice, multimodal instruction, and corrective feedback which are all included in the READ 180 Program.

### **The READ 180 Program**

The Read 180 Program was developed out of the tenants of NCLB and IDEA, and it implements core content including vocabulary, comprehension, word study, and is used in many school districts as a reading intervention. The READ 180 Program integrates many components suggested in the literature to be effective for improving the oral reading fluency, linguistic comprehension, and reading comprehension of students with learning disabilities. As a mixed method, the READ 180 Program integrates the findings from the reading research into the program's theory and the intended outcomes (gains) of the program (improved phonemic awareness, decoding, oral reading fluency, reading comprehension, and background knowledge) (Scholastic, 2009).

The READ 180 Program was developed to provide differentiated instruction for students who score below the 25th percentile (at-risk readers) and is integrated in the four areas of reading instruction: phonemic and phonological awareness, oral reading fluency, vocabulary development, and reading comprehension (Scholastic, 2009). This differentiated instruction is delivered through small group teacher led direct instruction and includes three rotations:

individualized computer-assisted reading instruction, independent and modeled reading practice with leveled text, and teacher-directed reading instruction that is designed for leveled small group instruction (Scholastic, 2009).

Research-based reading strategies such as leveled and appropriate high interest instructional materials, frequent progress monitoring, amount of instructional reading time, direct instruction, modeling, independent practice, multi-modality instructional strategies, and corrective feedback are supported in the reading literature and are included in the READ 180 Program when it is delivered with fidelity in the full 90-minute version where teachers activate students' prior knowledge and build reading background (Palinscar, & Brown, 1993; Wren, 2002). The individualized computer aided reading instruction provides students the ability to develop critical reading skills in decoding, oral reading fluency, vocabulary development, and reading comprehension (National Institute of Child Health and Human Development, 2000). The READ 180 Program includes independent and modeled reading practice through leveled text that promotes reading motivation and time spent reading through student selected high interest books and audio books that are included in the READ 180 library (Guthrie, McRae, & Klauda, 2007). The READ 180 Program differentiates reading instruction by implementing leveled reading in small groups that are teacher directed, and by grouping the students heterogeneously using on-going assessment data to place students in small reading groups that targets reading instruction (Tomlinson, 2001, Buly & Valencia, 2002; Morris et al., 1998).

### **Research on the READ 180 Program**

The READ 180 Program has been shown to have a moderate effect on reading comprehension scores (Slaven et al., 2008). In addition, The READ 180 Program has been

shown to have a medium effect for reading comprehension and a large effect for general literacy achievement (What Works Clearinghouse, 2009). However, the research on the READ 180 Program is limited within the scope of the What Works Clearinghouse (2010) United States Department of Education Institute of Educational Sciences evidence standards, (which included grades four to nine), and only seven studies met the WWC strict evidence standards (Haslam, White, & Kline, 2006; Interactive Inc., 2002; Land, et al., 2008; Scholastic Research, 2008; White, Haslam & Hewes, 2006; White, Williams & Haslem, 2006). The WWC concluded that these studies had no documented effectiveness on alphabets, and reading fluency, but showed potentially positive effects on reading comprehension (+4 to +25 percentile points) and general literacy achievement (+3 to +17 percentile points).

Yet, of the seven studies listed all of the studies were conducted with students with mixed abilities, and none of the studies were conducted with secondary special education students with learning disabilities being taught in a pullout model. Additionally, none of the current published studies with adolescent students with learning disabilities and the effectiveness or lack of effectiveness of the READ 180 Program fall within the WWC evidence standards for students with learning disabilities, and therefore the WWC is unable to make any conclusions about the effectiveness or lack of effectiveness of the READ 180 Program for students with learning disabilities (WWC, 2010). This lack of research is critical to understand the effect that the READ 180 might have on secondary students' with learning disabilities decoding (oral reading fluency), linguistic comprehension, and reading comprehension skills.

The current READ 180 research base has three distinct limitations. First, about a quarter of the studies that have been conducted on the READ 180 Program have been sponsored by Scholastic, who is the publisher. Second, none of the studies that have been conducted on the



READ 180 Program have been carefully controlled studies done on homogenous groups of students (e.g. secondary students with learning disabilities and are being served in a pullout special education model). Thirdly, according to the What Works Clearinghouse (2009), a majority of the studies conducted have measured only reading comprehension and general literacy outcomes, and not in the area of oral reading fluency or linguistic comprehension.

This dissertation study attempted to provide additional evidence about the effectiveness of the READ 180 program. Due to the lack of empirical research available at the secondary level on the effectiveness of the READ 180 Program and the programs wide level of implementation at the secondary level, this study addressed this population. In particular, this study filled a gap in the current literature as it relates to the effectiveness of the READ 180 program for secondary special education students with learning disabilities and are being served in a pullout tertiary intervention model (ninth grade students with learning disabilities who are being served in special education pullout model).

### **Assessing Oral Reading Fluency**

Oral reading fluency is an accepted construct in reading instruction with students with learning disabilities in special education, and who are general education and are taught in the mainstream. In addition, oral reading fluency has been correlated with reading comprehension (Deno & Mirkin, 1977; Shapiro, 2010; Hale et al., 2007). The measurement of oral reading fluency is commonly measured through one-minute timed curriculum based reading measures (CBM). Curriculum Based Measurement is a set of standardized assessment practices that display a level of proficiency in basic skill areas that include reading, spelling, written language, and mathematics (Ditkowsky & Koonce, 2010). Curriculum Based Measurement using oral

reading fluency probes (total words read aloud correctly in one minute minus errors) has long been an accepted way to monitor various reading skill development (reading comprehension and oral reading fluency) and progress monitoring (Deno & Mirkin, 1977; Shapiro, 2010; Hale et al., 2007). According to Good et al. (2004) CBM are linked to one another in theory and psychometrics. Good et al. (2004) suggest that CBM are valid predictive measures of reading proficiency.

There are a number of CBMs commonly used to assess oral reading fluency, including the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and easy CBM. The Dynamic Indicators of Early Literacy Skills (DIBELS), is a standardized, individually administered assessment of reading accuracy and oral reading rate with a reading comprehension measure (Good & Kaminiski, 2002), and is widely used at the elementary school level. At the secondary level, easy CBM is becoming a common standardized assessment of reading accuracy and oral reading rate with reading comprehension (easy CBM, University of Oregon, 2012). Both the DIBELS and easy CBM assess reading development in three areas of literacy: phonological awareness, the alphabetic principle, and oral reading fluency (The Center on Learning and Teaching, University of Oregon, 2012).

Like DIBELS, easy CBM was developed by researchers at the University of Oregon through a grant program that was funded by the Office of Special Education (OSEP) in 2006 (University of Oregon, 2012). easy CBM includes oral reading fluency assessments known as Curriculum Based Measurement (CBM's) which are standardized measures that were developed from a year's worth of curriculum that include skills and knowledge deemed critical for each grade level. The CBM's are referred to as "the next-generation CBM's" because they employ Item Response Theory (IRT). IRT was used during the measurement development, which has

increased the sensitivity of easy CBM measures and all easy CBM to monitor growth while increasing the consistency of the alternative forms of each measure type. easy CBM can be implemented in a school, district wide or by an individual teacher (University of Oregon, 2012).

This study used the easy CBM as the read aloud measure to look at the effect on oral reading fluency as a pre/post measure. easy CBM employs decades of research on oral reading fluency, and is a computer based measurement system that is leveled, provides the researcher with progress monitoring, is individualized based on student assessment, and employs item response theory (University of Oregon, 2012).

### **Assessing Linguistic Comprehension**

Hoover and Gough (1990) define linguistic comprehension (also known as listening comprehension, (Vandergrift, 2004; Kendeou, Savage, van den Broek, 2009; Tilstra et al., 2009; Amin, Amin, Ali, 2011) as the student's ability to take information at the word level and interpret the information. According to Kirby and Savage (2008) linguistic comprehension is described as oral language comprehension that represents all of verbal ability (vocabulary, syntax, inferencing and the construction of mental schema). Kershaw and Schatschneider (2012) assert that linguistic comprehension is the ability to understand spoken language. According to Hoover and Gough in the Simple View of Reading (1990), linguistic comprehension correlates strongly with reading comprehension.

According to Vandergrift (2004) metacognitive awareness (planning, monitoring, and evaluation) while listening is correlated to listening comprehension, and making the student aware of their listening process can increase a students' motivation, and their understanding of

their thinking process during listening activities. According to Amin, Amin, and Aly (2011) students need to develop the ability to listen so that they can better listen to learn.

One common norm-referenced assessment of listening comprehension is The Listening Comprehension Test Adolescent (Bowers, Huisingh, & LoGiudice, 2009). The Listening Comprehension Test Adolescent is a standardized test that assesses listening comprehension and language designed for students ages 12 through 18 through a question and answer format. The test assesses main ideas, details, reasoning, vocabulary and semantics, and understanding messages. The Listening Comprehension Test Adolescent was used in this research as a pre/post measure of linguistic comprehension in line with the Simple View of Reading.

### **Assessing Reading Comprehension**

The reading comprehension construct is an imperative component in reading instruction. There are many ways to assess reading comprehension with secondary students with learning disabilities in special education. There are formal and informal measures that are implemented widely in secondary settings. One common assessment is a nationally normed reading comprehension assessment called the Gates-MacGinitie Reading Test (Riverside Publishing, 2012). The Gates-MacGinitie Reading Tests are designed to provide a general assessment of reading achievement ability for individual students. The Gates-MacGinitie Reading Comprehension Tests measure students' abilities to read and understand different types of literature. All of the passages included in the assessment come from published books and periodicals. The assessment was developed to reflect the type of reading material that students are required to read in school and might choose to read for recreation. The test contains questions that require students to construct an understanding based on a literal understanding of the

passage, make inferences, draw conclusions, and measure the ability to determine the meaning of words. According to RtI for Success (2012), the Gates-MacGinitie reading comprehension tests have 46 test questions that measure prose and simple verses that are taken from published materials, and the reliability measures are considered high (from .87-.92 ) (RtI Success, 2012).

The Gates-MacGinitie Reading test has been used successfully with general and special education students at elementary and secondary levels to their measure reading comprehension (Zipke, 2007; Kim & Guryan, 2011). The Gates-MacGinitie Reading Test was used as a pretest and a posttest in this study.

## **Summary**

This dissertation study looked at three constructs outlined by the Simple View of Reading, decoding (oral reading fluency), linguistic comprehension, and their effect on reading comprehension using the READ 180 Program. The READ 180 Program was implemented as a scientific-based reading program with secondary special education students who were served in an intensive pullout program. The effect of the READ 180 program on decoding (oral reading fluency) was measured using weekly progress monitoring with the easy CBM read aloud measure (one minute timed reading passages that measure total words read, minus miscues, to give total words read correctly in one minute). Additionally, this study examined the effect of the READ 180 program on linguistic comprehension using The Listening Comprehension Test Adolescent. Finally, this study examined the effect of the READ 180 program on reading comprehension skills using the Gates-MacGinitie Reading Comprehension Tests as a measure.

### **Research Questions**

1. What are the changes in the oral reading fluency scores, as measured by easy CBM, of secondary students with learning disabilities who are being instructed with the READ 180 Program?
2. What are the differences in the linguistic comprehension scores, as measured by The Listening Comprehension Test Adolescent, of secondary students with learning disabilities who are being instructed with the READ 180 Program?
3. What are the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities for the students who are being instructed with the READ 180 Program?

### **Definition of Terms**

Audio books: The Audio books are included in the READ 180 library. There are five books at each lexile and they include a CD-ROM and five copies of each paperback book that is on the CD-Rom. The Audio books are implemented during the modeled and independent reading rotation of the READ 180 Program (READ 180, 2005).

Computer Aided Instruction: Computer Aided Instruction (CAI), which is also known as Instructional Software provides students with customized instruction, immediate feedback, and individualized practice to enhance their independent reading levels. The CAI collects data based on the students' responses and independently adjusts the instruction to each student's individual need through the Scholastic reading Inventory that is embedded in the program. These areas include; decoding, word recognition, fluency, comprehension, vocabulary, spelling, and the automaticity of these skills. The CAI is individualized and automatically adjusts instruction. Additionally, the CAI provides language arts instruction in reading, word recognition, and spelling (READ 180, 2005).

easy CBM: This computer based program from the University of Oregon, Eugene provides one minute timed reading passages that measure and display progress monitoring on a student's leveled oral reading fluency by assessing the total number of words read in one minute minus the miscues the student made while reading the passage orally.

Decoding: Decoding is a student's ability to apply knowledge of letter-sound relationships, including knowledge of letter patterns, and to correctly pronounce written words. Students who have good decoding skills understand these relationships and have the ability to recognize

familiar words quickly and to figure out words they haven't seen before. Most students with LD benefit from intensive instruction in the area of decoding.

Gates-MacGinitie Reading Tests: Designed to provide a general assessment of reading achievement in grades 3 through 12. Each level consists of a Vocabulary test and a Comprehension test. The Comprehension tests measure students' abilities to read and understand different types of prose. All of the passages are taken from published books and periodicals. The content is selected to reflect the type of materials that students are required to read for their schoolwork and choose to read for recreation. Some questions require students to construct an understanding based on a literal understanding of the passage; others require students to make inferences or draw conclusions. The Comprehension tests also measure the ability to determine the meaning of words in an authentic text context.

Lexile: A range of measurement based on grade levels that are set by the California Standards.

Linguistic comprehension: is the ability to read and understand text, a child needs to be able to understand language which is an essential aspect of language comprehension hinges on the ability to draw inferences and appreciate implications-it is important to understand both the explicit and implicit messages contained in language.

Modeled and Independent Reading: An important component of the READ 180 Program is the modeled and independent reading. The Modeled and Independent reading component gives the student experience in reading demonstration. It demonstrates good reading practices and reading strategies through a narrator and reading coach. The library builds oral reading fluency, vocabulary skills, and provides reading practice for the readers. The library contains a range of reading levels and a choice of high-interest topics (READ 180, 2005).



Oral Reading Fluency: Oral reading fluency is the rate a student reads a specific reading passage below, at, or beyond the student's grade level. It is timed and the miscued words are subtracted from the total number of words read. This may be tracked through leveled multiple reading passages, and an oral reading fluency baseline can be developed.

Progress Monitoring: Progress monitoring will be done weekly using easy CBM (one minute timed reading passages that measure total words read, minus miscues, to give total words read correctly in one minute).

Reading Comprehension: Reading Comprehension is the level of understanding that a student gets from something that is written. Students who are proficient at reading written words can usually recognize words quickly and effortlessly. Proficient students who have grade level reading comprehension use their processing capacity and have the ability to comprehend what is being read.

Resource Model: The resource model in this study is a pullout special education model where students have been qualified for special education through a referral to process to special education, academic and cognitive testing, and an IEP Team recommendation for tiered intensive academic intervention. This model serves students who qualify for special education under one or more of the qualifying categories that include LD. These students have an Individualized Education Plan (IEP) that is reviewed annually and includes current testing, progress, needs, goals and objectives. Secondary students who read below grade level are a common deficit area for students who are served in the resource model.

Scholastic Reading Inventory: The CAI automatically places the students in independent levels based on their individual responses while using the CAI. The levels range from a lexile range of

200-1200. The CAI assesses fluency, reading for detail, sequencing, finding the main idea, summarizing, cause and effect, compare and contrast, problems and solutions, making inferences, and drawing conclusions. Additionally, the CAI provides a segmented status report in reading, word identification, and spelling skills. All of this data is compiled into reports that show the students' skills progress that assist in identification and prioritization of individual student needs. The SRI provides reports that individualize recommended books and lexile levels (READ 180, 2005).

Small-Group Instruction: The 20 minute small-group instruction is done during the rotations of the groups who are working independently with the Instructional Software and Modeled and Independent reading. The Teacher's Addition, rBooks, and Resources for Differentiated Instruction books are used. The purpose of the Small-Group Instruction is to build the students' reading, vocabulary, and writing skills through direct instruction. The Small-Group Instruction allows the teacher to provide intensive direct instruction that is customized to individual student needs (READ 180, 2005).

The Listening Comprehension Test Adolescent: The Listening Comprehension test Adolescent is a standardized test developed for students age 12 to 18 and it assesses main idea, details, reasoning, vocabulary and semantics, and understanding message through a question and answer format.

The Simple View of Reading: This theoretic rationale was developed by Gough and Tunmer (1986) and it describes reading comprehension as a product of listening comprehension and decoding.

Whole-Group Instruction: The whole-group instruction is done during the first 20 minutes of the READ 180 instructional session. The teacher implements the rBooks to teach reading skills and strategies, vocabulary and word study, and writing and grammar. The purpose of whole-group instruction is to build the students' reading, vocabulary, and writing skills through teacher-directed direct instruction (READ 180, 2005).

Whole-Group Wrap Up: The Whole-Class Wrap Up is a direct instruction activity that provides the students a way to reflect on the learning that has taken place for the day. It reviews the three components of the workshops that have just been completed (Small-Group Instruction, Computer Aided Instruction, and Modeled and Independent reading) (READ 180, 2005).

## CHAPTER II

### REVIEW OF THE LITERATURE

The trend in secondary schools in the United States is to focus on improving adolescent literacy skills that include improving secondary special education students' reading comprehension. There are a broad range of delivery models that include intensive block reading comprehension skill development delivered in a pull-out special education setting. There are a variety of research based reading comprehension strategies that include mixed-methods instructional designs that employ direct instruction, and computer aided instruction. One of these research based mixed method designs is The READ 180 Program.

This chapter is presented in four major sections: (a) oral reading fluency, (b) listening comprehension, (c) reading comprehension with secondary special education students with learning disabilities, and (d) The READ 180 Program.

#### **Oral Reading Fluency**

Oral reading fluency has been studied extensively in reading research. Oral reading fluency is of particular interest to the field of special education for teachers who work with students with learning disabilities. Oral reading fluency is a quick measure that can provide information about current levels of performance, provide error analysis through miscues, omissions, or additions, it can be used as an on-going progress monitoring tool, and can be linked to the Individualized Educational Plan (IEP) through benchmarks and reading goals (University of Oregon Center on Teaching and Learning, 2002). One of the main areas of academic need for students with learning disabilities and being served in special education includes oral reading fluency. The purpose of this section is to synthesize oral reading fluency

research as a construct of this study. This section will be organized by first establishing the oral reading fluency construct as a researched and viable construct of reading, and second the current research on strategies that enhance oral reading fluency skills that are pertinent to the strategies presented in the READ 180 Program.

### **The Oral Reading Fluency Construct**

Oral reading fluency has been a repeatedly validated construct in reading research. Fuchs, Fuchs, Hosp, & Jenkins (2001), synthesized oral reading fluency literature as a measure of reading competence from a theoretical, empirical, and historical analysis. They concluded that oral reading fluency may function as an overall predictor of reading development and expertise. Fuchs et al. recommend that oral reading fluency belongs in reading assessment, and that oral reading fluency should continue to be studied as an indicator of reading competence and reading development. In addition the use of oral reading fluency should continue to inform instructional decision making, and be used to help assess the value of reading treatments.

In addition, oral reading fluency has been identified in the reading research as a key construct that may improve students' performance on high stakes assessments at the secondary level. Archer, Gleason, and Vachon (2003) noted in a study they conducted with general education secondary students in reading comprehension that a large number of secondary students read between the second and fifth grade level. Many of these secondary students have difficulty with multi-syllabic words and decoding which has an impact on their oral reading fluency (Archer, Gleason, & Vachon, 2003). These researchers recommendations are consistent with No Child Left Behind and the Individuals with Disabilities in Education Act and they recommend that programs be implemented that are research based, are well designed, and give

students repeated practice to demonstrate oral reading fluency (Archer, Gleason, & Vachon, 2003).

### **Oral Reading Fluency as an Assessment Tool**

Measures of oral reading fluency have been found to be reliable, valid predictors of reading outcomes and performance on Federal and state tests, and oral reading fluency has been found to be a factor when looking at students with reading difficulties (Hasbrouck & Tindal, 2006). Oral reading fluency is a commonly used reading assessment and is used as a diagnostic tool in addressing learning needs with reading. Meisinger, Bloom, and Hynd (2010) conducted a study that investigated oral reading fluency as a diagnostic tool in identification of 50 students who had suspected reading disabilities such as dyslexia with the reading skills of rapid naming speed, and reading comprehension. Meisinger, Bloom, and Hynd, (2010) concluded that oral reading fluency measures are more sensitive in diagnosing reading problems than reading measures (formal normed reading tests, and state standards tests) and failure to assess oral reading fluency may result in under identification of students with reading disabilities.

Additionally, oral reading fluency research has been synthesized by Good, Simmons, and Kame'enui (2001) who conducted a meta-analysis and found that the measures of oral reading fluency are reliable, and are valid predictors of reading outcomes and performance on Federal and state tests. Oral reading fluency has been found to be one factor that can be viewed when looking at students with reading difficulties, and when used correctly, it is a gauge that can be implemented to screen students who might have reading difficulties, it can be used for progress monitoring, and gives a focus on reading fluency. (Hasbrouck & Tindal, 2006)

Progress monitoring and data collection are accountability components that validate the intent of NCLB, and IDEA (NCLB, 2001, IDEA, 2004). The tracking of academic skills development can be done through Curriculum Based Measurement (CBM) (University of Oregon Center on Teaching and Learning, 2002). Oral reading fluency can be monitored through Curriculum Based Measurement (CBM) (University of Oregon Center on Teaching and Learning, 2002). Curriculum based measurement allows teachers to make educational decisions and should include outcome measures, progress-monitoring, diagnostic measures, and screening measures (Baumann, 2009). Curriculum based measurement is an easy way to collect data, and curriculum based measurement can be used as an ongoing assessment and accountability tool in reading (Hasbrouck & Tindal, 2006).

Oral reading fluency has been described as a powerful tool in implementation of tiered interventions when combined with Curriculum Based Measurement (CBM) as a tool for progress monitoring (Good, Simmons, Kame'ennui, 2001; Hasbrouck & Tindal, 2006). There are cautions in the literature about connecting all of the reading skill development on the idea of just oral reading fluency, however the body of research continues to support the construct of oral reading fluency as a predictor of reading skills (Good, Simmons, & Kame'ennui, 2001, Hasbrouck & Tindal, 2006). Curriculum-Based Measurement, which bases its measurement off the idea of oral reading fluency, is an on-going monitoring technique that has application in not just reading, but also writing, math, and spelling.

Curriculum Based Measurement (CBM) is a construct that can be a vital tool for a variety of reasons. First, CBM allows the teacher to see where the student is currently performing. Second, CBM allows the teacher to see what effect the teaching intervention (like READ 180) is having on a student's oral reading fluency. Third, it can provide vital documentation for the

teacher of where the student might be having difficulty and/or success in the teaching intervention (like READ 180). Finally, it might be motivational to the student to be able to gauge their success in oral reading fluency as the students potentially increase their oral reading fluency skills.

In terms of the research evidence supporting the use of CBM, Reschly et al. (2009) conducted a meta-analysis of correlational evidence on curriculum based measurement in oral reading fluency as an indicator of reading achievement. The purpose of this meta-analysis was a comparison of state-specific group administered tests, and national group-administered tests (N=70). Additionally a comparison of individual and group-administered national tests (N=13) was conducted, curriculum based measurement and total reading scores by grade (N=57), and the length of time (N=126) the studies were conducted, and individual and group-administered reading subtest scores (N=72) were analyzed. All of the comparisons in the meta-analysis showed on individual and group-administered subtest scores a statistically significant results ( $p < .001$ ) with curriculum based measurement being a significant predictor in decoding, vocabulary and reading comprehension.

Reschly et al. (2009) concluded that curriculum based measurement was developed to provide schools with a set of assessments that were reliable, valid, are minimal in cost, and are time-efficient predictors of student achievement in core academic areas (reading, math, writing, and spelling). The researchers report that in reading achievement, there have been decades of data that provide consistency in the relationship between curriculum based measurement and other standardized assessments of reading achievement, and that teachers should feel confident in their use of curriculum based measurement as an indicator of student's reading achievement (Reschly et al., 2009).



Hale et al. (2007) conducted a study on reading comprehension using Curriculum Based Measurement reading aloud and silently. They used an N=42 of 10th, 11th, and 12th grade students at the secondary level (no students were identified as students with learning disabilities), and an N=51 of 4th and 5th grade students at the elementary level where each group read a 400 word passage silently and aloud, and answered 10- multiple-choice comprehension questions. The researchers concluded that reading comprehension was significantly higher when the students read out loud on the curriculum based measurement oral reading fluency probes versus silently on the probes ( $p < .001$ ). Future research is suggested and it should include participants who are having reading difficulties, and continue to develop and evaluate procedures that may develop a student's skills in oral reading fluency that may influence reading comprehension.

Wayman et al. (2007) synthesized the literature on curriculum-based measurement in reading using published studies from 1989 to 2006 (N=64) and it included the study and date published, the sample (number of subjects, grades, level-grade equivalency, English language level) reading measure (type of measure and scoring procedure), and results (validity-standardized test, reliability-test, retest, growth-pattern of growth per week, and between grades). Wayman et al. (2007) concluded that reading-aloud measures demonstrate a strong relationship between curriculum-based measurement reading aloud and reading proficiency. In regards to future research, Wayman et al. (2007) concluded that much more research is needed at the secondary level, because much less research exists at the secondary level as does and the primary and middle school levels. Wayman et al. (2007) continues that there is a need for more research at the secondary level to examine the relationship between reading aloud and reading comprehension. Wayman et al. (2007) concludes that oral reading fluency measures are valid

measures that have been extensively studied, have been shown to relate as an indicator of general reading proficiency, and oral reading fluency measures continue to be shown as dependable.

One commonly used progress monitoring CBM system is called the easy CBM (University of Oregon Center on Teaching and Learning, 2002). easy CBM is a set of standardized, individually administered measures of early development in literacy that are one-minute curriculum based measures of oral reading fluency skills. easy CBM is an accountability system that school districts are implementing with tiered interventions. Assessment and progress monitoring are key components to demonstrate progress, lack of progress, adjust instruction, and collect data on individual students. The students can be monitored quickly on a daily basis providing feedback to the stakeholders on the effectiveness of the interventions.

Progress monitoring, assessing a student's current level, and demonstrating reading progress or the lack of reading progress is a huge component in the implementation of the tiered intervention model. Baumann (2002) outline the necessary components of reading assessments that allow teachers to make educational decisions and should include at a minimum, outcome measures, progress-monitoring, diagnostic measures, and screening measures. Wright (2006) contends that it is important to teach staff to collect frequent progress-monitoring data such as CBM. Hasbrouck and Tindal (2006) explain that CBM is an easy way to collect data that schools can implement under IDEA through the tiered intervention model. CBM is based on grade level district norms. Fuchs and Fuchs (2004) synthesized this current trend in special education under NCLB, AYP, IDEA, and tiered interventions using CBM as an assessment tool. CBM can be used as an ongoing assessment and accountability tool in reading and mathematics through tiered interventions (Fuchs, and Fuchs, 2004). CBM is an easily administered progress monitoring assessment that is aligned to a student's Individualized Education Program (IEP), and

instructional goals through reading and mathematics computation fluency (University of Oregon Center on Teaching and Learning, 2002). CBM, like lexiles in the Read 180 Program, provides schools with a manageable strategy for tracking the effectiveness for their teaching interventions that have an impact on LD students, and increase their scores on the state standards tests.

### **Oral Reading Fluency Instructional Strategies**

The research on the oral reading fluency construct has examined many oral reading fluency instructional strategies. These strategies have been shown to increase students' oral reading fluency and many of these research-based strategies are embedded into the READ 180 Program.

Research has shown that oral reading fluency is a key component to learning how to read and should be done through the use of authentic reading materials (Rasinski, 2009). When students are learning how to read, the reading should be taught with authentic materials that are used in the general curriculum and be used as the materials to teach in the mainstream.

Numerous factors have been found to influence oral reading fluency. Wexler (2008) outlines three key factors that enhance students oral reading fluency: (1) repeated readings, (2) audio taped models, and (3) modeling by proficient readers. Five key strategies were identified to help students with oral reading fluency of grade level texts (Roberts, 2008). The Roberts study (2008) outlined the following strategies that increased oral reading fluency in the students who participated in the study; work study skills, oral reading fluency drills, vocabulary development activities, reading comprehension practice, and motivational strategies.

Burns (2007) implemented pre-teaching of unknown words and when the teacher pre-taught words unknown to the student, he found that their oral reading fluency increased. Oral

reading fluency has been linked to reading comprehension, and the better a student's oral reading fluency the higher comprehension students demonstrate on grade level reading probes (Hasbrouck, 2006). Additionally, oral reading out loud has been shown to increase reading comprehension, and the more a student can read out loud orally, the higher the reading comprehension measures have shown (Hale, 2007).

Rasinski, Padak, McKeon, Wilfong, Friedauer, and Heim (2005), synthesized research on oral reading fluency reading literature. They point out that reading fluency is a significant variable for students in the secondary setting and oral reading fluency affects the secondary students overall academic development. Oral reading fluency leads to improved reading comprehension, and must continue to be focused on at the secondary level. Oral reading fluency should be taught directly and systematically in the secondary setting, and some research-based interventions are repeated readings, assisted readings, and independent readings. These researchers suggest that further studies need to be conducted with oral reading fluency at the secondary level.

Therrien, (2004), conducted a meta-analysis on 33 studies published on repeated readings between 1977-2001 that looked at oral reading fluency and reading comprehension that included students with learning disabilities. Therrien concluded that repeated reading improved the oral reading fluency and reading comprehension for students with learning disabilities. The researcher outlined the essential instructional components that include adult implementation of repeated readings intervention that included corrective adult feedback, and performance criterion. Therrien concludes that performance criterion is recommended because it increases oral reading fluency. Therrien recommends that adult-run modeling should be studied further

because it was not included in this study. Additionally, repeated reading can be used to increase oral reading fluency and reading comprehension.

Saenz and Fuchs (2002) conducted a study to examine secondary students with learning disabilities reading comprehension with expository and narrative text. The researchers found that secondary students with learning disabilities had more difficulty with reading comprehension and oral reading fluency with expository text than with narrative text. The researchers explain that the most common reason students are referred to special education is for reading difficulties. The researchers concluded that secondary students with learning disabilities may have difficulty using prior knowledge and are not able to make predictions about words that have an effect on their oral reading fluency. Secondary students with learning disabilities need instruction with expository reading material, inferential skills, vocabulary, and oral reading fluency. The researchers suggest direct instruction, teaching summarizing and outlining skills, pre-teaching vocabulary, and repeated readings may increase oral reading fluency and reading comprehension. Additionally, the researchers suggest on-going assessment.

### **Oral Reading Fluency as a Predictor of Reading Comprehension**

The connection between the constructs of oral reading fluency and predicting reading comprehension through curriculum-based measurement has been the focus of much reading research. Yovanoff, Duesbery, Alonzo, and Tindal (2005) synthesized their research on oral reading fluency, and give very important information about reading comprehension. They suggest that comprehension relies on vocabulary and fluency, and that it is a very important part of elementary school learning and teaching. They concluded that oral reading fluency helps with predicting reading comprehension, vocabulary development, and oral reading fluency (Yovanoff,

Duesbery, Alonzo, & Tindal, 2005). Yovanoff, Duesbery, Alonzo, and Tindal (2005) also assert that, curriculum-based measures continue to be important in the era of high stakes testing, and they emphasize oral reading fluency as a skill for good reading.

Rasinski, Padak, McKeon, Wilfong, Friedauer, and Heim (2005) conducted their research on secondary students in high school assessing their oral reading fluency through one-minute reading probes that determined each student's word-recognition level. The researchers suggest that oral reading fluency goes beyond elementary grades and oral reading fluency is a significant variable in secondary students reading and academic development. The researchers outline that students who read below the 25th percentile require additional time to complete reading tasks and that can lead to frustration, avoidance of reading tasks, and school failure. Oral reading fluency must be taught to secondary students and developing oral reading fluency must be an instructional goal in secondary schools. Rasinski et al. suggests that future research includes oral reading fluency in secondary reading instruction, and strategies such as repeated readings, student practice, listening to fluent readers who model fluent readings through recordings are strategies that might impact an increase in oral reading fluency.

### **Oral Reading Fluency and the READ 180 Program**

The research on oral reading fluency suggests instructional strategies that increase oral reading fluency and include, the use of authentic reading materials used in the general curriculum, repeated readings, audio taped models, modeling by proficient readers, work study skills, oral reading fluency drills, vocabulary development activities, reading comprehension practice, motivational strategies, reading out loud using grade leveled reading probes, direct instruction, independent reading, repeated readings with feedback, the implementation of performance criterion, and the use of expository and narrative text. The READ 180 Program

uses authentic reading materials from the general curriculum through the library of literature that it included in the program (Scholastic, 2009). The READ 180 Program uses repeated readings through the direct teacher lead instruction and the computer aided instruction (Scholastic, 2009). The READ 180 Program implements audio taped models by proficient readers through books on CD-Rom, and through the computer aided instructional component of the program (Scholastic, 2009). Work study skills are included in the READ 180 Program through direct instruction, computer aided instruction, and whole group wrap up (Scholastic, 2009). Oral reading fluency drills are included in the READ 180 Program through the computer aided instruction, and will be a measurement construction in this study through curriculum based measurement leveled reading probes (Scholastic, 2009). The READ 180 Program uses expository and narrative text through the library and direct instruction. The READ 180 Program has natural motivational strategies that are built into the program as the students move through the program (frequent input from the teacher, computer aided instruction monitoring and feedback, lexile print outs, and the completion of books that are included in the library) (Scholastic, 2009).

### **Linguistic Comprehension**

One of the constructs of this study is looking at linguistic comprehension as one of the measures of reading comprehension. Linguistic comprehension in adolescent literacy is discussed by Deshler and Hock (2007) and includes; knowledge of facts, concepts, vocabulary, language, text structures, verbal reasoning structures, and strategies. The literature base on linguistic comprehension is limited and will be discussed below.

Johnston and Kirby (2006) conducted a longitudinal study with 153 students who began the study in third grade and ended in fifth grade. The researchers used hierarchical regression

analyses (predicting reading comprehension from the grapheme-phoneme conversion product and word recognition product) comparing good and poor readers with listening comprehension. Listening comprehension was the number one predictor in all their analyses.

Braze, Tabor, Shankweiler and Mencl (2007) studied reading skill related abilities in young adults (age 16 to 22) and how these abilities outlined in the Simple View of Reading (decoding, linguistic comprehension, and reading comprehension) effect this populations' reading comprehension skills. The researchers were able to demonstrate through simple correlations that linguistic comprehension captured 55% of the variance in reading comprehension, and when age was partialled from each measure that it still remained at 44%. The researchers concluded that there is appreciable evidence suggesting that both decoding and linguistic comprehension are key factors in reading comprehension remediation efforts for adolescent readers.

Georgiou, Das, and Hayward (2009) studied 50 students (ages 8 to 10) who performed average decoding and listening skills, but demonstrated poor reading comprehension skills. The researchers concluded that decoding and linguistic comprehension accounted for a large proportion of the variance in reading comprehension (45% to 47%).

Marcuso and Shanweiler (2010) expanded the Simple View of Reading (decoding, linguistic comprehension, reading comprehension) to remedial adult students (n=48) who were attending community college. The researchers administered multiple standardized tests to remedial adult students and intercorrelations were developed among the measures. Listening comprehension (.53) and oral vocabulary (.52) were strongly correlated. Regression analyses were conducted using reading comprehension as the dependent measure and they found that



listening comprehension and decoding accounted for 34% of the variance in reading comprehension. The researchers concluded that there is moderate support for listening comprehension as it relates to reading comprehension.

The majority of current research on teaching listening comprehension skills focuses on students who are English Language learners (EL) and various teaching methods have emerged. Cheung (2010) emphasizes that listening comprehension is a prerequisite to the teaching and the development of language skills such as speaking, reading and writing and that listening comprehension sets the stage for the acquisition of speaking English. The use of two types of advance organizers (key sentences and key vocabulary) were taught to second year EL university students who demonstrated improved performance on listening comprehension post-test measures when exposed to advanced organizers (Jafari & Hashim, 2012). Amin, Amin, and Aly (2011) studied the explicit language strategy-based instruction approach (cognitive academic language learning approach, CALLA) and the effects on listening comprehension with secondary school students in Egypt, and they found that the students who implemented the CALLA approach achieved more gains on their listening comprehension skills than students who did not implement the CALLA approach. Aponte-de-Hanna (2012) found that raising a students' strategic awareness from a cognitive perspective can increase a students' listening comprehension, and with the implementation of strategic-based lessons can encourage a learners' autonomy in the classroom.

Even though the literature on linguistic comprehension is limited, the empirical studies above validate the importance of linguistic comprehension in reading comprehension. The linguistic comprehension construct is a key component for secondary students with learning disabilities. The empirical studies included above validate that linguistic comprehension is a

highly correlated construct of reading comprehension. Linguistic comprehension has been repeatedly validated through this limited number of studies that include readers who have difficulty with reading comprehension. Teaching strategies that include advanced organizers with vocabulary development have been studied and shown to be effective with adult English Language learners. The limited number of studies and studies done specifically with secondary students with learning disabilities makes this current study more important to the research base. Additionally, the current study might add insight to the effectiveness of the READ 180 Program and the construct of linguistic comprehension and reading comprehension.

### **Reading Comprehension With Secondary Special Education Students**

Improving reading comprehension for secondary students with learning disabilities has been of great interest to researchers (Deshler & Hock, 2007). In the era of high stakes testing, improving Average Yearly Performance, and a need to graduate from high schools with better literacy skills has been a catalyst for this interest (The Educational Trust, 2003). Researchers have been particularly interested in instructional strategies and interventions that are evidence and research-based that may have an impact on the secondary student with learning disabilities reading comprehension (Mastropieri, Scruggs, & Graetz, 2003). The strategies and interventions mentioned in this section are evidence-based and are integrated into the READ 180 Program.

Research on reading comprehension has been extensively studied in the literature. Multiple meta-analyses have been conducted to synthesize the research and the common constructs (e.g. computer aided instruction, strategy instruction, graphic organizers, direct instruction, teacher and peer modeling, and frequent feedback) that have been studied. The READ 180 Program is represented as a scientific reading program that is evidence-based. Many

of the evidence-based approaches of these meta-analyses are included in the READ 180 Program such as computer aided instruction, strategy instruction, graphic organizers, specialized reading instruction, direct instruction, teacher and peer modeling, and frequent feedback. Each of these evidence based practices and the research that supports their effectiveness will be discussed in more detail in the following paragraphs.

**Computer aided instruction.** A large body of research exists around the construct of reading comprehension and the use of computer aided instruction, which is a component of the READ 180 Program. This research validates that computer aided instruction is an effective way to build the reading comprehension skills of secondary students with learning disabilities (Scruggs, Mastropieri, Berkeley, & Graetz, 2010; Stetter & Hughes, 2010; Slavin, Cheung, Groff, & Lake, 2008; The National Joint Committee on Learning Disabilities, 2008; Gajria, Jitendra, Sood, & Sacks, 2007; Scruggs & Sencibaugh, 2007; Jitendra, Edwards, Sacks, & Jacobson 2004; Soe, Koki, & Chang, 2000; Slavin, Lynch, Fawcett, & Nicolson, 2000).

Lynch, Fawcett, and Nicolson, 2000, conducted an evaluation study on computer-aided instruction and reading comprehension with eight secondary students with learning disabilities. The researchers used a computer-assisted reading comprehension support software that was used in conjunction with direct instruction provided by a special education teacher. The results showed significant gains (effect size of .5) in reading comprehension post-test scores on standardized reading tests, oral reading fluency, and reading comprehension skills. The researchers concluded that computer-aided instruction with reading support is an effective way to increase reading comprehension skills at the secondary level with students who have learning disabilities.

Hall, Hughes, and Filbert (2000), synthesized seventeen studies that implemented computer-assisted instruction in reading for students with learning disabilities. The computer aided instruction studies included pre-reading, word recognition, vocabulary and language, reading comprehension and higher order thinking skills. The seventeen studies included the author, subject (age and grade), length of intervention, independent variable, dependent variable, results, and reliability. Thirteen of the seventeen studies showed improvement in reading comprehension when using computer-aided instruction during reading instruction in special education. The researchers concluded that students with learning disabilities that were receiving computer-aided instruction improved in oral reading fluency and reading comprehension. The researchers concluded that computer-aided instruction alone is not enough to impact the reading skills of students with learning disabilities (reading comprehension and oral reading fluency), but a blended approach (computer-aided instruction with direct instruction in reading instruction) is the best approach for students with learning disabilities.

**Strategy instruction.** A second area of research exists with the construct of strategy instruction and increasing reading comprehension skills with secondary students with learning disabilities. Examples of strategy skills might include word attack skills (learning prefixes, suffixes, and analyzing multi-syllabic words), sentence writing (parts of speech and how sentences are formed), mnemonic skills (key words that help students remember strategies so that they can be used sequentially), and questioning strategies (sequenced and correlated) to name a few. Two of these strategies are integrated into the READ 180 Program (e.g., word attack skills, and sentence writing). Researchers have found that using reading strategies can improve the reading comprehension skills of secondary students with learning disabilities (Berkeley, Mastropieri, & Scruggs, 2011; Scruggs, Mastropieri, Berkeley, & Graetz, 2010; The

National Joint Committee on Learning Disabilities in 2008; Gajria, Jitendra, Sood, & Sacks, 2007; Jitendra, Edwards, Sacks, & Jacobson, 2004; Hall, Hughes, & Filbert, 2000; Vaughn, Gersten, & Chard, 2000).

Berkeley, Mastropieri, and Scruggs (2011) conducted a quasi-experimental study on the effects of reading comprehension strategy instruction with secondary students with learning disabilities. The results indicated that secondary students with learning disabilities who were given reading comprehension strategies performed significantly better with large effect sizes (.93) than those students who did not receive the reading comprehension strategy instruction. The students who had been given the reading comprehension strategy instruction maintained a large effect size on the post-test analysis. The READ 180 Program is embedded with reading comprehension strategies that include direct instruction, computer aided instruction, the use of graphic organizers, guided and independent reading, modeled reading, and frequent adult feedback.

**Graphic organizers.** A third area of research exists as it relates to the use of graphic organizers and their effect on the secondary students with learning disabilities reading comprehension. The READ 180 Program implements graphic organizers through the direct instruction component of the program. Examples of graphic organizers used in the READ 180 Program are word webs, Venn-diagrams, brainstorming charts, and character analysis to name a few. Researchers have found that the use of graphic organizers improve secondary students with learning disabilities reading comprehension skills (Scruggs, Mastropieri, Berkeley, & Graetz, 2010; Berkeley, Scruggs, & Mastropieri, 2009; Hollenbeck, 2011; Vaughn, Gersten, & Chard, 2000; Gajria, Jitendra, Sood, & Sacks, 2007; Kim, Vaughn, Wanzek, & Wei, 2004; Jitendra, Edwards, Sacks, & Jacobson, 2004; Gajria, Jitendra, Sood, & Sacks, 2007).

Gajria, Jitendra, Sood, and Sacks (2007), summarized the findings of 29 studies that have been designed to improve reading comprehension of expository text for students with LD. The researchers concluded that the following strategies were based on evidence based practices that improved reading comprehension of expository text: content enhancements such as graphic organizers, and computer assisted instruction. The researchers concluded that the effect sizes for the instructional approach of graphic organizers was between .33 to .54, and based on these effect sizes the researchers concluded that graphic organizers are very effective ways to improve secondary students with learning disabilities reading comprehension.

Mastropieri, Scruggs, and Graetz (2003) synthesized research on reading comprehension instruction with secondary students with learning disabilities. The researchers reviewed reading comprehension instructional research strategies that have scientific evidence to improve reading comprehension of secondary students with learning disabilities. They concluded that spatially organized graphic organizers that help facilitate reading comprehension of content-area instruction were strategies that improved reading comprehension of secondary students with learning disabilities. The researchers gave specific reference to the use of the Inspiration Software Program and the development of spatially organized graphic organizers that facilitated reading comprehension of content-area instruction had a positive impact on reading comprehension of text for secondary students with learning disabilities.

**Hands on learning.** There is research that includes learning by doing known as "hands on learning." Many secondary students with learning disabilities have processing issues that affect one or more modalities (visual, auditory, and kinesthetic) (Scruggs, Mastropieri, Berkeley, & Graetz, 2010). The READ 180 Program is a highly visual, auditory, and kinesthetic hands-on program that appeals to the each of these modalities. Research has concluded that mixed-

methods programs such as the READ 180 Program have been shown to have a great positive impact on the development of reading comprehension skills of secondary students with learning disabilities because of the multiple modalities which appeal to a wide range of learning styles (Scruggs, Mastropieri, Berkeley, & Graetz, 2010).

**Direct instruction.** The research on secondary students with learning disabilities and the reading comprehension construct contains a significant amount of research on reading instruction delivery model known as direct instruction. Direct instruction is a common teaching approach that is delivered through explicit, guided, and scripted instruction with minimal variation in the scope and sequence. The READ 180 Program employs a direct instruction delivery model that compliments computer aided instruction and independent practice. Researchers have repeatedly validated this reading instruction delivery model as a highly effective way to teach reading comprehension to secondary students with learning disabilities (Scruggs, Mastropieri, Berkeley, & Graetz, 2010; Sencibaugh, 2007; Garjria, Jitendra, Sood, & Sacks, 2007; Mastropieri, Scruggs, & Graetz, 2003; Gersten, Fuchs, Williams, & Baker, 2001; Berkeley, Scruggs, & Mastropieri, 2009; The National Joint Committee on Learning Disabilities, 2008; Hollenbeck, 2011; Vaughn, Gersten, & Chard, 2000; Vaughn, Levy, Coleman, & Bos, 2002; Gersten, Fuchs, Williams, & Baker, 2001; Swanson, 1999; Joseph, & Schisler, 2009; Cantrell, Almasi, Carter, Rintamaa, & Madden, 2010; Manse-Williamson, & Nelson, 2005; Gajria, Jitendra, Sood, & Sacks, 2007; Kim, Vaughn, Wanzek, & Wei, 2004; Jitendra, Edwards, Sacks, & Jacobson, 2004; Fagella-Luby, Schumaker, & Deshler, 2007).

Mastropieri, Scruggs, and Graetz, (2003), conducted a study on reading comprehension instruction with secondary students with learning disabilities. They synthesized from their research that students with learning disabilities face a difference between their reading ability

and the reading level of the textbooks that are used at the secondary level. Their research indicates that effective instructional interventions include direct instruction. Reading comprehension strategies with secondary students who are LD should be deliberate and intensive with text during large blocks of class time. Secondary students with LD require strategy instruction to learn academic content that are the most effective when they are implemented accurately, consistently, and intensively in both special education and general education settings at the secondary level.

Jitendra, Edwards, Sacks, and Jacobson (2004), summarized the research on nineteen vocabulary instruction studies between 1978 and 2002 for students with learning disabilities. The researchers concluded that vocabulary instruction for students with learning disabilities can lead to gains in word knowledge. The teaching of vocabulary interventional strategies through the direct instruction approach can enhance vocabulary development in students with learning disabilities. Students with learning disabilities benefited the most from vocabulary instruction in grades 4 through 12, direct instruction vocabulary instruction intensity had the largest outcome for instruction that lasted 60 minutes, and instruction individually or in small groups was the most effective. The READ 180 Program implements direct instruction and is taught with fidelity in a 90 minute block of time.

**Teacher and peer modeling.** Another extensive area of literature for teaching reading comprehension for secondary students with learning disabilities is in the area of teacher and peer modeling. The READ 180 Program integrates teacher and peer modeling in the direct instruction, computer aided instruction, the CD-Rom library, and the whole-class wrap up. Research has consistently shown that secondary students who receive teacher and peer modeling in reading make greater gains in reading comprehension (Berkeley, Scruggs, & Mastropieri,



2009; Sencibaugh, 2007; Mastropieri, Scruggs, & Graetz, 2003; Gersten, Fuchs, Williams, & Baker, 2001; Edmonds, Vaughn, Wexler, Reutebuch, Cable, Tackett, & Schnakenberg, 2009; Hollenbeck, 2011; Vaughn, Gersten, & Chard, 2000; Gersten, Fuchs, Williams, & Baker, 2001; Swanson, 1999; Joseph, & Schisler, 2009).

Gersten, Fuchs, Williams, and Baker (2001), synthesized twenty years of research on teaching reading comprehension strategies to students with learning disabilities. They concluded that instructional approaches that enhance reading comprehension performance of LD students is promising with both narrative and expository texts, the use of multiple comprehension strategies, teacher modeling and extensive feedback, teacher encouragement of maintenance and transfer, and longer treatment durations with students with learning disabilities are needed to ensure long-term maintenance of the strategy effects on students with learning disabilities reading comprehension.

Edmonds, Vaughn, Wexler, Reutebuch, Cable, Tackett, and Schnakenberg (2009) synthesized 29 reading intervention studies that were conducted between 1994 and 2004 on secondary students with reading difficulties. Thirteen of the studies met the criteria for meta-analysis which included decoding, oral reading fluency, vocabulary, and reading comprehension. The researchers concluded that secondary students with reading difficulties can improve their reading comprehension when given targeted effective reading interventions that include; multiple reading components, and word reading strategies. The researchers found that oral reading fluency supported reading comprehension in secondary students, and secondary students who are struggling readers benefited from explicit comprehension strategies such as modeling. The READ 180 Program provides modeling in the direct instruction, computer aided instruction, CD-Rom library, and the whole class wrap up.

**Frequent feedback.** There is another area, frequent progress monitoring and adult feedback, in the research that shows promise for secondary students with learning disabilities. The READ 180 Program gives on-going and frequent progress monitoring and adult feedback as the students participate in the program. Frequent progress monitoring and adult feedback in reading instruction has been shown to have an impact on a secondary students with learning disabilities reading comprehension (Sencibaugh, 2007, Gersten, Fuchs, Williams, & Baker, 2001; Hollenbeck, 2011; Gersten, Fuchs, Willams, & Baker, 2001; Swanson , 1999; Joseph & Schisler, 2009).

Joseph and Schisler (2009) synthesized 23 studies that included the effectiveness of teaching basic reading skills on the basis of inclusion to students in the secondary setting published between 1986 and 2006. The basic reading skills included word identification, oral reading fluency, and reading comprehension skills. The researchers concluded that teaching word reading to adolescents produced positive reading outcomes, explicit systematic instruction procedures (i.e., prerequisite reading skills, modeling, error correction, active student responding, repeated practice, and reinforcement), and had the greatest impact on oral reading fluency and reading comprehension. Additionally, explicit instruction programs that incorporate repeated readings exercises, peer-assisted learning programs, and instruction in sight words, phonics, and a combination of sight word and phonics instruction were concluded to be the most effective ways to teach adolescents fluency and comprehension skills.

Swanson (1999) conducted a meta-analysis on 92 studies (54 studies included measures of word recognition, 58 studies including measures of reading comprehension, and twenty studies included both word recognition and reading comprehension) that were conducted on students with learning disabilities in the domains of word recognition and reading

comprehension. The researchers concluded that the highest treatment effect for reading comprehension instruction included: directed response and questioning that is directed by the teacher, control for difficulty of processing demands of tasks (i.e., short activities, the level of difficulty controlled by the teacher, teacher assistance, teacher provided simplified demonstrations, the tasks are sequenced for easy to difficult, and task analysis), elaboration of text, modeling by the teacher of the steps, group instruction, and strategy cues (i.e., think alouds). The READ 180 Program incorporates all of these components during the instruction e.g., direct responses and questioning lead by the teacher, control for difficulty through frequent assessment and leveled instruction, short activities that are varied, a lot of teacher assistance and demonstrations, sequenced instruction, the use of content text, teacher modeling of steps, group instruction, and reading strategy components.

Many research studies have been conducted on the construct of reading comprehension with special and general education students in the elementary and secondary settings. The common areas in the research include; the use of computer aided instruction, reading strategy instruction, the use of graphic organizers, hands-on multiple modality learning, direct instruction, teacher and peer modeling, and frequent progress monitoring and adult feedback. The research supports the READ 180 Program as all of its program components fit into the research on the construct of reading comprehension.

### **The READ 180 Program**

As many school districts implement tiered interventions, publishers are responding by providing a broad range of reading interventions. The READ 180 Program fit the essence of the law, and states that it is an Evidence Based Program that is a Scientific Based Reading Program,

use multi-modalities (auditory, visual, and kinesthetic modalities of teaching), has assessment and progress monitoring components, and appeals to multiple learning styles (READ 180, 2006).

The READ 180 Program (2006) research base was developed from the reading concepts of phonemic awareness, phonics, fluency, vocabulary development, reading comprehension, and technology-based assessment driven by the individualized instruction component. The READ 180 Program is built on three core activities. The first activity is whole-group instruction. During this activity, the teacher begins the day by providing systematic instruction in reading, writing, and vocabulary. This activity is to be directed for about 20 minutes. The second core activity is small-group direct instruction, using the READ 180 software, as well as modeled and independent reading. During this rotation, the teacher works closely with students so that their individual needs can be met. Independence with individualized skills can be met while fluency and comprehension skills can be modeled through independent reading. The rotation lasts for approximately 60 minutes. The final activity is a whole-group wrap-up. This session lasts for approximately 10 minutes and is a culmination of the three activities (READ 180, 2006).

The READ 180 Program integrates repeated readings, and proficient audio modeling of reading within the Computer Assisted Instructional (CAI) software program. One reading intervention is developing reading fluency. Reading fluency is not new to the field of education or the field of special education. Wexler, et al, (2007) synthesized 19 reading fluency interventions with secondary students. Their study found that three factors commonly influence ORF, (1) repeated reading with a model, (2) using an audio taped model of a reading passage, and (3) modeling by an adult or proficient peer significantly influenced the ORF of secondary students.

The READ 180 program CAI uses grade lexiles to place students into their current and proceeding reading levels which may have an effect on their scores on the state standards tests. Lexiles are grade level assessments that place a student based on an individual students reading level. Lexiles help make individual data based curriculum decisions with reading fluency that is similar to CBM. Crawford, Tindal, and Stieber (2001), studied 51 students' oral reading rates aloud using CBM and were able to predict students' current and future performance on statewide achievement tests in reading and math. CBM is a well documented and widely used tool to monitor ORF of students, help make curriculum decisions based on classroom-based assessments, and guide instruction toward state benchmarks.

One key component of the READ 180 Program is the computer assisted instruction (CAI). Singhal (1998), conducted a literature review that investigated how computers have been used as a tool to teach reading. Singhal concluded that computer assisted instruction has great promise as a tool for teaching reading, and she asserted that CAI can be individualized to specific student needs.

Hall, Hughes, and Filbert, (2000), conducted a research synthesis of 17 CAI programs in reading for students who were LD. The synthesis was evaluated by type of reading intervention (i.e., pre-reading, word recognition, vocabulary, language, comprehension, and higher order thinking skills). Thirteen out of the 17 studies showed that LD students made reading improvements when using a CAI program. The study remarked that CAI reading instruction when coordinated with teacher guided direct instruction was the most effective in increasing the reading skills of students with LD.

The READ 180 Program implements literature and text from the core content areas. In a study conducted by MacArthur and Haynes (1995), 10 students who were LD used a science textbook that was delivered in a hypermedia format on the computer. The hypermedia textbook and software was developed to compensate for students with learning difficulties in reading, and students who were low achieving students. This study found that all 10 of the students in the study performed better after using the hyper media science textbook with the software than without. The hypermedia textbook was easy to use, and provided LD secondary students significant assistance in understanding content in the core textbook through this CAI format.

Finally, CAI with audio is a key component of the READ 180 Program through the programs software and audio books. Boyle, et al. (2002), examined the effects of history audio textbooks on secondary students with LD. The audio text CD-ROM format had a significant effect on secondary LD students content acquisition.

### **Effectiveness of the READ 180 Program**

Many studies have been conducted to validate the effectiveness of the READ 180 Program. The publisher (scholastic) has sponsored multiple studies with multiple populations (k-10) to validate the effectiveness of the READ 180 Program. Additionally, non-publisher sponsored studies have been conducted as well. The following empirical studies are included below and address the effectiveness of the READ 180 Program.

Kim, Samson, Fitzgerald, and Hartry (2009) conducted a study using READ 180 as a mixed-methods literacy intervention program for struggling readers. This study had a sample of 294 participants, included grades four through six, and examined the causal effects of word reading efficiency, reading comprehension and vocabulary, and ORF using a pretest posttest

model. It was conducted in an after school program in a lower socio-economic district in Massachusetts over a 23 week treatment period. One group of students received one hour of the READ 180 Program and one group of students received the district after-school program curriculum. Additionally, the students were administered a 32 question post-test survey about their reading motivation and after-school experiences. The students who received the READ 180 Program were given a modified one hour version of the READ 180 Program (the READ 180 Program is a 90 minute program) that included; individualized computer-assisted reading instruction with videos, leveled text, and word study activities, independent and modeled reading practice with leveled texts. The READ 180 Program had a positive effect on the fourth grade student's ORF and attendance.

Maxwell (2008) describes the results of a qualitative study that examined use of the READ 180 Program and how it was implemented in secondary schools post Hurricane Katrina in New Orleans. The READ 180 program was implemented in 9th grade English classes where students were 2 to 4 grades behind grade level in reading, and some of the students had special needs such as LD (Maxwell, 2008). Maxwell (2008) found that with a half year of a ninety-minute a day implementation, students were improving in reading comprehension on state benchmark tests one to two grade levels. The teaching staff recognized the power of the READ 180 program, have implemented the READ 180 Program as core curriculum at the secondary level, are implementing the READ 180 Program with fidelity (90 minute a day blocks), and see how the READ 180 Program is bringing students back up to grade level in reading, which will ultimately impact their AYP.

A recent study was independently conducted on the effectiveness of the READ 180 Program implemented with fidelity (90 minute program four days a week for twenty-three

weeks) with 312 fourth through sixth grade students in a voluntary after-school program and looked at the measures of vocabulary, reading comprehension, spelling and oral reading fluency (Kim, Capotosto, Hartry, & Fitzgerald, 2011). The students were randomly selected out of a group of at-risk readers who scored below proficiency on the Massachusetts Comprehensive Assessment System (MCAS) in English Language Arts (n=312, 36% fourth grade students, 44% Fifth grade students, and 20% sixth grade students) in a mid-sized urban school district in Southern Massachusetts. The SAT 10 reading vocabulary, and spelling (abbreviated battery), the Dynamic Indicators of Basic Early Oral Reading Fluency, attendance records, and fidelity of READ 180 implementation were the variables in the study. Kim, Capotosto, Hartry, and Fitzgerald (2011) concluded that the implementation of the READ 180 Program had a positive impact on reading comprehension (effect size of .32) and vocabulary scores (effect size of .23) on the SAT 10, and the READ 180 Program improved reading vocabulary and comprehension scores. The researchers concluded that "The READ 180 Program can improve student outcomes if (a) it targets moderate risk students scoring near the 40th to 45th percentile and (b) it implements both teacher-directed whole-group instruction and the three small group rotations" (Kim, Capotosto, Hartry, & Fitzgerald, 2011, p. 198). Additionally, the researchers concluded that "ultimately, improving attendance in a high-quality, structured literacy program such as READ 180 may enhance students' ability to read for understanding in the upper elementary and middle grades" (Kim, Capotosto, Hartry, & Fitzgerald, 2011, p. 199).

The areas of the Kim, Capotosto, Hartry, and Fitzgerald (2011) study that were not addressed include: the voluntary nature of the randomly selected students in the after-school program who participated in the study, there were no secondary students included in the study (fourth, fifth, and sixth grade students only) which provides a lack of evidence of the



effectiveness of the READ 180 Program at the secondary level where it is widely used with limited empirical evidence, and no special education students were delineated in the sample. The researchers suggest that this study be replicated in future research of the READ 180 Program for three distinct reasons; replication of this study should be conducted to test the READ 180 logic model (from "high-risk readers," to "moderate-risk readers"), a replication of this study is needed to test the external validity of this study's findings to identify program components that will improve after-school student achievement, and replication is needed to see the effect of attendance in an after-school program and reading achievement change over time.

In addition to the studies already discussed, the What Works Clearinghouse (WWC, 2009) under the United States Department of Education, published an intervention report in October of 2009 on adolescent literacy. This third party report reviewed and published their assessment of the effectiveness of the READ 180 Program under strict evidence standard requirements, and found that only seven out of 100 empirical studies met their strict evidence standard requirements. Of the seven studies, only three demonstrated a medium to large effect size for reading comprehension, and general literacy achievement. The three studies showed a statistically significant and substantively important positive effect. None of the studies showed statistically significant or substantively important negative effects. Three of the seven studies did not meet the WWC's criteria for a strong research design. Four common outcome domains were noted and discussed in the reviews of the studies. They included alphabetics, reading fluency, comprehension, and general literacy achievement.

Scholastic, the publishing company of the READ 180 Program has sponsored multiple field tests of the READ 180 Program. One such Scholastic sponsored study by Haslam, White, and Klinge (2006), and was conducted with seventh and eighth grade students in the Austin

Texas Independent School District, and it examined the effect of the READ 180 Program on struggling readers in grades seven to nine. The study was conducted with a sample of 307 participants over a one year period. This study was a quasi-experimental design and the experimental group was exposed to the Read 180 Program and the control group did not participate in the READ 180 Program. The experimental and control group were compared to each other on a pre-test and post-test measure (English-Language version of the 2004 Texas Assessment of Knowledge and Skills Reading Test). Although a small effect size based on Cohen's *d* at 0.14, the study showed an average score gain of the experimental group improvement index of +5 based on the post-test measures. This study validates that the Read 180 Program increased the score gain of +5 with a small effect based on Cohen's *d*.

Another Scholastic research study was conducted by Interactive Incorporated (2002). Interactive Incorporated conducted a study with nine middle schools across three school districts in the United States (1 school district in Ohio with 5 middle schools, and 2 districts in Texas, with 6 middle schools). The study looked at the efficacy of the Read 180 Program's print and electronic adaptive intervention components. This quasi-experimental study was conducted using a control group (no Read 180 instruction) and the experimental group (Read 180 print and electronic adaptive intervention components) at all 11 middle schools. The SAT-9 was used as a pre-test and a post-test to document effect. Based on Cohen's *d*, the effect in this study was closer to a medium effect at 0.33 with a gain score improvement index of +13 on the post-test measures. This study validates that the Read 180 Program increased the average score gain of experimental groups reading skill by 13 points on the post-test with a medium effect size based off of Cohen's *d*.

Scholastic sponsored another study by Lang et al. (2008) with 1,197 ninth grade students who were identified as struggling readers based on the Florida Comprehensive Assessment Test (FCAT). This quasi-experimental study was conducted with two groups, 190 high-risk readers (100 who received the READ 180 program, and 90 who did not), and 409 moderate risk readers (207 who received the READ 180 program, and 202 who did not). The experimental groups received 90 minutes of instruction in the READ 180 Program per day and the control group did not. Lang concluded that the study had a small effect size 0.02 with a gain score improvement index of +5 on the FCAT. This study validates that the READ 180 Program increased the average score gain of experimental groups reading skill by 5 points on the post-test with and had a small effect size.

Scholastic Research (2008), conducted a quasi-experimental study with 285 students in grades six, seven, and nine in the Desert Sands Unified School District in California. The experimental READ 180 group received 90 minutes of the READ 180 Program per day. The control group received the standard language arts curriculum with no additional instruction. The study reported a medium effect size of 0.45 with a gain score improvement index of +7 on the outcome measure. This study validates that the READ 180 Program increased the average score gain of experimental groups reading skill by 7 points on the post-test, and had a medium effect.

Scholastic supported research once again by White, Haslam, and Hewes (2006), on three cohorts of ninth grade students in Arizona who were identified as reading one or more grade levels below ninth grade in reading and were given the READ 180 Program. Multiple demographic factors of the cohorts were included in the study English Language Learners, special education eligibility, gender, and ethnicity and were factors that were analyzed. In this quasi-experimental design, 826 intervention students were matched with 826 matched non-

participants. The study reported a small effect size of 0.13 with a gain score improvement index of +5 based on the posttest measures (Terra Nova Reading Scores Inventory, SAT-9, and the Arizona Instrument to Measure Standards). This study validates that the READ 180 Program increased the average score gain of experimental groups reading skill by 5 points on the post-test, and had a small effect.

Scholastic supported another study conducted by White, Williams, and Haslem (2005). In this study, the researchers compared 2900 urban students in Brooklyn, New York (362 students who were participating in the READ 180 Program and 2528 students who were not) for one year in 16 schools (grades four to eight), and they compared their language arts test outcomes for students who were participating in the READ 180 Program with students who were not participating in the READ 180 Program. They reported a small effect size of 0.08 with a gain score improvement index of +3 on the outcome measure the New York State Department of Education End of Year Test in English Language Arts, and the CTB/MacGraw-Hill Reading Test developed for the city of New York. This study validates that the READ180 Program increased the average gain score of experimental groups reading skill by 3 points on the post-test and it had a small effect.

Woods (2007), in an unpublished doctoral dissertation studied three annual cohorts of middle school students in an urban middle school in Virginia over three years who used the READ 180 Computer Aided Instruction individualized reading-remediation program. This quasi-experimental study compared the READ 180 group to a group of students who did not receive the READ 180 Program. The experiment group and the control group received matched instructional time in READ 180 and language arts instruction. The researcher used a pre-test and a post-test with both groups of students. The Degrees of Reading Power (DRP), the

Standardized Test for Assessment of Reading (STAR), and the Scholastic Reading Inventory (SRI) were used for the groups. The study reported a medium effect size 0.45 with a gain score improvement index of +17 on the outcome measures. This study validates that the READ 180 Program increased the average score gain of experimental groups reading skill by 17 points on the post-test and it had a medium effect.

The READ 180 Program has empirical evidence that demonstrates that it is an effective scientific based reading program. The READ 180 Program has been studied by the publisher Scholastic who has a monetary interest in documenting the effectiveness of the program, but it also been studied by outside researchers without monetary interest. This study attempted to add to the research base on READ 180 as an independent study that would specifically include secondary students with learning disabilities.

The READ 180 Program is a mixed method instructional reading model (e.g. direct instruction, computer aided instruction, modeling, frequent feedback from teachers and peers, progress monitoring, strategy instruction, the use of graphic organizers, and hands on learning) that was developed based on the evidence from the reading instruction literature (Scholastic, 2009). The READ 180 Program should build reading skill in decoding (oral reading fluency), linguistic comprehension, and ultimately build reading comprehension with learning disabled secondary students who are being served in a pull out resource SPED model.

### **Summary**

In conclusion, the above literature review discusses oral reading fluency in a variety of ways (as a construct, as a valid assessment tool, as a reading strategy, as a predictor of reading comprehension, the use with secondary special education students with learning disabilities, and

oral reading fluency in the READ 180 Program). Additionally, the limited research on listening (linguistic) comprehension, and the literature on reading comprehension with secondary students was presented. Finally, literature on the READ 180 Program and the READ 180 implementation models was presented.

Teaching reading to special education students who are identified as learning disabled has been studied extensively. A majority of the research has been done in the elementary grades and secondary students are not often included in the research. The READ 180 Program has not been studied exclusively or extensively with secondary students in special education with learning disabilities. In light of this fact, the READ 180 Program is described as a scientific based reading program that is evidence-based and is designed to be used in the secondary setting. The literature presented includes specific areas of reading instruction to enhance secondary students with learning disabilities who are struggling with reading skills that include oral reading fluency, linguistic comprehension, and reading comprehension. In conclusion, the READ 180 Program includes all of the above research-based reading instructional strategies that have been shown to help the secondary student with learning disabilities ability to improve reading performance.

## CHAPTER III

### METHODOLOGY

This study was designed to investigate the effects of the READ 180 Program on decoding (oral reading fluency), linguistic comprehension, and reading comprehension with secondary students with learning disabilities who were being taught in a special education pullout model at a high school. This section includes: (a) a restatement of the research questions, (b) description of the research design, (c) description of sampling procedures, (d) human subjects considerations, (e) instrumentation, (f) procedures and treatment, and (g) data analysis methods.

#### Research Questions

The research questions were as follows:

4. What are the changes in oral reading fluency scores, as measured by easyCBM, of secondary students with learning disabilities who were being instructed with the READ 180 Program?
5. What are the differences in the linguistic comprehension scores, as measured by The Listening Comprehension Test Adolescent, of secondary students with learning disabilities who were being instructed with the READ 180 Program?
6. What are the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities who were being instructed with the READ 180 Program?

### **Research Design**

This study was implemented in one ninth-grade resource class at a high school in Northern California. The English Language Arts curriculum in the class was the READ 180 Program. The study began at the beginning of the spring 2013 semester and concluded at the end of the spring 2013 semester. Pretests in linguistic comprehension and reading comprehension were administered to the students. Progress monitoring was done weekly by administering one minute timed reading probes to each student in the study that measured total words read and total miscues. The students continued to be taught with the READ 180 Program with fidelity (90 minutes per day) four days a week for the fourteen-week period. The researcher met weekly with the special education resource teacher to ensure that the students were instructed for four 90-minute blocks of the READ 180 Program each week (implementation with fidelity). The students received instruction in spelling, writing, grammar, word usage, writing sentences, paragraphs, and essays, oral reading fluency, literature, and reading comprehension. At the conclusion of the intervention, all participants were given a posttest identical to the pretest in linguistic comprehension and reading comprehension. The weekly progress monitoring in oral reading fluency was concluded.

### **Sampling Procedure**

The Northern California high school where the study was conducted is a four-year comprehensive high school (9th, 10th, 11th, and 12th grades) located in northern California with a population of approximately 1700 students. The ethnic demographics of the school are as follows (2011-2012 school year); Black or African American 3.4 %, American Indian or Alaska Native 2.1%, Asian 9.2%, Filipino 0.2%, Hispanic or Latino 21%, native Hawaiian/Pacific



Islander 0.3%, and 62.4% White. Additional demographic information recorded is socioeconomically disadvantaged 43.4%, English Language Learners 17.1%, and Students with Disabilities 12.2%. During the 2012 to 2013 school year 32% of the students received free lunch and 5% of the students received reduced lunch.

The participants in this study included a convenience sample of ninth grade students enrolled in a pullout special education resource class. The participants consisted of 10 students, eight males and two females, who ranged in age from 14 to 15 years. Seven of the students were designated English learners (EL); there were six students who were Hispanic, two students who were Other Asian, one student who was Black, and one student who was Asian/Indian. The students' intellectual quotients (IQ) scores ranged from 81 to 107 (below average to average), and one student did not have an IQ score because his ethnicity was black (it is not lawful to give an IQ test to a Black student in the state of California due to the Larry P. v Riles case, 1979). The students' pretest lexile scores ranged from 322 to 1100 (grade range of 2.5 to above sixth grade level). All of the students who were included in the study were ninth grade students with learning disabilities, and they were qualified for resource pullout special education through an Individualized Educational Plan (IEP). Additionally, all of the participants in the study read below the 25<sup>th</sup> percentile of their peers based on prior assessments conducted in their eighth grade year, and they were selected prior to entering ninth grade to be instructed with the READ 180 Program. These students were required to enroll in the resource special education pullout Basic English class which covers all English Language Arts content required for high school graduation. The students attended the Basic English class for the READ 180 Program for four days a week for 90 minutes of instruction (Table 2). Those ninth grade students with learning disabilities who were not reading below the 25<sup>th</sup> percentile were served in a parallel special

education pullout model that consisted of a modified core English Language Arts Program that was taught for 56 minutes four days per week by a different highly qualified mild to moderate special education resource teacher.

Table 2

Demographic Data on Ten Ninth Grade Students With Learning Disabilities That Includes Age, Ethnicity, English Language Learner Status, Full Scale Intellectual Quotient, and READ 180 Pretest Lexile Scores

Student	Age	Ethnicity	English Language Learner	Full Scale IQ	READ 180 Pretest Lexile Range
1	15	Hispanic	No	87	613 6.0
2	15	Hispanic	No	94	1100 6.0+
3	15	Hispanic	Yes	92	415 4.0
4	14	Asian/Indian	Yes	87	346 2.5
5	14	Other Asian	Yes	107	805 6.0
6	14	Black	No	--*	981 6.0+
7	15	Hispanic	Yes	87	629 6.0
8	14	Other Asian	Yes	103	322 2.5
9	14	Hispanic	Yes	81	527 4.0
10	15	Hispanic	Yes	96	916 6.0+

\*Black students may not be given an IQ test in a public school in California (Larry P. v Riles, 1979), no full scale IQ score available for Student Number 6

The teacher in this study was a fully credentialed mild to moderate special education resource specialist who is highly qualified and holds a Bilingual Cross-Cultural, Language, and Academic Development authorization (BCLAD), and has a secondary authorization in English. The teacher has a master's degree in education with an emphasis in special education. She has been teaching at the Northern California high school for fourteen years as a resource specialist serving students with learning disabilities in a resource pull out model. The teacher spent five years as special education paraprofessional, taught three years in the America Reads program at the elementary school level, and student taught in an elementary bilingual classroom, elementary resource classroom, and a secondary resource classroom. She has been teaching the READ 180 Program for three years (training and mentoring in year one, and with fidelity for years two and three). This study was conducted during her third year teaching the READ 180 Program.

## **Protection of Human Subjects**

An application for permission to conduct the study was submitted to the University of San Francisco Institutional Review Board for the Protection of Human Subjects (IRBPHS) as well as to the research and assessment department of the school district. Informed consent was requested from each participant. Since the participants were under the age of 18, parental consent for research participation was obtained. In addition to the informed consent letter, a cover letter describing the purpose, research design, instruments, and confidentiality of the study was provided to participants. The rights of all participants involved in the study were protected and there were no physical, mental or emotional risks associated with the study.

## **Instrumentation**

The dependent variables of the study were decoding (oral reading fluency), linguistic comprehension, and reading comprehension. The instruments that were used for the progress monitoring were leveled oral reading fluency probe (easyCBM). The instruments that were used for the pretest and posttest were a linguistic comprehension test (The Listening Comprehension Test Adolescent), and reading comprehension test (Gates MacGinitie Reading Comprehension Test).

### **easyCBM Oral Reading Fluency Probe**

The easyCBM (Curriculum Based Measurement) oral reading fluency probes were used as a weekly progress monitoring tool that gave the researcher the students' total words read and total miscues. The researcher personally administered the weekly progress monitoring (oral reading fluency probe) weekly to each student in the study. Examples of the one-minute easyCBM reading probes are included (see Appendix D).

The easyCBM was designed by researchers (Alanzo, Park, & Tindal, 2012) at the University of Oregon as a benchmark and progress-monitoring component of the Response to Intervention model (RTI). The publishers of the easyCBM System emphasize that the goal of the easyCBM system is to help educators in making good instructional decisions. This project began with a grant from the federal Office of Special Education Programs in 2006, but it has continued to expand with the help of the publisher's school district partners across the United States. The assessments included in the easyCBM system are known as CBMs which are standardized measures that sample a year's worth of curriculum, and CBMs assess the degree to which students have mastered the skills (such as oral reading fluency) and knowledge that is critical at each grade level. One of the easyCBM reading measures is designed to measure oral reading fluency through Passage Reading Fluency (PRF) measures which include both benchmark / screening and progress monitoring assessment. The publishers employed Item Response Theory (IRT) during the development of the PRF measurements. This increased the sensitivity of the measurements, and it helps to monitor the student's growth during progress monitoring. Additionally, IRT increases the consistency of the alternate forms of each measurement type (oral reading fluency probes by grade level). Because all of the students in this study read below the 25<sup>th</sup> percentile, the researcher used the eighth grade PRF's. None of the students in the study were fluent with their ORF with the eighth grade PRF's, and the researchers chose this level to progress monitor ORF, get baseline, and develop aim/goal lines. The instrument was scored by having the student read a predetermined one-minute eighth grade level reading probe to the researcher. The researcher scored the reading probe by totaling the number of words read in one minute minus miscues (misstated words in the reading passage). The number generated gave the researcher a total number of words read correctly in one minute, and the total number of miscues

that the student made during the progress monitoring. According to Patarapichayatham et al. (2011), the slope reliabilities for easyCBM eighth grade ORF measures are high (all above .8 with a SEM .017 to .194) , and the easyCBM observed scores are stable for ORF.

### **The Listening Comprehension Test Adolescent**

The Listening Comprehension Test Adolescent was used as the pretest and the posttest to measure students' linguistic comprehension. This test was administered by the researcher individually to all students in the study. A copy of the test is included (see Appendix E).

The Listening Comprehension Test Adolescent published by LinguiSystems (Bowers, Huisingh, & LoGiudince, 2009) is a standardized test that assesses listening comprehension and language designed for students age 12 through 18. The test emphasizes listening comprehension and focuses on cognitive/listening processes that include: attention/recognition, precision, accuracy, concentration, reasoning, decision-making, understanding/comprehension, empathy, intent/purpose, persistence, problem solving, and acknowledgement. The test assesses a student's performance of skills in classroom listening comprehension behaviors and includes: summarizing and sequencing information, participating in class discussion, following directions, understanding the main idea of the story or discussion, attending to the details of a message, understanding language concepts, problem-solving and predicting, and listening for meaning. The subtests include (a) main idea: the student identifies the main idea of the story, (b) details: the student remembers story details well enough to answer questions about them, (c) reasoning: the student answers inference and reasoning questions about the story, (d) vocabulary and semantics: this subtest requires the student to give synonyms, interpretations, or definitions of words used within the story, and (e) understanding messages: this subtest requires the student to

glean and express relevant information from brief messages. This test consists of 73 questions that are asked of the students individually after brief messages are read to each student. The student gets the answer correct or incorrect, and the raw score is interpreted from the norm table. The test-retest median reliability coefficients of the subtests by age are .89 with a SEM of 4.83, and the reliability based on item homogeneity (Kuder-Richarson, KR20) coefficients for each subtest total by age is .93.

### **Gates MacGinitie Reading Comprehension Test**

The Gates MacGinitie Reading Comprehension Test Level 10/12 Form T (MacGinitie, MacGinitie, Maria, & Dreyer, 2000) was used as the pretest and the posttest to measure reading comprehension. This test was administered by the researcher individually to all students in the study. A copy of the test is included (see Appendix F). The 10/12 Form T was used due to the spring administration of the pretest and posttest of their ninth grade year.

This test is designed to provide a general assessment of reading achievement that consists of a vocabulary test and a comprehension test. The comprehension tests is a 48 question test that measures a student's ability to read and understand different types of prose based off of 11 published passages selected from published books and periodicals. The student's respond to four multiple choice answers for each question, and their raw scores are interpreted from the norm table.

The Gates MacGinitie Reading Comprehension Test has Extended Scale Scores (ESS). ESS is a common way that students' standardized test scores are presented in special education. The key characteristics of the ESS include that progress can be followed over a period of years on a single and continuous scale that can be analyzed with means and standard deviations

looking at the pretest and posttest scores. The measurement of reading achievement is in equal units thus allowing averages to be computed. The ESS gains are greatest in the elementary grades so one might see less change in the ESS at the secondary level, and ESS levels are different for each student because of their different reading levels.

The Gates MacGinitie Reading Tests Fourth Edition Level 10/12 Form T was originally normed in 2000. The test was re-normed with a stratified random sampling design in the winter and spring of 2006 with 3,472 tenth grade students in 43 states. The reliability indices using the Kuder-Richardson Formula 20 (K-R 20) reliability coefficients were computed for the fall reading comprehension scores at .91 and spring reading comprehension scores at .92.

### **Procedures and Treatment**

The students in the ninth grade special education pullout resource classes were provided with a cover letter, informed consent form and a parent consent form. During this time the researcher explained the purpose of the study to the treatment group. In addition, the researcher read aloud all of the documents and answered any clarifying questions from the students. The students were asked to return the informed consent forms to the researcher before the study began. Additionally, the students were informed that participation in the study was strictly voluntary and that there would not be any negative consequences for choosing not to participate in the study. Once the informed consent forms and parent consent forms were returned, each student was randomly assigned identification numbers from 1- 10 to ensure confidentiality. Fifteen students were asked to participate in the study; however the researcher only received permission to include ten students in the study. Only the assessments from the students who had permission to participate in the study were used in the final data analysis.



### **Pretest Phase**

During the pretest phase of the study, the participants were assessed on their decoding (oral reading fluency), linguistic comprehension, and reading comprehension. The standardized pre-tests (easyCBM, The Listening Comprehension Test Adolescent, and The Gates MacGinitie Reading Comprehension Test) were given by the researcher before the treatments continued to be taught. All participants were given the pretest during the same week while they were in their resource pullout class. The researcher informed the participants that the material on the pretest might appear difficult but that they should try their best to complete it. The pretest was distributed to the participants and they were given as much time as necessary to complete it. It is standard protocol for students to have an untimed testing period for both The Listening Comprehension Test Adolescent (given one on one with the researcher) and The Gates MacGinitie Reading Comprehension Test (group administered and untimed with the researcher). Once the students were finished with the pretests, they were collected by the researcher and locked in a file cabinet for security purposes.

### **READ 180 with Fidelity Phase**

On the day following the pretest and first progress-monitoring probe, the students in the study continued their scope and sequence of READ 180. The students were given four 90-minute blocks of instruction per week for fourteen weeks. The researcher met weekly with the special education teacher; together the researcher and the special education teacher reviewed weekly lesson plans, and ensured that the READ 180 Program was implemented with fidelity (four 90 minute blocks per week).

The READ 180 Program was taught to the students with fidelity in four 90-minute blocks of instruction per week. The whole-group instruction was done during the first 20 minutes of the READ 180 instructional session. The teacher implemented the rBooks to teach reading skills and strategies, vocabulary and word study, and writing and grammar. The purpose of whole-group instruction was to build the students' reading, vocabulary, and writing skills through teacher-directed direct instruction (READ 180, 2005). The 20-minute small-group instruction was done during the rotations of the groups who were working independently with the Instructional Software and Modeled and Independent reading. The Teacher's Addition, rBooks, and Resources for Differentiated Instruction books were used. The purpose of the Small-Group Instruction was to build the students' reading, vocabulary, and writing skills through direct instruction. The Small-Group Instruction allows the teacher to provide intensive direct instruction that was customized to individual student needs (READ 180, 2005). An important component of the READ 180 Program was the modeled and independent reading. The Modeled and Independent reading component gave the students experience in reading demonstration. It demonstrated good reading practices and reading strategies through a narrator and reading coach. The library built oral reading fluency, vocabulary skills, reading comprehension skills, and provided reading practice for the readers. The library contained a range of reading levels and a choice of high-interest topics (READ 180, 2005). The Whole-Class Wrap Up was a direct instruction activity that provided the students a way to reflect on the learning that had taken place for the day. It reviewed the three components of the workshops that had just been completed (Small-Group Instruction, Computer Aided Instruction, and Modeled and Independent reading) (READ 180, 2005).

### **Progress Monitoring Phase**

All of the students in the study were given easyCBM oral reading fluency probes by the researcher on a weekly basis for fourteen weeks. The researcher administered the oral reading fluency probes individually with each student. The total number of words read and the total number of miscues were collected on each student in the study. The progress monitoring probes were used to measure oral reading fluency. The students' ORF was measured for four consecutive weeks and a starting baseline number of total words read correctly was given to each student. The aim line was developed by adding 1.5 words per week for the following ten weeks as recommended growth for students with learning disabilities by Fuchs and Fuchs (2011). The students' scores were graphed and compared to their aim lines to gauge the students' progress with total words read correctly.

### **Posttest Phase**

In the final posttest phase of the study, the participants were given the posttests identical to the pretest (The Listening Comprehension Test Adolescent; and The Gates MacGinitie Reading Comprehension Test). The posttests were used as a measure of linguistic comprehension and reading comprehension. The participants completed the posttest following the last week of the instructional phase. The posttests were distributed to the participants and they were given as much time as they need to complete them. Once the participants were finished, the posttests were collected by the researcher and secured in a locked file cabinet.

## **Data Analysis**

### **Research Question One**

In order to answer the first question, "What were the changes in the oral reading fluency scores, as measured by easyCBM, of secondary students with learning disabilities who were being instructed with the READ 180 Program?" The data from the progress monitoring were analyzed (total words read correctly, TWRC). The TWRC scores were analyzed using CBM progress monitoring graphs and aim lines to gauge the students' success. The student's baseline was gathered on the first four reading probes and a beginning ORF score was plotted on the graph (the median score of the four scores). The aim lines were developed by adding 1.5 words per week for the following ten weeks and an aim line was drawn on the graph (i.e., if the baseline was 100 TWRC then in ten weeks the aim line was drawn to 115 TWRC). During the progress monitoring phase (the preceding ten weeks) if the student was able to meet the aim line of 115 TWRC then it was determined by the researcher that the student had met their goal by meeting or exceeding the aim line (at or above 115 TWRC). Additionally, the student's miscues were collected; the median scores from the first probe and the last probes were compared, and analyzed by the researcher.

### **Research Question Two**

In order to answer the second question, "What were the differences in the linguistic comprehension scores, as measured by The Listening Comprehension Test Adolescent, of secondary students with learning disabilities who were being instructed with the READ 180 Program?" The data from the pretest and posttest was analyzed. The pretest and posttest scores

were analyzed using the Wilcoxon signed-rank non-parametric test to compare the median differences of the main idea, details, reasoning, vocabulary, understanding, and total test.

### **Research Question Three**

In order to answer the third question, "What were the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities who were being instructed with the READ 180 Program?" The data from the pretest and posttest was analyzed. The pretest and posttest scores were analyzed using the Wilcoxon signed-rank non-parametric test on the median differences of extended scale scores (ESS).

### **Summary**

This study was designed to explore the effects of three different constructs (decoding, linguistic comprehension, and reading comprehension) with secondary students (ninth grade) with learning disabilities who were served in a pullout resource model using the READ 180 Program taught with fidelity. One class of ninth grade students with learning disabilities and who qualified for special education pullout programs for English Language Arts instruction was studied. The students were given two pretests and two posttests in linguistic comprehension (The Listening Comprehension Test Adolescent), and reading comprehension (The Gates MacGinitie Reading Comprehension Test). Additionally, progress monitoring took place weekly and individually using easyCBM oral reading fluency probes assessed the students' total words read correctly (TWRC) and the number of miscues made in one minute. Goal analysis was conducted from the aim lines that were developed from the baseline and the student's miscues

were collected. The students continued with their instruction with The READ 180 Program.

Data was collected over fourteen weeks of instruction and analyzed by the researcher.

## CHAPTER IV

### RESULTS

The purpose of this study was to examine the impact that the READ 180 Program had on reading comprehension, decoding (oral reading fluency), and linguistic comprehension amongst the test population of secondary students with learning disabilities when implemented through a special education pull out model. This study had ten secondary students with learning disabilities who were being served in special education pull out model and were instructed with the READ 180 Program with fidelity for 90 minutes per day for four days per week. The students completed one pretest to assess their reading comprehension (The Gates MacGinitie Reading Comprehension Test), and their linguistic comprehension (The Listening Comprehension Test Adolescent).

Following fourteen weeks of instruction with the READ 180 Program, the students completed an identical posttest that assessed their reading comprehension (The Gates MacGinitie Reading Comprehension Test), and their linguistic comprehension (The Listening Comprehension Test Adolescent). Additionally, the students were given a weekly progress monitoring measure for fourteen consecutive weeks that monitored their oral reading fluency (Curriculum Based Measurement Oral Reading Fluency Probes, easyCBM) and the number of miscues. It was expected that the students' oral reading fluency scores, linguistic comprehension, and reading comprehension scores would increase from their pretest levels. Overall, the mean posttest scores were statistically significance for listening comprehension. Additionally, the goal analysis of the oral reading fluency scores in total words

read correctly showed an increase in six out of the ten students, and the overall amount of miscues (words read incorrectly) decreased over the fourteen-week period.

#### Research Question 1

*What were the changes in the oral reading fluency scores, as measured by easyCBM, of secondary students with learning disabilities who were being instructed with the READ 180 Program?*

The first research question was designed to investigate if there were any changes in the oral reading fluency scores of secondary students with learning disabilities who were instructed with the READ 180 Program. The progress monitoring probes were implemented from the easyCBM oral reading fluency progress monitoring one minute reading probes at the eighth grade level. The probes were administered weekly by the researcher and the students were able to show total words read in one minute, the number of miscues (mis-spoken words and/or omitted words), and gave a total number of words read correctly (total number of words read minus miscues equal total number of words read correctly). Aim lines were developed off of the baseline data and a goal analysis was conducted. It was expected that the students' oral reading fluency scores would increase over the treatment period.

Ten students were given oral reading fluency probes to see if there was a change in their total words read correctly (TWRC) over the fourteen week period. The students ranged on the first reading probe at the eighth grade level from 60 TWRC to 147 TWRC (Figures 2 through 11). On the last reading probe, students TWRC scores ranged from 78 to 169 (Figures 2 through 11). Six of the ten students met or exceeded their aim lines and increased their oral reading fluency more than 1.5 words per week during the fourteen-week period.



The oral reading fluency probes were provided by easyCBM. The researcher used reading passage probes 8.1 through 8.10 that were developed by the easyCBM Program at the eighth grade level. The study consisted of fourteen weeks of progress monitoring using probes 8.1 through 8.10. Probes 8.1 through 8.4 were used at the end of ten weeks and were re-administered during the last four weeks of the progress-monitoring phase.

All of the ninth grades students with learning disabilities in the sample read below grade level at the 25<sup>th</sup> percentile. The researcher used easyCBM oral reading fluency probes at the eighth grade level for progress monitoring due to the students' below grade level reading ability. The goal for the ninth grade students with learning disabilities was to gain 1.5 total words read correctly per week as outlined by the findings of Fuchs and Fuchs (2011). Aim lines were developed, the researcher conducted the progress monitoring weekly, and the student's total words read correctly were plotted on their progress monitoring graphs. The students' oral reading fluency scores are shown (Total Words Read Correctly, and aim lines) in Figures 2 to 11.

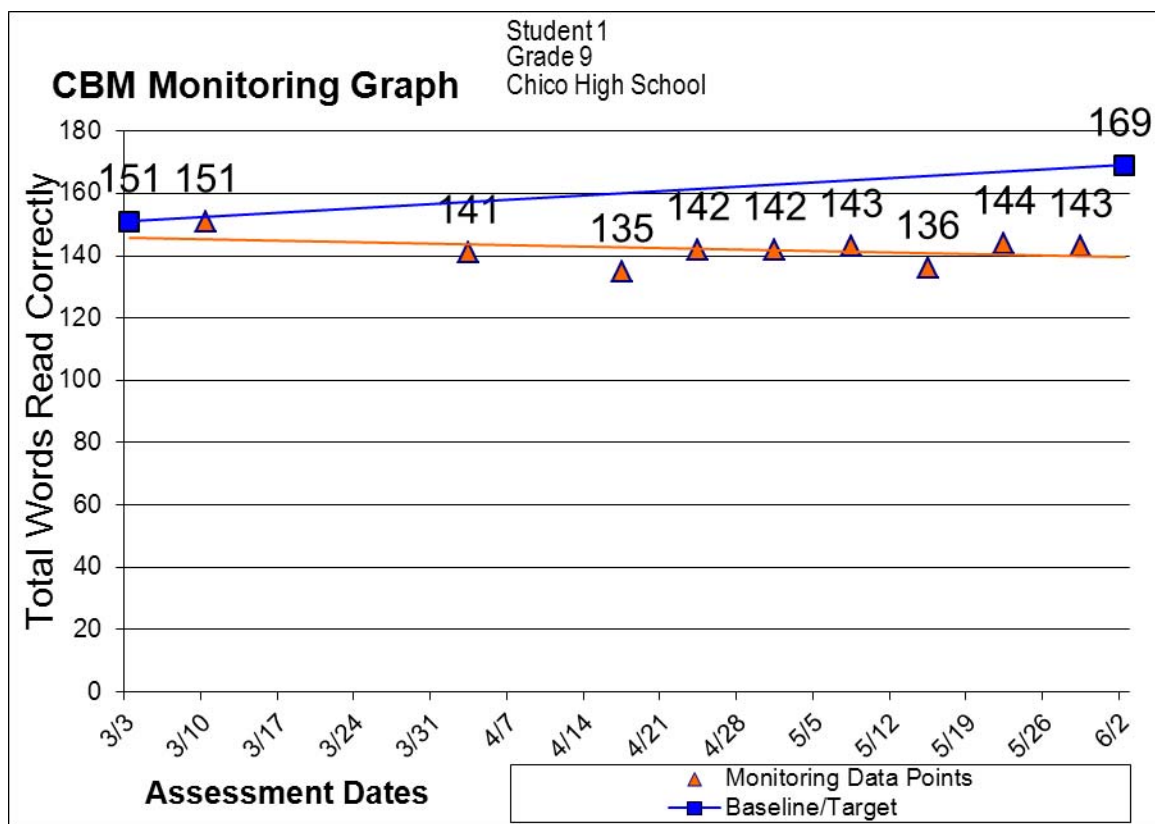


Figure 2. Student number one Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

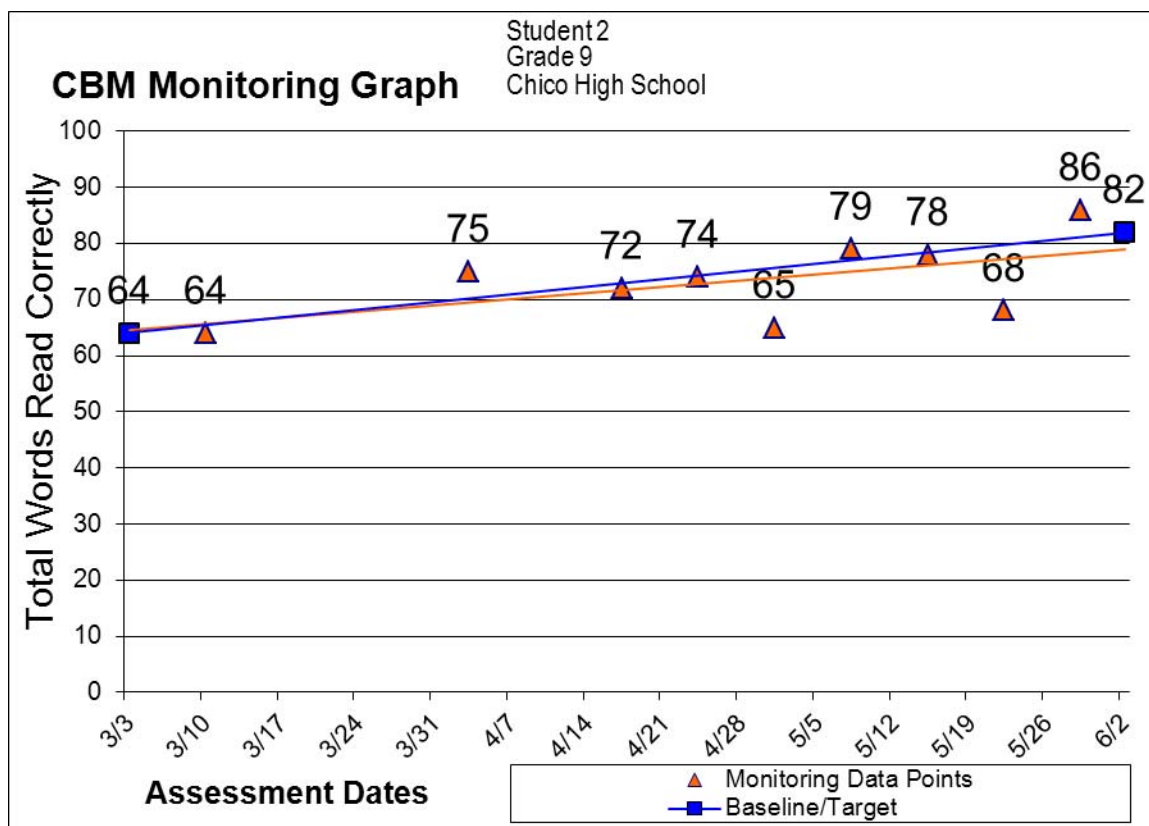


Figure 3. Student number two Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

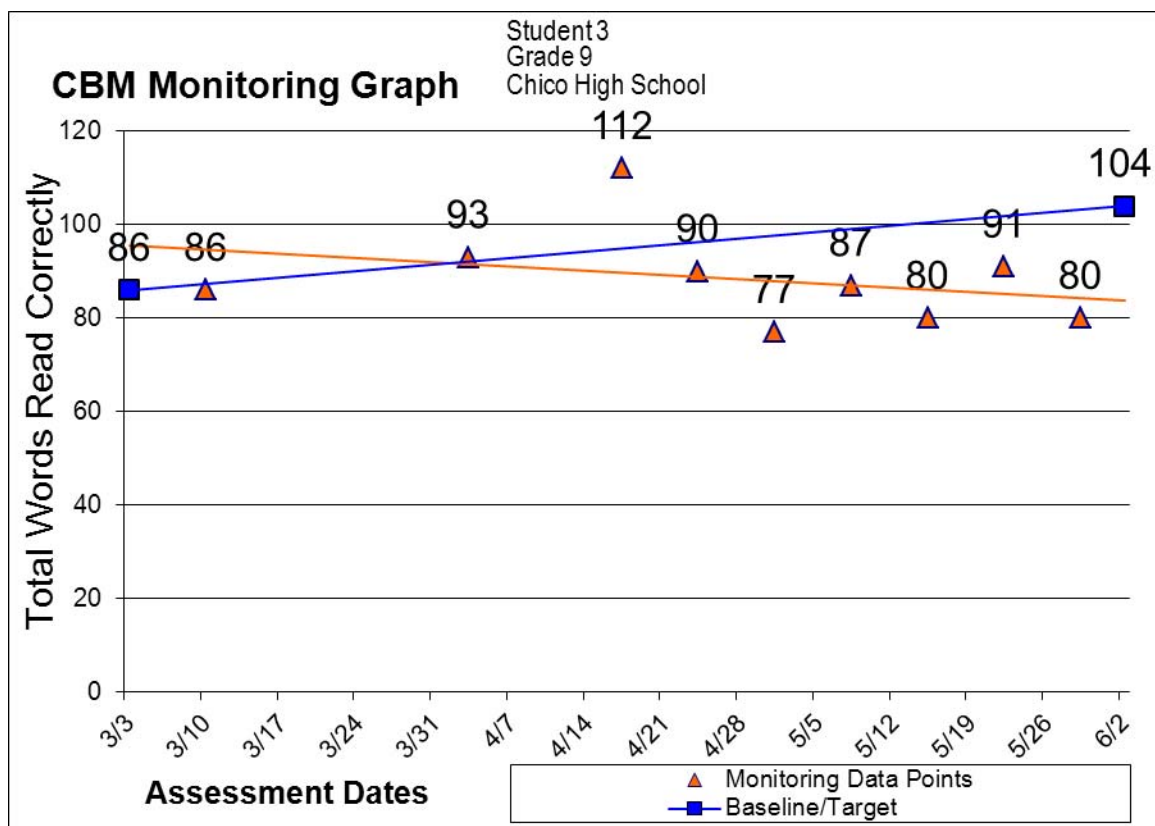


Figure 4. Student number three Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

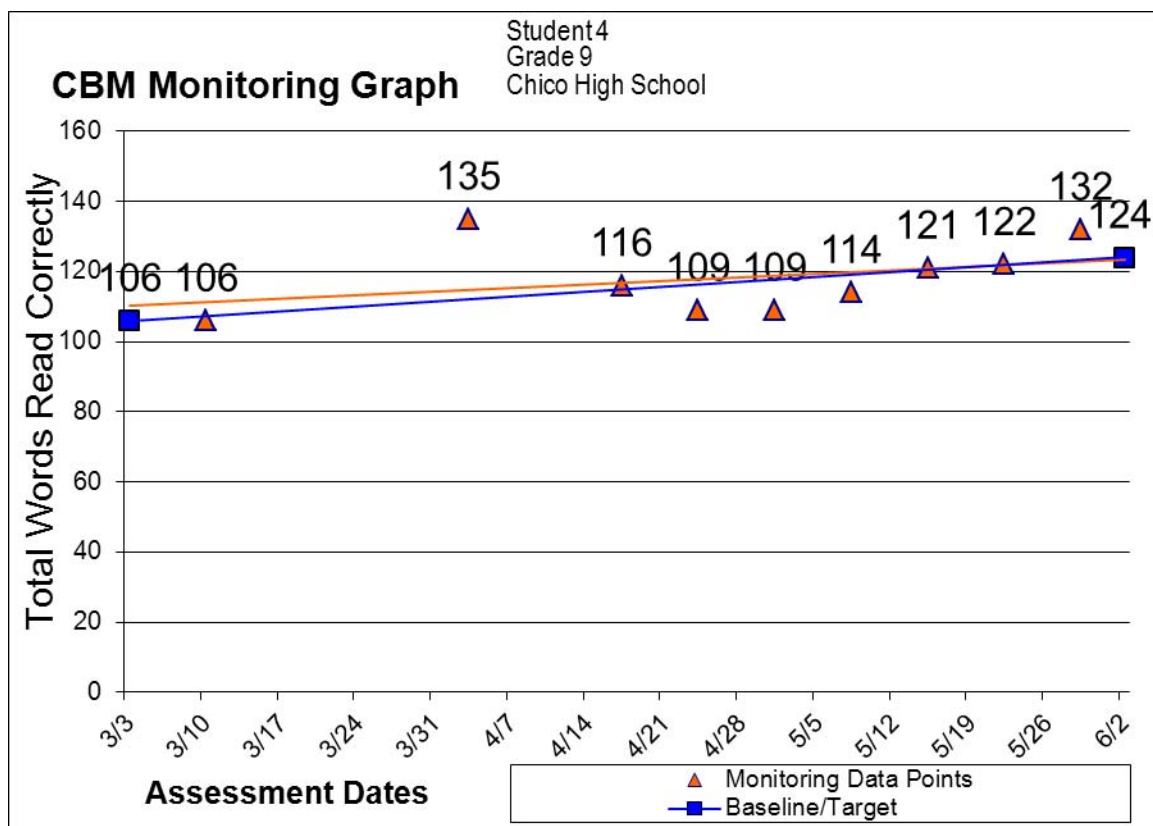


Figure 5. Student number four Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

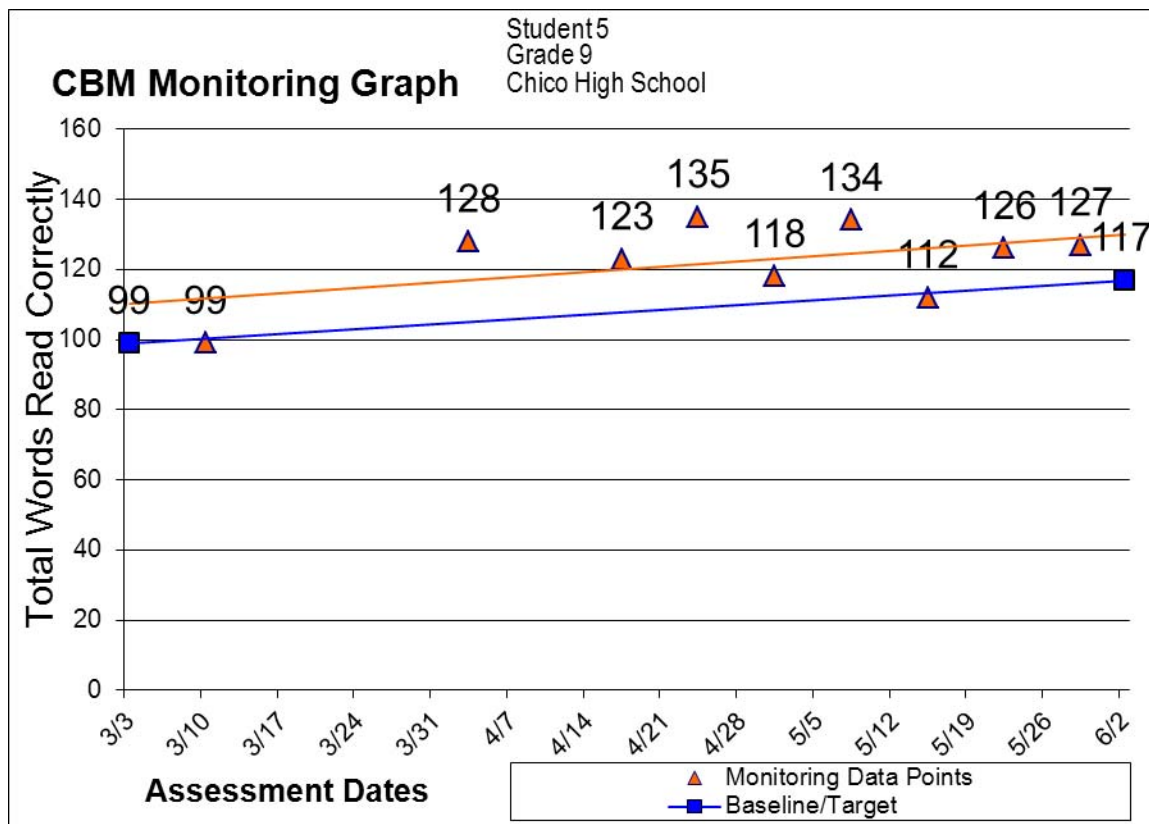


Figure 6. Student number five Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

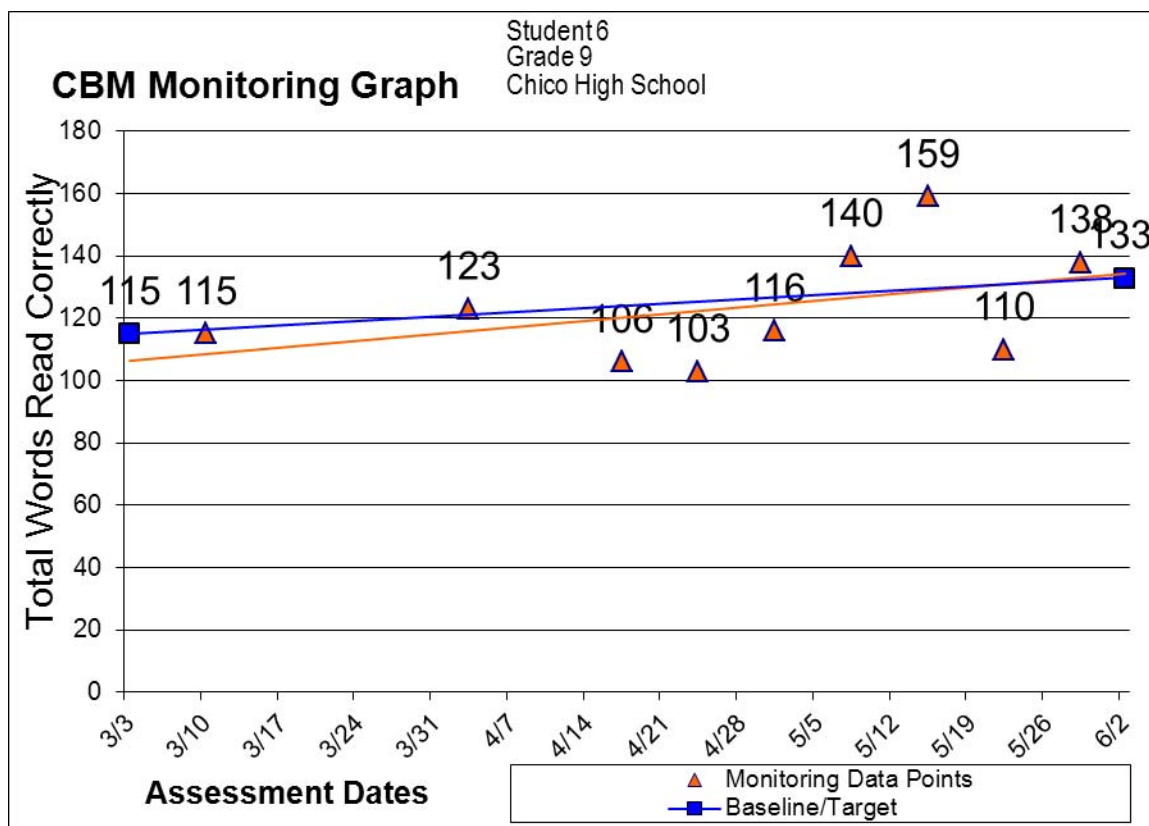


Figure 7. Student number six Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

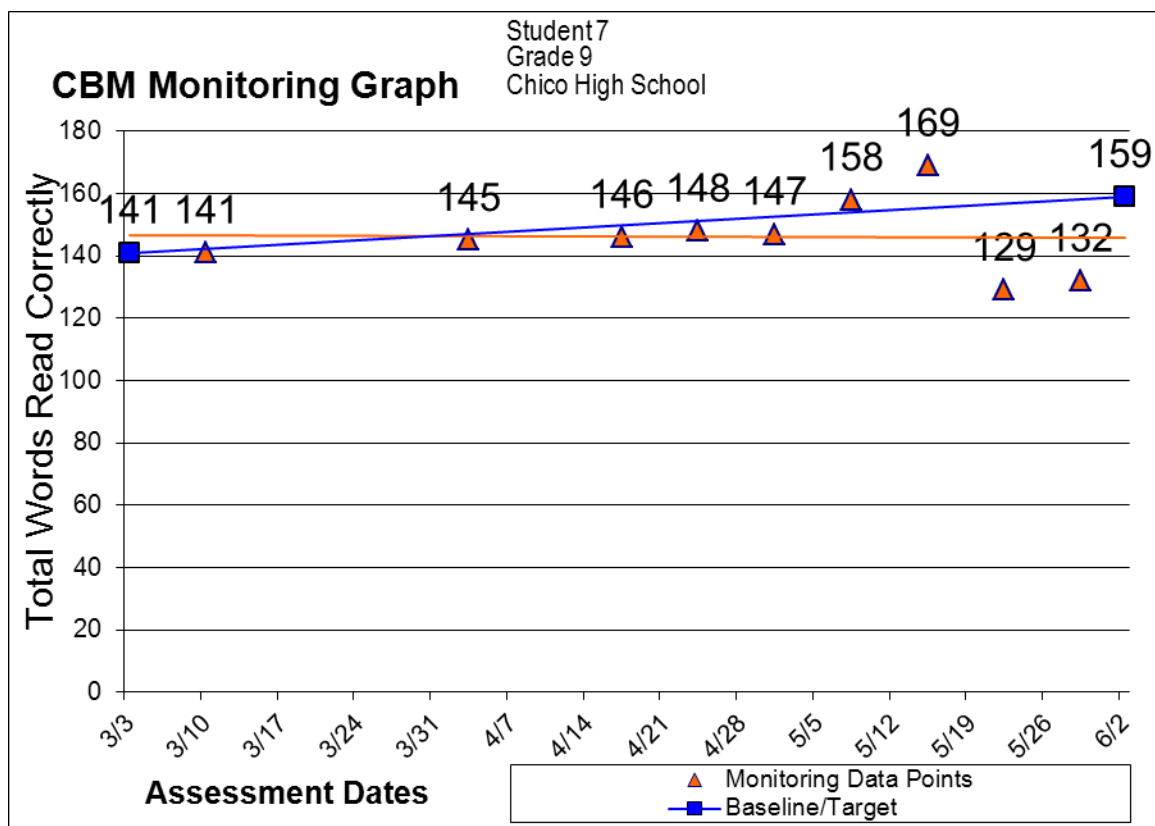


Figure 8. Student number seven Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).



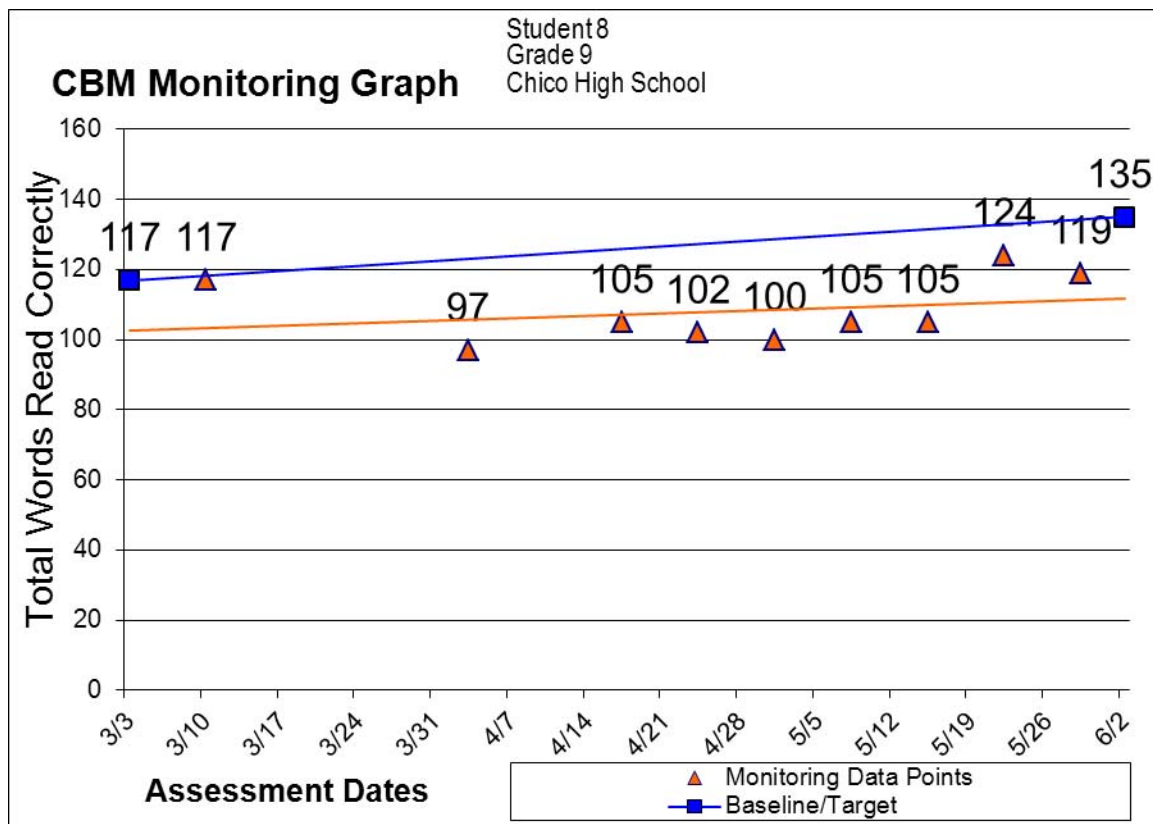


Figure 9. Student number eight Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

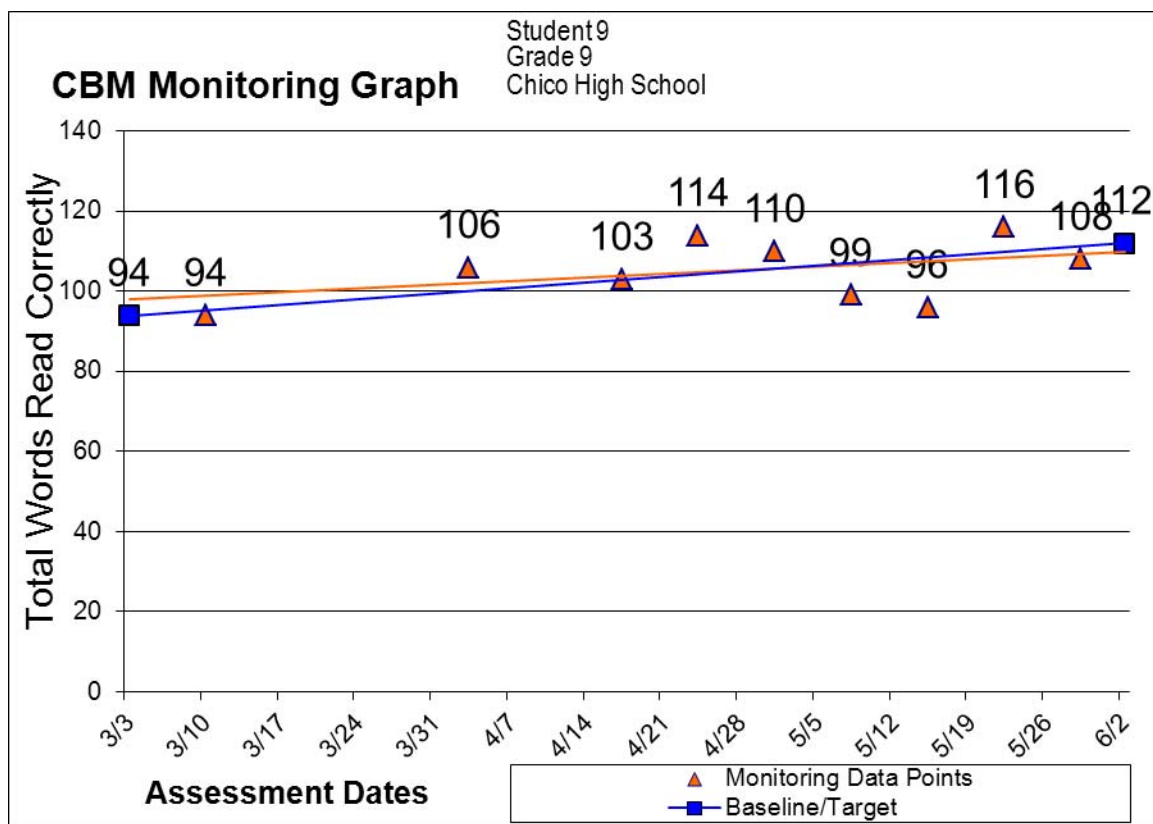
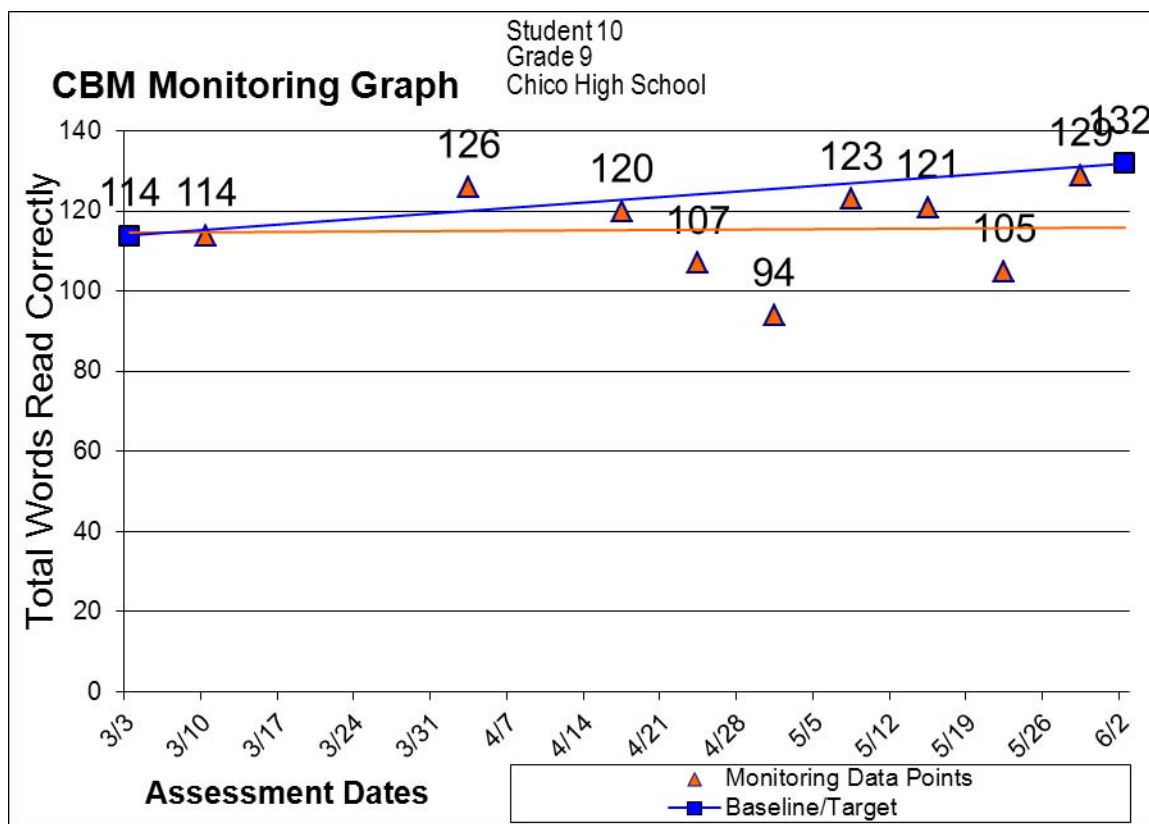


Figure 10. Student number nine Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).



*Figure 11.* Student number ten Total Words Read Correctly over fourteen weeks including monitoring points and baseline/target (aim line).

Additionally, data were collected on the ten students miscues on each oral reading

fluency probe over the fourteen-week period. The students' miscues ranged on the first reading probe at the eighth grade level on average from 2.6 to 6.2 miscues per reading probe (Figure 12).

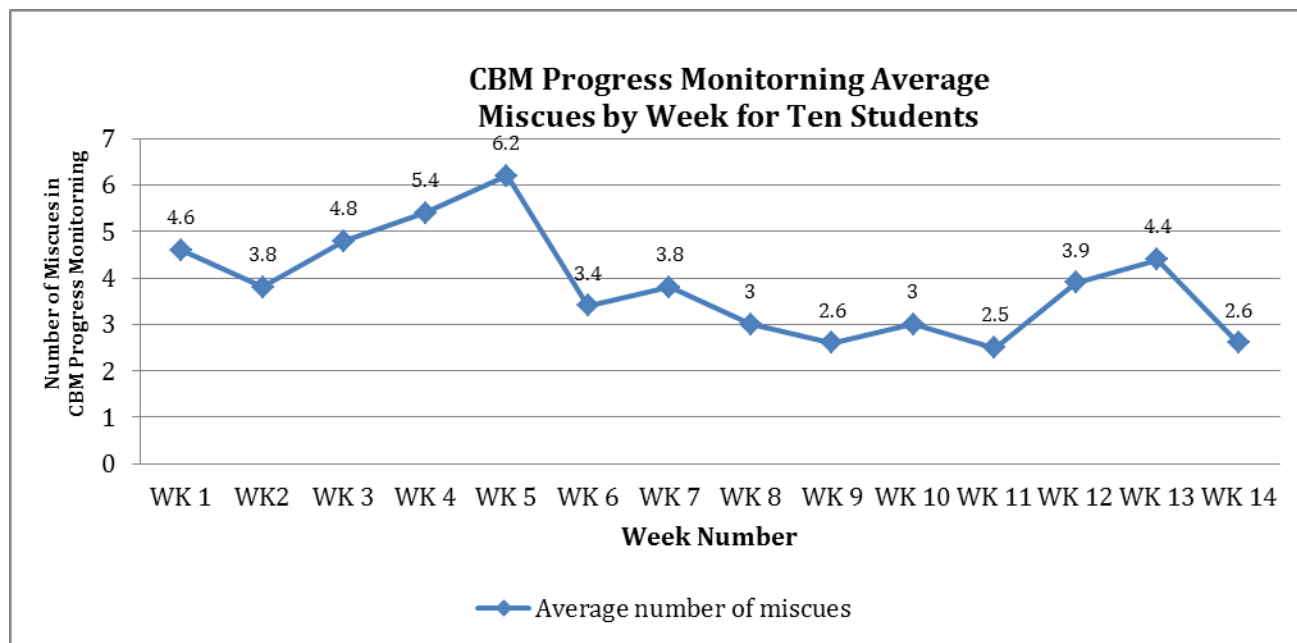


Figure 12. easyCBM progress monitoring average miscues by week for ten students

#### Research Question 2

*What were the differences in the linguistic comprehension scores, as measured by The Listening Comprehension Test Adolescent, of secondary students with learning disabilities who were being instructed with the READ 180 Program?*

The second research question was developed to see if there were significant differences on the linguistic comprehension pretest and posttest scores of the ten secondary students with learning disabilities who were being instructed with the READ 180 Program. The Listening Comprehension Test Adolescent includes five sub-tests (main idea, details, reasoning, vocabulary and semantics, understanding messages) and total test score. To determine if there were any differences on linguistic comprehension pretest and posttest scores, the Semi-Interquartile Range (SIQR) was implemented on the pretest and posttest scores, and median scores and standard deviations were computed. The Wilcoxon signed-rank non-parametric test was then calculated on the median scores and the standard deviations. The median scores and

standard deviations were compared on the pretests and posttest scores and four of the five subtests were statistically significantly different at the 0.05 level in favor of the posttest scores. Four of the five sub-tests on the posttest scores showed a statistically significant difference at the .05 level when the medians on the pretest and posttest were compared (Details, Reasoning, Vocabulary, and Understanding) (Table 3). There was also a significant difference between pretest and posttest median scores and standard deviations favoring the posttest on the total test score, indicating that there was a significant change in the students' listening comprehension on the posttest ( $p < 0.05$ ).

Table 3

The Wilcoxon Signed-Rank Non-Parametric Test On Medians and Standard Deviations from Pretest and Posttest Listening Comprehension Test Adolescent

	Main Idea (N=10) Median (SD)	Details (N=10) Median (SD)	Reasoning (N=10) Median (SD)	Vocabulary (N=10) Median (SD)	Understanding (N=10) Median (SD)	Total Test (N=10) Median (SD)
Pretest	8.5 (2.18)	6 (2.18)	8 (2.44)	5.5 (3.78)	7.5 (3.60)	38 (11.67)
Posttest	10 (1.97)	9.5* (2.78)	11.5* (1.89)	11* (3.68)	10* (2.40)	49* (9.13)

\*Indicates a statistically significant difference ( $p < 0.05$ ) between pretest and posttest scores.

### Research Question 3

*What were the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities who were being instructed with the READ 180 Program?*

The third research question was developed to see if there were differences in reading comprehension pretest and posttest scores of the ten secondary students with learning disabilities

who were being instructed with the READ 180 Program. The Gates MacGinitie Reading Comprehension Test raw scores are on the pretest and posttest Extended Scale Scores (ESS). Once again, the assumptions with the number of subjects were not met, so the Wilcoxon signed-rank non-parametric test on the mean differences was conducted on the ESS on the pretest and posttest scores of the Gates MacGinitie Reading Comprehension Test. The mean scores of the pretest scores was 3.68 with a standard deviation of 1.60 and the mean scores of the posttest was 4.75 with a standard deviation of .84.

There were no statistically significant differences between pretest and posttest scores in reading comprehension (ESS) when using the Wilcoxon signed-rank non-parametric test to compare the mean differences.

### Summary of Results

The purpose of this study was to examine the impact of the READ 180 Program on reading comprehension, decoding (oral reading fluency), and linguistic comprehension amongst the test population of secondary students with learning disabilities when implemented with fidelity through a special education pullout model. The first research question aimed to explore the changes in the oral reading fluency scores of secondary students with learning disabilities as measured by easyCBM who were being instructed with the READ 180 Program. The students scores were based on the total number of words read correctly (TWRC) in one minute on an eighth grade reading probe. Two of the students scored in the 60 to 89 TWRC, six students scored in the 90-118 TWRC, and two students scored in the 119-147 TWRC (*Figures 2 through 11.*). Additionally, on average, the miscues on the oral reading fluency probes for the fourteen-week period using easyCBM showed a decrease (*Figure 12.*).

The second question looked at the differences in the linguistic comprehension scores of secondary students with learning disabilities as measured by the pre-test and posttest of The Listening Comprehension Test Adolescent while being instructed with the READ 180 Program. An SIQR was calculated and the median scores were computed. Once again the assumptions for the sample size were not met. The Wilcoxon signed-rank non-parametric test was used to compare the median differences (main ideas, details, reasoning, vocabulary, understanding, and total test). It was determined that there was a statistically significant difference between the pretest and posttest scores for the students' total test scores and on 4 of the 5 subtest scores (details, reasoning, vocabulary, understanding) after the fourteen week treatment period (Table 2).

The final question was developed to see if there were differences in reading comprehension pretest and posttest scores on the Gates MacGinitie Reading Comprehension Test of the ten secondary students with learning disabilities who were being instructed with the READ 180 Program. The Wilcoxon signed-rank non-parametric test was used to compare the median differences of the ESS. It was determined that there was no statistically significant difference in the students scores between the pretest scores and the posttest scores on the Gates MacGinitie Reading Comprehension Test based on the mean scores and standard deviations.

### Research Question 3

*What were the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities who were being instructed with the READ 180 Program?*

The third research question was developed to see if there were differences in reading comprehension pretest and posttest scores of the ten secondary students with learning disabilities

who were being instructed with the READ 180 Program. The Gates MacGinitie Reading Comprehension Test raw scores are on the pretest and posttest Extended Scale Scores (ESS). Once again, the assumptions with the number of subjects were not met, so the Wilcoxon signed-rank non-parametric test on the mean differences was conducted on the ESS on the pretest and posttest scores of the Gates MacGinitie Reading Comprehension Test. The mean scores of the pretest scores was 3.68 with a standard deviation of 1.60 and the mean scores of the posttest was 4.75 with a standard deviation of .84.

There were no statistically significant differences between pretest and posttest scores in reading comprehension (ESS) when using the Wilcoxon signed-rank non-parametric test to compare the mean differences.



## CHAPTER V

### CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to examine the impact that the READ 180 Program had on reading comprehension, decoding (oral reading fluency), and linguistic comprehension amongst the test population of secondary students with learning disabilities when implemented through a special education pullout model. This study had ten secondary students with learning disabilities who were being served in a special education pullout model and were instructed with the READ 180 Program with fidelity for 90 minutes per day for four days per week. The students completed pretests to assess both their reading comprehension (The Gates MacGinitie Reading Comprehension Test), and their linguistic comprehension (The Listening Comprehension Test Adolescent).

Following fourteen weeks of instruction with the READ 180 Program, the students completed identical posttests that assessed their reading comprehension (The Gates-MacGinitie Reading Comprehension Test), and their linguistic comprehension (The Listening Comprehension Test Adolescent). Additionally, the students were given a weekly progress monitoring measure for fourteen consecutive weeks that monitored their oral reading fluency (Curriculum Based Measurement Oral Reading Fluency Probes, easy CBM). It was expected that the students' oral reading fluency scores, linguistic comprehension, and reading comprehension scores would increase from their pretest levels. Overall, the standard deviation and median scores were statistically significantly higher for the students' listening comprehension posttest scores. Additionally, the number of miscues the students made during the fourteen-week oral reading fluency progress monitoring

phase showed a statistically significant decrease. Finally, the oral reading fluency scores in total words read correctly showed an increase over the fourteen-week progress-monitoring period.

### Summary of the Study

This study was designed to look at differences in decoding (oral reading fluency), listening comprehension, and reading comprehension of secondary students with learning disabilities who were being served in a pullout special education program. The literacy curriculum was the Read 180 Program that was implemented with fidelity (90 minutes per instructional setting, four days per week, for fourteen weeks). The study began in February of 2013. It included ten ninth-grade resource students with learning disabilities who were given permission by their parents to participate in the study. The study was concluded in May of 2013. All of the ninth grade resource students with learning disabilities were able to complete the study.

### Discussion of Research Questions

The first research question was, “ what were the changes in the oral reading fluency scores, as measured by easyCBM, of secondary students with learning disabilities who were being instructed with the READ 180 Program?”

The results of this research study showed that there was an effect on the student’s oral reading fluency scores that were measured by easy CBM. The students on average increased their total words read correctly. The students’ showed a statistically significant decrease in their miscues. The conclusion that can be drawn from the research question is that the READ 180 Program had an effect on the secondary students’ with learning disabilities oral reading fluency scores and a decrease in their miscues.

The results of this study validate that the READ 180 Program might be a valuable reading treatment for secondary students with learning disabilities because there was an effect on the student's oral reading fluency in total words read, and a decrease in miscues. Additionally, this study shows that oral reading fluency might be a predictor of reading competence, reading development, and used as a progress-monitoring tool (Baumann, 2009; Hasbrouck & Tindal, 2006).

The results from this research study may help fill the gap in the literature about secondary students with learning disabilities and effective reading interventions like the READ 180 Program. Wayman et al. (2007) found that oral reading fluency measures have an effect on reading proficiency such as oral reading fluency, and much more research is needed at the secondary level due to the fact that much of the research has been focused on primary level students. This study has attempted to address this need at the secondary level studying students with learning disabilities oral reading fluency measures (total words read correctly and the number of miscues). Once again, this study validates that there was an effect on secondary students with learning disabilities oral reading fluency performance and decrease in miscues while using the READ 180 Program.

While it is not clear what may have led to the increase in students ORF and decrease in miscues, it is possible that the READ 180 Program's auditory component (computer aided instruction and books on CD-ROM) may have had an impact. The READ 180 Program models good reading auditorally for the students and this modeling may have helped to increase the students ORF and decrease their miscues.

Repeated reading practice may also have had an impact on the students ORF and decrease in miscues. The students interacted with the READ 180 Program 90 minutes four days a week. The amount of reading time may have been one of the reasons that the ORF increased and the miscues decreased.

Additionally, the READ 180 Program's multimodality format may have impacted an increase in ORF and decrease in their miscues (direct instruction, computer aided instruction, books on CD-ROM, and whole class wrap up). The READ 180 Program appeals to multiple learning styles (auditory, visual, kinesthetic, and/or a combination). Due to the interactive nature of the READ 180 Program, the multimodality approach may have had an impact on increased ORF and decreased miscues.

The second research question was, "what were the differences in the linguistic comprehension scores, as measured by The Listening Comprehension Test Adolescent, of secondary students with learning disabilities who were being instructed with the READ 180 Program?"

The results of this research study demonstrate that there was a statistically significant effect on the students' listening comprehension on the pretest and posttest scores while being taught with the READ 180 Program. This finding is of particular interest because most of the research on listening comprehension has been conducted with non-English Language Learners and not with students with learning disabilities. However, the results from this research study did not show that listening comprehension scores have an effect on the students' reading comprehension scores.

This study investigated listening comprehension as a related skill that influences secondary students with learning disabilities reading comprehension. Although there was a statistically significant effect on listening comprehension skills, there was not an effect on reading comprehension as proposed in the Simple View of Reading theory (Gough & Tunmer, 1986). There is a contradiction in the findings of this study and studies done by Johnson and Kirby (2006), Braze, Tabor, Shankweiler, and Mencl (2007), Georgiou, Das, and Hayward (2009), and Marcuso and Shanweiler (2010). Those studies mentioned above saw a direct correlation between increased listening comprehension and increased reading comprehension.

This study helps to fill in the gap in the literature on listening comprehension, and the effect of the READ 180 Program on secondary students with learning disabilities. The majority of current literature on listening comprehension focuses on students who are English Language Learners (Jafari & Hashim, 2012; Amin, Amin & Aly, 2011; Cheung, 2010) and the direct relationship between listening comprehension and reading comprehension. This study focuses on secondary students with learning disabilities and showed an effect with listening comprehension while implementing the READ 180 Program.

This study validates that the READ 180 Program is an effective reading intervention, and showed an effect on oral reading fluency and listening comprehension. There is a broad base of research that has been conducted with and without READ 180 publisher support, and some of these studies included students with learning disabilities at the secondary level. Improvements in oral reading fluency skills have been validated as an outcome of the READ 180 Program (Kim, Capotosto, Hartry, & Fitzgerald, 2011; Kim, Samson, Fitzgerald, & Hatry, 2009). There is no current research that looks at listening comprehension and the READ 180 Program. The area of listening comprehension and the READ 180 Program might be an area of needed future research.

Once again, it may have been the multimodality nature of the READ 180 Program that had an impact on listening comprehension. The computer aided instruction component incorporates all three modalities (auditory, visual, and kinesthetic) while the student is working through the program. The program models reading and causes the students to attend to the program while the student is interacting with the READ 180 Program. The auditory component enhances the students listening comprehension and strengthens this academic skill. While no direct evidence was collected to assess the impact of the multimodality nature of the READ 180 on the students' listening comprehension, it is possible that the auditory component in addition to the visual and kinesthetic components of the READ 180 program had a direct impact on the students listening comprehension skill increase on the posttests.

The third research question was, "what were the differences in the reading comprehension scores, as measured by The Gates MacGinitie Reading Comprehension Test, of secondary students with learning disabilities who were being instructed with the READ 180 Program?"

The results of this research study showed no change in reading comprehension pre and posttest scores. This research study was conducted over fourteen weeks and it was predicted that effects in oral reading fluency and listening comprehension would have produced a positive effect in the secondary students' with learning disabilities reading comprehension scores, which is one of the goals of the READ 180 Program. It might be hypothesized that the treatment phase of this study was not long enough to see an effect in reading comprehension. A replication of this study with a longer duration might show an effect on secondary students' with learning disabilities pre and posttest scores when measured by the Gates MacGinitie Reading Comprehension Test.

The conclusion that can be drawn from the results of this study is that there was no effect on secondary students' with learning disabilities reading comprehension even though there was an effect on their oral reading fluency measures (total words read correctly and miscues). Researchers have asserted that oral reading fluency measures can be used as a predictor of reading comprehension (Yovanoff, Duesbery, Alonzo, & Tindal, 2005; Rasinski, Padak, McKeon, Wilfong, Friedauer, & Heim, 2005) however this was not the finding of this study.

This study reveals that there is a contradiction in the current literature and the findings of this study. In the studies done by Johnson and Kirby (2006), Braze, Tabor, Shankweiler, and Mencl (2007), Georgiou, Das, and Hayward (2009), and Marcuso and Shanweiler (2010), when there was an effect in listening comprehension there was an effect on the students' reading comprehension. This study did not see those effects in reading comprehension.

The lack of effect on reading comprehension in this study suggests that this study needs to be replicated because fourteen weeks was not long enough to realize any change in the students reading comprehension posttest scores. The READ 180 Program was developed to increase reading comprehension of students who read below the 25<sup>th</sup> percentile. This study did not realize any change in students reading comprehension posttest, which makes one want to reconsider the effectiveness of the READ 180 Program.

Unfortunately, this researcher would have a difficult time validating the effectiveness of the READ 180 Program based on increased reading comprehension skills to his school district for several reasons. First of all, this school district has invested in a block schedule to teach the READ 180 Program with fidelity. There is one special education teacher, one instructional assistant, and a small computer lab used for four hours a day four days per week dedicated to the

READ 180 Program. Because the READ 180 Program was purchased by the district to impact students below the 25<sup>th</sup> percentile reading comprehension scores, this study would have a hard time validating this investment made by the school district in enhancing ninth grade students with learning disabilities reading comprehension scores.

### Conclusions

The results of this study showed statistically significant results for oral reading fluency, specifically in the average number of miscues during the progress monitoring with easy CBM. Additionally, most of the students increased in their oral reading fluency scores over the fourteen-week period. In addition, this study showed statistically significant increases in students' listening comprehension scores over the fourteen-week testing period. Thus, there is some evidence that the READ 180 Program can positively impact students' oral reading fluency and listening comprehension skills, based on the progress monitoring, pretest, and posttest scores.

Unfortunately, there were no significant changes in reading comprehension based on the pretest and posttest scores of the Gates MGinitie Reading Comprehension Test. These standardized test scores showed no change from the pretest to the posttest, which might imply that the READ 180 Program did not enhance reading comprehension skills in the students' who participated in this study.

This researcher learned a lot while conducting this study. First, fourteen weeks might have been too short of a time to conduct this study. The researchers expectation upon starting this study was that he would see an increase in ORF, a decrease in miscues, an increase in the posttest scores with the listening comprehension measure, and an increase in the students reading



comprehension posttest scores. The researcher was surprised that there was not an increase in the reading comprehension posttest scores that there was no way to conceptualize this except to wonder if the study was done over one school year if an increase in the posttest reading comprehension scores would have been realized.

This researcher expected to see an increase in all of the progress monitoring (ORF and miscues) and posttest measures. To have significant and statistically significant outcomes validated that the investment by the school district was worth the time/staff commitment and expense of the program to implement. Often times in education, school districts spend money, use staff resources, and facilities to implement programs that are not effective in increasing academic skills with their students. This researcher can say with confidence that the READ 180 Program increased ORF, decreased miscues, and increased the posttest of the students listening comprehension skills. These findings validate that the READ 180 Program is valuable evidence based reading program that enhances reading skills for students at or below the 25<sup>th</sup> percentile.

This study is important for several reasons. First, the READ 180 Program has an effect on the increase in ORF, decrease in miscues, and an increase in the posttest scores of listening comprehension. The READ 180 Program has been validated by this researcher as an effective evidence based reading program that other school districts might consider purchasing for their students who are struggling to increase their reading skills. Secondly, the implementation of the READ 180 Program with fidelity is being modeled by the researchers school district and validates in a fourteen week study that the READ 180 Program can have an impact on ninth grade students with learning disabilities increased ORF, decreased miscues, and increased posttest scores in listening comprehension. Thirdly, with the implementation of common core, the READ 180 Program tailors the learning to the student who works their way through the

program as a group and as an individual. The READ 180 Program incorporates from direct instruction to independent practice. The READ 180 Program embodies the whole emphasis of the common core.

### Limitations

This study was a convenience sample size of ten. This study was limited from the onset by the number of secondary special education students with learning disabilities who were being instructed by the same teacher with fidelity using the READ 180 curriculum. There are limitations based on this small sample size that include limited statistical power, the inability to meet the Central Limit Theorem, and having limited ability to generalize the findings of this study.

Additionally, the test population was not a random sample, but a convenience sample. The convenience sample consisted of fifteen ninth grade students' with learning disabilities who were being instructed in a special education pullout model using the READ 180 Program. Ten students consented to participate in the study and five did not. The researcher began the study with ten students and ended the study with ten students.

There are several difficulties with the generalizability of this data. The sample was not random. The sample size was small at ten. As has been stated above, this study has limited statistical power, it does not meet the Central Limit Theorem, and therefore the generalizability of this data is limited due to the size of the test population.

The standardized tests were limited to specific testing criteria. The easy CBM looked at oral reading fluency (the total number of words read in one minute minus the students miscues) and miscues on an eight grade reading passage. The Listening Comprehension Adolescent was a

standardized pretest and post-test given individually to the student by the researcher that measured listening comprehension skills of each student. The Gates MacGinitie Reading Comprehension Test was a standardized pretest and posttest given in a group setting that measured the reading comprehension skills of the student. The data that was collected and analyzed in this study is specific to the three tests that were used in this study (easy CBM, the Listening Comprehension Test Adolescent, and the Gates MacGinitie Reading Comprehension Test).

This study was specific to the population of secondary students with learning disabilities who were being served in a resource special education pullout model. This factor is significant because of the limited number of studies that have been done with this specific test population (ninth grade resource students with learning disabilities that are being served in a special education pullout model). Additionally, this test population was being taught the READ 180 Program with fidelity (90 minutes per day for four days per week), and they are a very unique convenience sample.

### Implications

Due to the small sample, the results must be interpreted with caution. The data collected with this test population showed a statistically significant decrease in oral reading fluency miscues. The test population showed an increase in oral reading fluency. The test population showed a statistically significant increase in pre and posttest scores on listening comprehension. There was no change in reading comprehension pretest and posttest scores.

This researcher thought about several main ideas as he was conducting this research. First, the sample size is too small to generalize these findings to a whole school population. If

this study were replicated with multiple ninth grade classrooms (n higher than 30) with students with learning disabilities the results would be generalizable. The researcher would have to have the READ 180 Program taught with fidelity (90 minutes four days a week) and he would have to conduct the pretests and posttest, and conduct the progress monitoring easyCBM data collection by him. This would increase the number of subjects, he could have run parametric tests, and the results would have been generalizable.

Secondly, the study needs to be replicated for an entire school year with an n of thirty or more 9<sup>th</sup> grade students with learning disabilities. This researcher did not realize any increase in the student's posttest reading comprehension scores. If the study were replicated during an entire school year and there was no change in the posttest reading comprehension test scores, he might conclude that the READ 180 Program did not have any effect on reading comprehension. Additionally, the Gates MacGinitie Reading Comprehension Test Form Nine might have been used instead of the Form Ten-Tweleve during the beginning of the school year pretest unlike the current study (spring pretest administration).

This study has several implications for special education. First, realizing an increase in ORF and decrease in miscues is a very important finding. Students with learning disabilities that read below grade level need any skill development when it comes to reading. If ORF increases and miscues decrease, student with learning disabilities are making progress on their Individualized Education Plan (IEP) reading goals. Additionally, if their listening comprehension skills are increasing at the same time, this researcher believes that reading comprehension skills might increase as the other skills increase. The essence of IDEA is the implementation of evidence/scientifically based reading programs to improve reading skill. The

READ 180 Program increases two of the three skills that effect reading comprehension (ORF/miscues, and listening comprehension).

This study has implications for general education students as well. Students who are not learning disabled yet read below the 25<sup>th</sup> percentile might see the same skill development as the ninth grade students with learning disabilities realized (ORF/miscues, and listening comprehension). These two skills are vital in improving students reading comprehension skills and have implication for students who do not have learning disabilities.

The data analysis of this study reveals two important reading skills increases that might affect special and general education students who are reading below the 25<sup>th</sup> percentile. The increase in ORF and decrease in miscues with the easyCBM progress monitoring system is easy for all educators to see and interpret. The easyCBM program is easy to implement in general and special education, and it is easy to administer on a weekly basis. The listening comprehension test is time consuming to give individually to each student in a class, but it gives detailed data in specific areas of listening and understanding. These data matter because they give educators a glimpse into the learning of reading for secondary students who read below the 25<sup>th</sup> percentile.

The READ 180 Program could be introduced in pre-service general education and special education programs. The READ 180 Program is an evidence/scientifically based reading program that is a well-researched reading comprehension program. It is used all over the United States and its popularity is growing. It would be an appropriate pre-service reading comprehension program for student teachers to have exposure to.

The take aways from this study are two fold. First, the READ 180 Program when taught with fidelity appears to have an impact on increasing ORF and decreasing miscues. Secondly,

the READ 180 Program when taught with fidelity appears to increase posttest listening comprehension scores with secondary students with learning disabilities being served in a special education pull out model. The READ 180 Program might be a valuable investment for school districts to make in order to increase reading comprehension skills of students who read below the 25<sup>th</sup> percentile.

### Research Implications

This study should be replicated on a larger scale with a random sample size of thirty or more secondary students with learning disabilities who are being taught with the READ 180 Program (with fidelity) in a pullout special education setting. This increased number of randomly selected subjects would increase the generalizability of the results. The same tests should be used again (easy CBM, Test of Adolescent Listening Comprehension, and the Gates MacGinitie Reading Comprehension Test) with the larger randomly selected sample size to compare the outcomes of this current study with the outcome of the larger study. This data would be highly sought after because of the independent nature of the research because this study was not sponsored in any way by Scholastic who is the publisher of the READ 180 Program.

### Educational Implications

Based on the results of this study, the READ 180 Program taught with fidelity to secondary students in a resource special education pullout model showed an increase in oral reading fluency, and a decrease in miscues. Additionally, the students' listening comprehension on the pretest and posttest measures showed a statistically significant increase. The pretest and posttest scores on The Gates MacGinitie Reading Comprehension Test showed no change.

The education implications of this study are that when taking into consideration the theoretic rationale of the Simple View of Reading (Gough & Tunmer, 1986), in fourteen weeks, measures of two of the constructs (decoding, ORF) and listening comprehension) showed improvement. There was no change in the third construct (reading comprehension) as measured by pretest and posttest scores on the Gates MacGinite Reading Comprehension Test. The Educational implications are that The READ 180 Program taught with fidelity (90 minutes four times per week) might have an impact on a students oral reading fluency, miscues, and listening comprehension. The READ 180 Program is designed to be used as a multi year scientific based reading program. This study validates that there was an effect on oral reading fluency and listening comprehension that according the Simple View of Reading (Gough & Tunmer, 1986) has an effect on reading comprehension. This study showed effects in oral reading fluency and listening comprehension that are essential skills for reading comprehension. School districts may want to take a hard look at the READ 180 Program as an intervention for at risk readers at the elementary and secondary level, students with learning disabilities in special education, students who are English language learners, and students in general education.

### Summary

The purpose of this study was to look at the differences in decoding (ORF), listening comprehension, and reading comprehension with secondary students with learning disabilities being served in a pullout special education model and being taught with the READ 180 Program with fidelity. The three constructs (decoding, listening comprehension, and reading comprehension) aligned with the theoretical rationale of the Simple View of Reading (Gough & Tunmer, 1986).

The results of the current study demonstrate that two of the three constructs (decoding, and listening comprehension) increased when the READ 180 Program was taught with fidelity (90 minutes per day, four days per week). On average, the students' oral reading fluency increased while their miscues decreased, and their listening comprehension increased.

There is research and educational implications that can be recommended based on the results of the current study. One of the research implications is that this study should be replicated with a larger randomly selected group of secondary subjects with learning disabilities that are being served through a special education pullout model. Additionally, the current tests should be used again (easy CBM, The Listening Comprehension Adolescent, and The Gates MacGinite Reading Comprehension Test) with a longer testing period (greater than fourteen weeks) to see if there is a change on all three of the constructs (decoding, listening comprehension, and reading comprehension).

In regards to the educational implications, the most significant implications are that the READ 180 Program when taught with fidelity to secondary students with learning disabilities in a resource special education pullout model might have some positive affects as seen through the Simple View of Reading theory (Gough & Tunner, 1986). The READ 180 Program might enhance oral reading fluency skills such as reading speed and decrease the amount of miscues a student might make. Additionally, the READ 180 Program might improve listening comprehension skills that along with oral reading fluency skills may have an impact in a students' reading comprehension.

Finally, the READ 180 Program addresses the development of literacy skills in reading for secondary students with learning disabilities who are being served in a special education



pullout model. Additionally, the READ 180 Program meets the policy and law factors because the READ 180 Program is evidence based practice that is a scientific based reading program. As this study has shown, the READ 180 Program develops reading strategies that have an effect on increasing oral reading fluency, decreasing oral reading fluency miscues, and show an increase in listening comprehension.

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Appendix A  
Permission Letter

November 26, 2012  
Institutional Review Board for the Protection of Human Subjects  
University of San Francisco  
2130 Fulton Street  
San Francisco, CA 94117

Dear Members of the Committee:

On behalf of Chico Senior High School, I am writing to formally indicate our awareness of the research proposed by Mr. David L. Teja, a Doctoral Student at University of San Francisco. We are aware that Mr. Teja intends to conduct his research by administering three total assessments of our students. The assessments will be administered to a group of ninth and tenth-grade students.

I am responsible for all students at Chico Senior High School and I am the Principal of the institution. I give Mr. Teja permission to conduct his research at our academic institution.

If you have any questions or concerns, please feel free to contact my office at (530) 891-3026.

Sincerely,

Jim Hanlon

Principal, Chico Senior High School

Appendix B  
Informed Consent

**INFORMED CONSENT FORM**  
UNIVERSITY OF SAN FRANCISCO  
CONSENT TO BE A RESEARCH SUBJECT

**Purpose and Background**

David L. Teja, a doctoral student, in the School of Education at the University of San Francisco is doing a study on The READ 180 Program with ninth and tenth grade special education students in their English classes. The reading comprehension education literature indicates that the use of a mixed methods program like The READ 180 Program may help increase secondary students reading comprehension.

**Procedures**

If I agree to be a participant in this study, the following will happen:

1. I will complete a three pretests; one minute oral reading fluency test conducted one-on-one, a multiple choice listening comprehension pretest conducted in a group, and an individual multiple choice pretest administered in a group setting.
2. I will participate in a three month instruction phase of The READ 180 Program or a modified core English Language Arts curriculum.
3. I will complete a three posttests; one minute oral reading fluency test conducted one-on-one, a multiple choice listening comprehension pretest conducted in a group, and an individual multiple choice pretest administered in a group setting.

**Risks and/or Discomforts**

1. It is possible that some of the questions on the pretest and posttest will appear beyond my abilities in the subject of science and could impact my perceived sense of confidence and self-worth in the class. I am free to decline to answer any questions I do not wish to answer or to stop participation at any time.
2. Participation in research may mean a loss of confidentiality. Student records will be kept confidential. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only study personnel will have access to the files.

**Benefits**

The anticipated benefit of this study is that the students will learn a new curriculum that may help them learn increase their reading comprehension.

### **Costs/Financial Considerations**

There will be no financial costs to me as a result of taking part in this study.

### **Questions**

I have talked to Mr. Teja about this study and have had my questions answered. If I have further questions about the study, I may call him at (530) 891-3026. If I have any more questions or comments about participation in this study, I should first talk with the researcher, Mr. Teja. If for some reason I do not wish to do this, I may contact the IRBPHS, which is concerned with protection of volunteers in research projects. I may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing [IRBPHS@usfca.edu](mailto:IRBPHS@usfca.edu), or by writing to the IRBPHS, Department of Psychology, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1081.

### **Consent**

I have been given a copy of the “Research Subject’s Bill of Rights” and I have been given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to be in this study, or to withdraw from it at any point. My decision as to whether or not to participate in this study will have no influence on my present or future status as a student at Chico Senior High School.

My signature below indicates that I agree to participate in this study.

---

Subject’s Signature

Date of Signature

---

Signature of Person Obtaining Consent

Date of Signature



Appendix C  
Cover Letter

Dear Ninth Grade Students:

In addition to being a special education teacher at Chico Senior High School, I am also a doctoral student in the School of Education at the University of San Francisco. I am doing a study on The READ 180 Program. I am interested in learning how The READ 180 Program effects a students' reading comprehension. The principal of Chico Senior High School has given me permission to conduct this study.

You are being asked to participate in this research study because your presence in the ninth and tenth grade resource classes. If you agree to participate in this study, you will complete three pretests. You will then receive three months of READ 180 instruction or modified core instruction. After the instruction, you will complete three posttests.

It is possible that some of the questions on the pretest or posttests will appear beyond your abilities in the subject of science and could impact your perceived sense of confidence and self-worth in the class. You are free to decline to answer any questions you do not wish to answer or to stop participation at any time. Participation in research may mean a loss of confidentiality. Student records will be kept as confidential as possible. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only the lead researcher (myself) will have access to the files. Individual results will not be shared with any other students, faculty or staff at Chico Senior High School.

While there are no direct benefits to you participating in this study, the anticipated benefit of this study is that you will gain a better understanding of how The READ 180 Program might increase your reading comprehension. There will be no costs to you as a result of taking part in this study.

If you have questions about the research, you may contact me at (530) 891-3026. If you have further questions about the study, you may contact the IRBPHS at the University of San Francisco, which is concerned with protection of volunteers in research projects. You may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing [IRBPHS@usfca.edu](mailto:IRBPHS@usfca.edu), or by writing to the IRBPHS, Department of Psychology, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

**PARTICIPATION IN RESEARCH IS VOLUNTARY.** You are free to decline to be in this study, or to withdraw from it at any point. Elmhurst Community Prep is aware of this study but does not require that you participate in this research and your decision as to whether or not to participate will have no influence on your present or future status as a student at Chico Senior High School.

Thank you for your attention. If you agree to participate, please complete the attached consent form, ask a parent or guardian to complete the attached consent form, and return the form to me in the envelope provided.

Sincerely,

David L. Teja

Learning and Instruction Doctoral Student

University of San Francisco

## Appendix D

easy CBM Oral Reading Fluency Student Copy and Assessor Copy Samples in Eighth Grade

**Student Copy****Form 8-1**

Tricia had woken in a frenzy of excitement, but her day had since become more and more depressing with each passing moment. She had walked into the kitchen for breakfast, fully expecting cries of, "Happy Birthday!" from her parents and sister, but was instead greeted by nothing but silence. Tricia was so shocked by this lack of birthday wishes that she failed to even ask why her family sat mutely, as though today were a day like any other. She started to feel really sorry for herself and wasn't sure what she should do about it.

At school, this disturbing pattern continued throughout the day. Tricia thought that her best friend, Jimmy, would remember her special day. However, Jimmy, like her family, failed to offer any indication that he was aware of Tricia's birthday. Again, Tricia was too sad and embarrassed to point out to Jimmy that it was her birthday. By the time school let out and not a single person had wished her a happy birthday, Tricia herself was beginning to feel like it was just an average day. She even began to second-guess herself, and wondered if she had somehow mixed up the date her birthday fell on.

Tricia walked home from school with Jimmy like usual, but not much conversation passed between them. Tricia kept quiet, knowing that she was going to miss out on birthday events like cake and presents. Jimmy seemed strangely oblivious to Tricia's mood and rambled on about the weather and homework. Strangely, Jimmy walked Tricia all the way to her door instead of parting ways with her at the corner like he usually did. Tricia unlocked her door and was surprised to see that the living room was completely dark. Suddenly, the lights flashed on, and Tricia was greeted with a loud, "Surprise!"

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Place the Student Copy in front of the student. Point to the names on the Student Copy as you read them:  
**"This is a story about Tricia and Jimmy. I want you to read this story to me. You'll have 1 minute to read as much as you can. When I say "begin," start reading aloud at the top of the page. Do your best reading. If you have trouble with a word, I'll tell it to you. Do you have any questions? Begin."**
2. Start the timer.
3. While the student is reading, mark errors with a slash (/).
4. At 1 minute, mark the last word read with a bracket (]).
5. When the student gets to a logical stopping place, say "Stop."

<p><u>Tricia</u> had woken in a frenzy of excitement, but her day had since become more and more depressing with each passing moment. She had walked into the kitchen for breakfast, fully expecting cries of, "Happy Birthday!" from her parents and sister, but was instead greeted by nothing but silence. Tricia was so shocked by this lack of birthday wishes that she failed to even ask why her family sat mutely, as though today were a day like any other. She started to feel really sorry for herself and wasn't sure what she should do about it.</p> <p>At school, this disturbing pattern continued throughout the day. Tricia thought that her best friend, <u>Jimmy</u>, would remember her special day. However, Jimmy, like her family, failed to offer any indication that he was aware of Tricia's birthday. Again, Tricia was too sad and embarrassed to point out to Jimmy that it was her birthday. By the time school let out and not a single person had wished her a happy birthday, Tricia herself was beginning to feel like it was just an average day. She even began to second-guess herself, and wondered if she had somehow mixed up the date her birthday fell on.</p> <p>Tricia walked home from school with Jimmy like usual, but not much conversation passed between them. Tricia kept quiet, knowing that she was going to miss out on birthday events like cake and presents. Jimmy seemed strangely oblivious to Tricia's mood and rambled on about the weather and homework. Strangely, Jimmy walked Tricia all the way to her door instead of parting ways with her at the corner like he usually did. Tricia unlocked her door and was surprised to see that the living room was completely dark. Suddenly, the lights flashed on, and Tricia was greeted with a loud, "Surprise!"</p>	<p>14 27 38 52 68 84 96 106 118 133 148 165 180 193 201 213 225 238 250 264 279 292 302</p>
--	---

Total Words Read: \_\_\_\_\_ - # of Errors: \_\_\_\_\_ = CWPM \_\_\_\_\_

Appendix E

The Listening Comprehension Test Adolescent

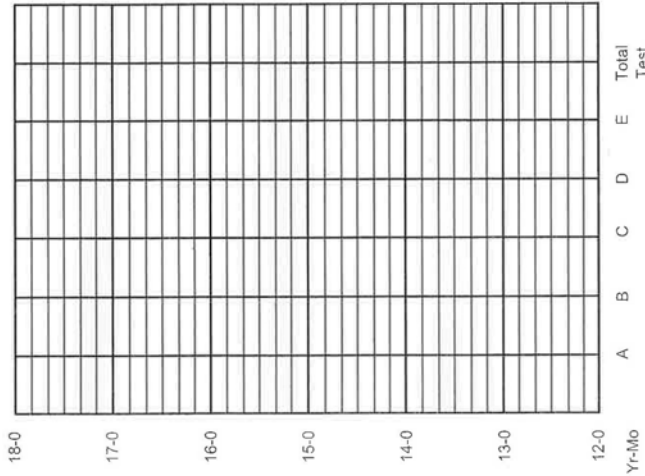
# The Listening Comprehension Test Adolescent™

Linda Bowers  
Rosemary Huisling  
Carolyn LoGiudice

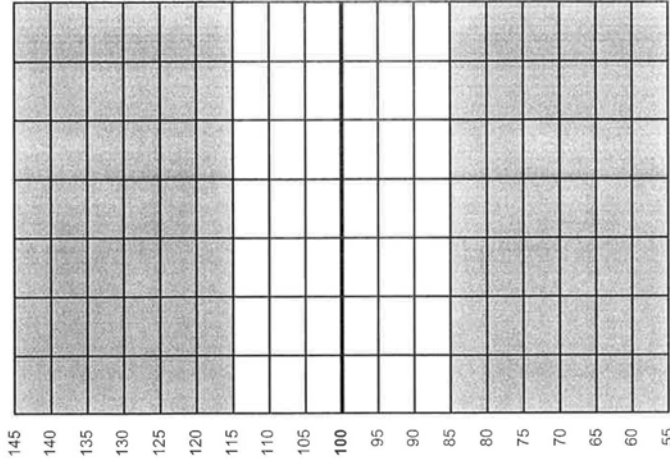
Name \_\_\_\_\_  
 School \_\_\_\_\_  
 Grade \_\_\_\_\_  
 Examiner \_\_\_\_\_  
 Administration Date \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_  
 Birthdate \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_  
 Chronological Age \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

	A	B	C	D	E	A-E
	Main Idea	Details	Reasoning	Vocabulary and Semantics	Understanding Messages	Total Test
Raw Score	_____	_____	_____	_____	_____	_____
Age Equivalent	_____	_____	_____	_____	_____	_____
Percentile Rank	_____	_____	_____	_____	_____	_____
Standard Score	_____	_____	_____	_____	_____	_____

Age Equivalency Profile



Standard Score Profile



Mean Standard Score = 100      Standard Deviation = 15



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 Printed in the U.S.A.  
 ISBN 978-0-7606-0833-3

LinguSystems, Inc.  
 3100 4th Avenue  
 East Moline, IL 61244  
 800-776-4332

FAX: 800-577-4555  
 Email: service@linguistics.com  
 Web: linguistics.com



Directions: Listen carefully to these stories. Then I'll ask you some questions about them.

STORY Allowable prompt: <i>What else can you tell me?</i>	A. Main Idea <i>Acceptable responses</i>	B. Details <i>Acceptable responses</i>	C. Reasoning <i>Acceptable responses</i>	D. Vocabulary and Semantics <i>Acceptable responses</i>
<p>Listen to this story about a woman's interesting life.</p> <p>Dian Fossey was a scientist who lived with the primates in the mountains of Africa. She made the unlikely happen. She became the gorillas' dear friend by gaining their trust and studying their habits. Tragedy struck when poachers killed Dian's favorite gorilla.</p>	<p>1. What is the main idea of this story?</p> <p><i>any reference to a scientist who lived with/interacted with/befriended/gained the trust of/studied gorillas/primates/monkeys</i></p>	<p>2. What did Dian study about the gorillas?</p> <p><i>any reference to habits, behaviors, lifestyle, way of living, how they acted/interacted, what they did, what they ate</i></p>	<p>3. Why do you think Dian didn't mind living in the wilderness?</p> <p><i>any reference to doing it for science/research, being devoted to/passionate about her work, studying the gorillas, learning their habits, doing what she loved, enjoying the company of gorillas, wanting to live among them, liking gorillas</i></p>	<p>5. What is a synonym for <i>unlikely</i> in this sentence? She made the unlikely happen.</p> <p>(must be a one-word response) unbelievable, unexpected, unimaginable, unthinkable, improbable, impossible, incredible, inconceivable, doubtful</p>
<p>This next story is about a boy with a disability.</p> <p>The book <i>My Left Foot</i> is a gripping story about a boy born with severe cerebral palsy. He could not talk or move his limbs voluntarily, and until he was five, everyone but his family thought he was mentally challenged.</p> <p>One day the boy watched as his sister drew on a chalkboard with bright yellow chalk. He was so attracted to the chalk, he grabbed it with his left foot and wrote the letter A. He changed people's perceptions of a person with a disability by using his left foot to do everything other people do with their hands. He grew up to become an author and a painter.</p>	<p>7. What is the main idea of this story?</p> <p><i>any reference to getting over/overcoming challenges/barriers, adapting to a physical disability/handicap/cerebral palsy</i></p>	<p>8. What <b>two</b> things did he do as an adult?</p> <p><i>any reference to writer/author + painter/artist</i></p>	<p>9. Why did people think he was severely mentally challenged?</p> <p><i>any reference to not being able to speak, talk, write, communicate, walk, move/control limbs, having cerebral palsy, having a physical disability, being crippled</i></p>	<p>10. What does <i>voluntarily</i> mean in this sentence? He could not talk or move his limbs voluntarily.</p> <p>on purpose, on his own, by himself, on command, on cue, at will, willingly, by his own will or power, by choice, as he wanted/pleased, freely, consciously, deliberately, intentionally, without help</p>

SCORE/ SUBTEST	A	B	C	D	E
1		2	3	5	
4				6	
7		8	9	10	

Subtotals Page 1	A	B	C	D	E

STORY Allowable prompt: <i>What else can you tell me?</i>	A. Main Idea <i>Acceptable responses</i>	B. Details <i>Acceptable responses</i>	C. Reasoning <i>Acceptable responses</i>	D. Vocabulary and Semantics <i>Acceptable responses</i>	SCORE/ SUBTEST				
					A	B	C	D	E
<p>Listen to this story about a ship accident at sea.</p> <p>There have been numerous movies and documentaries made about the sinking of the <i>Titanic</i>. One personal account came from a passenger who was one of the last to leave the ship. He stayed behind because there were far fewer spots for people on the life boats than there were passengers and crew. How could that have happened?</p> <p>The answer lies in the ship's designer and builders. Everyone involved in building the <i>Titanic</i> thought it was the world's safest and most unsinkable ship! This kind of arrogant pride led to one of the worst tragedies in history.</p>	<p>11. What is the main idea of this story?</p> <p><i>any reference to the Titanic, arrogance/pride/overconfidence of builders/designer, not being prepared</i></p>	<p>12. How many life boats did the <i>Titanic</i> have?</p> <p><i>any reference to fewer than the number needed, not enough for everyone</i></p>	<p>14. Why weren't there enough spaces in the lifeboats for all of the passengers and crew?</p> <p><i>any reference to not expecting the ship to sink, thinking it was safe, builders/designer not thinking it was necessary</i></p>	<p>15. What is a <i>documentary</i>?</p> <p>a movie/film/program/video/DVD/show about what really happened, history, facts, nonfiction, realistic drama, a true/real life story, firsthand account, an event that's been recorded</p>	11	12	14	15	
	<p>13. What did the builders and designer think about the <i>Titanic</i>?</p> <p><i>any reference to safe, unsinkable, indestructible, invincible</i></p>	<p>16. What does <i>account</i> mean in this sentence? One personal account came from a passenger.</p> <p>story, tale, narrative, statement, testimony, description, report, version, explanation, knowledge, perception, perspective, thoughts, view/point of view, rendition, opinion, observation, memory, recollection, side of story</p>	<p>17. What is a synonym for <i>arrogant</i> in this sentence? This kind of arrogant pride led to one of the worst tragedies in history.</p> <p>(must be a one-word response) conceited, big-headed, overconfident, self-important, self-absorbed, egotistical, smug, self-centered, haughty, boastful, cocky/cockiness, pompous, pretentious, vain, narcissistic, superior</p>	<p>13</p>	16	17			
<p>Listen to this story about another woman's interesting life.</p> <p>What do you call a woman who put her life in harm's way to save thousands of children in India from starvation and disease? What do you call a woman who left the safety of the convent to make a home in the slums on a tiny, empty lot with a bedroll and a bar of soap? What do you call a woman who devoted her life to people in the filthy slums of India? We call her Mother Teresa.</p>	<p>18. What is the main idea of this story?</p> <p><i>any reference to sacrificing/giving up/ devoting/dedicating life to helping people (needs to have element of longevity; helping across lifetime)</i></p>	<p>19. Where did Mother Teresa make her home in India?</p> <p><i>any reference to a lot, an empty lot, in the slums, in the poor part</i></p>	<p>20. What kind of a person do you think Mother Teresa was?</p> <p><i>any reference to kind, gentle, caring, benevolent, compassionate, loving, thoughtful, goodhearted, humanitarian, humane, philanthropist, saint, hero, brave, courageous, charitable, generous, giving, helping/ helpful, determined, selfless, unselfish, devoted</i></p>	<p>21. What does <i>slums</i> mean in this sentence? People lived in the slums of India.</p> <p>poor/poverty stricken, ghetto, filthy, dirty, overcrowded, dangerous, unsafe, run-down</p>	18	19	20	21	

A	B	C	D	E

Subtotals Page 2

SCORE/ SUBTEST	A	B	C	D	E
22	23	25	26		
24	27				
28	29	30	31		
A	B	C	D	E	

STORY Allowable prompt: <i>What else can you tell me?</i>	A. Main Idea <i>Acceptable responses</i>	B. Details <i>Acceptable responses</i>	C. Reasoning <i>Acceptable responses</i>	D. Vocabulary and Semantics <i>Acceptable responses</i>
<p>Listen to this story about a medical discovery.</p> <p>Dogs with rabies bite anything they can find, including wood, rocks, and people. When a person is bitten, rabies doesn't show its symptoms for 10 days to several months. Symptoms in people include fever, fatigue, headache, and loss of appetite. The treatment for these symptoms is a rabies vaccine made from antibodies that carry rabies. Some people find it hard to accept that the treatment for rabies is actually inactive rabies itself!</p>	<p>22. What is the main idea of this story?</p> <p><i>any reference to rabies, a disease, how to cure it</i></p>	<p>23. What is the rabies vaccine made of?</p> <p><i>any reference to rabies, antibodies</i></p>	<p>25. Why is it hard to accept that the treatment for rabies is inactive rabies itself?</p> <p><i>any reference to making the victim sicker, injecting/putting the virus into victim, giving them more of the virus, rabies curing the disease, curing it with the problem</i></p>	<p>26. What does symptoms mean in this sentence? The symptoms of rabies are a high fever, itching, seizures, and coma.</p> <p><i>signs, indications, effects, manifestations, characteristics, physical results/experience, reactions, how you know you have it, how it shows/showing, evidence</i></p>
<p>Listen to this story about a U.S. president.</p> <p>When Richard Nixon took office in 1969, he thought he had a great idea. He installed a secret audiotape system to record his conversations in the White House. Later, this well-intentioned system backfired on him.</p> <p>In 1972, the Senate and others accused Nixon of committing crimes and lying to cover up his connection to the crimes. For months, he denied any connection to anything illegal.</p> <p>Finally, in 1974, the secret of Nixon's recorded tapes was revealed. Soon he was forced to give up the tapes. These tapes exposed his part in the crimes and the cover-up. Due to increasing pressure from the government and the public, Nixon became the first president to resign from office.</p>	<p>24. Name two symptoms of rabies in people.</p> <p><i>any two of these: fever, fatigue (tiredness), headache, loss of appetite (not hungry)</i></p>	<p>29. Whose idea was it to install the audiotape system?</p> <p><i>Nixon's, his own</i></p>	<p>30. Why didn't President Nixon give his tapes to the authorities sooner?</p> <p><i>any reference to:</i></p> <ul style="list-style-type: none"> <li>not wanting to admit guilt or get caught, hoping he could hide/cover up truth</li> <li>being afraid of the consequences, not wanting to get arrested/convicted</li> <li>tapes being incriminating, evidence/proof he was guilty/involved in crimes</li> <li>having to resign, wanting to stay in office</li> <li>being ashamed/embarrassed</li> </ul>	<p>27. What is a synonym for <i>fatigue</i> in this sentence? One of the symptoms of rabies is fatigue.</p> <p><i>(must be a one-word response) weary/weariness, tired/tiredness, exhausted/exhaustion, sleepy/sleepiness, drowsy/drowsiness, lethargy</i></p>
<p>Listen to this story about a U.S. president.</p> <p>When Richard Nixon took office in 1969, he thought he had a great idea. He installed a secret audiotape system to record his conversations in the White House. Later, this well-intentioned system backfired on him.</p> <p>In 1972, the Senate and others accused Nixon of committing crimes and lying to cover up his connection to the crimes. For months, he denied any connection to anything illegal.</p> <p>Finally, in 1974, the secret of Nixon's recorded tapes was revealed. Soon he was forced to give up the tapes. These tapes exposed his part in the crimes and the cover-up. Due to increasing pressure from the government and the public, Nixon became the first president to resign from office.</p>	<p>28. What is the main idea of this story?</p> <p><i>any reference to:</i></p> <ul style="list-style-type: none"> <li>the tape system + proved he lied/got him in trouble</li> <li>Nixon/president + involved in/committed a crime</li> <li>irony of his tape system, idea/plan backfired, good idea gone bad</li> <li>his own undoing/downfall</li> </ul>	<p>29. Whose idea was it to install the audiotape system?</p> <p><i>Nixon's, his own</i></p>	<p>31. What is a synonym for <i>exposed</i> in this sentence? These tapes exposed Nixon's connection to the crime.</p> <p><i>(must be a one-word response) showed/shows/shown, revealed, proved, uncovered, unveiled, displayed</i></p>	<p>28</p> <p>29</p> <p>30</p> <p>31</p>

Subtotals Page 3

STORY Allowable prompt: What else can you tell me?	A. Main Idea Acceptable responses	B. Details Acceptable responses	C. Reasoning Acceptable responses	D. Vocabulary and Semantics Acceptable responses	SCORE/ SUBTEST				
					A	B	C	D	E
<p>Listen to this story about Americans making mistakes.</p> <p>Thorstein Veblen studied economics, the science of how a group of people make, buy, sell, and use things. He thought rich Americans showed off by buying expensive things the public could see. These folks tried to impress people and gain power by buying expensive cars, homes, and clothes.</p> <p>Veblen thought this public show of wealth was a waste of money. He thought it was even worse that poor people copied rich people by buying things they could not afford.</p> <p>Veblen wrote a book to urge people to buy only what they needed and could afford, not what would impress other people.</p>	<p>32. What is the main idea of this story?</p> <p>any reference to:</p> <ul style="list-style-type: none"> <li>people copying/imitating/following trends of the rich</li> <li>criticizing the way they spent their money, thinking they were making a mistake with money</li> <li>wanting people to think for themselves about spending money, not be influenced by the wealthy</li> </ul>	<p>33. Why wouldn't Veblen like most TV ads today?</p> <p>any reference to encouraging/convincing people to buy what they don't need/can't afford, advertising expensive items</p>	<p>34. Why did Veblen write his book?</p> <p>any reference to:</p> <ul style="list-style-type: none"> <li>changing spending habits</li> <li>sharing his opinions</li> <li>encouraging/urging/persuading people not to copy rich/buy unnecessary things</li> </ul>	<p>35. What is a synonym for <i>urge</i> in this sentence? He wrote the book to urge people to buy only what they needed.</p> <p>(must be a one-word response) encourage, motivate, push, press, pressure, coax, advise, recommend, inspire, persuade, compel, influence, convince, suggest, beg, plead, ask</p>	32	33	35		
<p>Listen to this story about what Alex heard.</p> <p>In the early morning, Alex took a walk outside. He paused to listen to summer's musicians tuning up for the day. Frogs croaked gently, seeking mates. A band of crickets leisurely chirped signals to each other. The slow chirping meant that the temperature was still cool. As the sun rose higher, the beat and intensity of the music increased. By noon, the concert was in full swing with every insect playing a part in the symphony.</p>	<p>36. What is the main idea of this story?</p> <p>any reference to:</p> <ul style="list-style-type: none"> <li>bug/insect/animal + noises/music/concert/symphony/orchestra/band</li> <li>nature sounds, a natural band, someone listening to nature</li> <li>summer's musicians, a summer concert</li> </ul>	<p>37. How were the insects' noises like a symphony?</p> <p>any reference to a variety of instruments/musicians/music makers playing at the same time, playing different parts, sounds coming together/blending/mixing/combining</p>	<p>38. What is a synonym for <i>indicated</i> in this sentence? The slow rhythm indicated the temperature was still cool.</p> <p>(must be a one-word response) showed/shows/shown, proved, meant, suggested, implied, revealed, confirmed, demonstrated</p>	36	37	38			
<b>Subtotals Page 4</b>					A	B	C	D	E

STORY Allowable prompt: What else can you tell me?	A. Main Idea Acceptable responses	B. Details Acceptable responses	C. Reasoning Acceptable responses	D. Vocabulary and Semantics Acceptable responses	SCORE/ SUBTEST				
					A	B	C	D	E
<p>Listen to this story about a dog.</p> <p>Basil the Basset Hound hadn't had a date in two years, or 14 dog years. Basil enjoyed living with his kind master, but he longed for a canine companion. Determined to change his fortune, Basil approached his master's laptop, which was open and running on a low table. With a few clicks and clever paw tricks, Basil searched the Web for good sites to seek potential mates. He selected WoofWoofPal.com and crafted this ad, hoping to attract the right partner: Charming male canine seeks life companion. Must respect humans. Must have an upbeat attitude. Send an unaltered photo.</p>	<p>39. What is the main idea of this story?</p> <p>any reference to Basil/dog/hound/canine looking or searching for a date/mate/partner/companion/girlfriend, placing an online ad, trying to improve his life, canine companionship</p>	<p>40. Why did Basil want a companion that respects humans?</p> <p>any reference to respecting/ loving his owner/master/human, dogs being expected to respect/ obey humans, because he does</p>	<p>41. What is a synonym for <i>unaltered</i> in this sentence? Send an unaltered photo. (must be a one-word response) original, natural, untouched, unchanged, unaffected, undoctored, untampered, unedited</p>	<p>42. What does <i>upbeat</i> mean in this sentence? Must have an upbeat attitude. cheerful, cheery, happy, joyful, positive, optimistic, enthusiastic, pleasant, bubbly, chipper, energetic, lively, bouncy, peppy, perky, playful, vibrant, frisky, jolly, spunky</p>	39	40	41		
<p>Listen to this story about a university program.</p> <p>While India and China are producing more skilled computer science workers, the U.S. is producing fewer. Computer science courses are less and less attractive to U.S. college students. Many students fear that these courses are too difficult.</p> <p>To change this belief, some universities have used creative ways to attract students to such courses. One university, Georgia Tech, developed lessons that look like comic books. These lessons teach students to program robots. These small robots, called Scribblers, are lightweight and smaller than a Frisbee. They cost \$75, less than many textbooks. Students learn to navigate their Scribblers around obstacles. They also program their blue robots to dance, draw, and make music. Microsoft invested one million dollars in expanding this university project.</p>	<p>43. What is the main idea of this story?</p> <p>any reference to:</p> <ul style="list-style-type: none"> <li>getting more students interested in computer science, needing more computer science workers</li> <li>improving the U.S. computer science industry</li> <li>partnership/relationship between Microsoft and university</li> </ul>	<p>44. What is the name of the small robot?</p> <p>Scribbler(s)</p>	<p>47. Why did Microsoft give money to this project?</p> <p>any reference to wanting more skilled workers/computer scientists, students in programs, improving computer science classes, generating interest in computer science, helping their company, getting more people to work for them, to expand it</p>	<p>49. What does <i>navigate</i> mean in this sentence? Students learn to navigate their Scribblers. move, steer, control, drive, pilot, operate, direct, guide, maneuver, tell them where to go</p>	43	44	47	49	
	<p>45. How much does the small robot cost?</p> <p>\$75</p>	<p>48. Why did the school make the lessons look like comic books?</p> <p>any reference to making it more fun/entertaining/interesting/appealing/attractive/enticing to students</p>			45	48			
	<p>46. How much did Microsoft spend on this project?</p> <p>one million dollars</p>						46		

STORY Allowable prompt: <i>What else can you tell me?</i>	A. Main Idea <i>Acceptable responses</i>		B. Details <i>Acceptable responses</i>		C. Reasoning <i>Acceptable responses</i>		D. Vocabulary and Semantics <i>Acceptable responses</i>		SCORE/ SUBTEST				
									A	B	C	D	E
<p>Listen to a story about something man-made.</p> <p>Kevlar is the man-made substance used in bullet-proof vests and body armor that protects soldiers and police officers. It was invented in 1970 by a scientist who worked for the DuPont company. She created fibers that were stiffer and stronger than any previous fibers. Kevlar fibers are spun into cords or woven into fabric sheets. Kevlar is five times stronger than its weight in steel and it's lightweight, too! Now, this incredible material is used for bridge cables, helmets, spacecraft shells, and bicycles.</p>	<p>50. What is the main idea of this story? <i>any reference to the creation/invention/use of Kevlar/a strong material</i></p>		<p>51. How strong is Kevlar? <i>any reference to stronger than steel, 5x its weight in steel</i></p>		<p>53. Why are some spacecraft shells made of Kevlar? <i>any reference to being strong, lightweight, hard, durable, resisting heat/pressure, protecting in space, protecting astronauts</i></p>				50	51	53		
			<p>52. What company manufactures Kevlar? DuPont</p>							52			
<p>Listen to this story about thinking ahead.</p> <p>Imagine that some kind of disaster wiped out most of the vegetation somewhere on Earth. How would we find seeds to grow the plants and trees that were destroyed? The Global Crop Diversity Trust has developed a bank of important seeds, such as corn and oats, from around the world. These seeds are kept in a cave located below the frost line on a Norwegian island. The cave will safeguard up to two million seeds.</p>	<p>54. What is the main idea of this story? <i>any reference to storing/saving/protecting seeds, revegetating the Earth, scientists protecting from/preparing for disaster</i></p>		<p>55. How many seeds can the bank hold? two million</p>		<p>57. Why did this group include seeds for corn and oats? <i>any reference to:</i></p> <ul style="list-style-type: none"> <li>• being valuable, basic, common, abundant, hearty, plentiful, versatile, important</li> <li>• feeding people/animals</li> <li>• being easy to plant, growing fast</li> <li>• growing in many places</li> <li>• international, universal, available around the world, widely used</li> <li>• being essential to diet, healthy, nourishing</li> </ul>				54	55	57		
					<p>56. What <b>two</b> key seeds are mentioned in the story? corn + oats</p>					56			

Subtotals Page 6

Directions: Listen carefully to these messages so you can answer questions about them.

<p><b>MESSAGE</b>  <b>Allowable prompt:</b>  <i>What else can you tell me?</i></p>	<p><b>E. Understanding Messages</b>  <i>Acceptable responses</i></p>		<p>SCORE/ SUBTEST</p> <p>E E</p>
<p>Plan to head to Lincoln Park this Saturday for a great rock concert by the hot group from Australia, the Dingos. This event is sponsored by local banks and this radio station as part of the city's Promote Tourism program. Parking and tickets are free and there will be concession stands. No outside food or beverages will be allowed. Gates will open at 6 p.m. and music will start at 7. Don't miss this spectacular show!</p>	<p>58. What is this city trying to encourage?  <i>any reference to tourism/visitors, community growth, bringing people to their town</i></p> <p>59. What should you bring if you will be hungry or thirsty during the performance?  <i>any reference to money</i></p>	<p>60. What time do the gates open?                      6</p> <p>61. How much are the tickets?  <i>any reference to free, not costing anything</i></p>	<p>58 60</p> <p>59 61</p>
<p>Here's a great way to earn community service hours. Just collect used cell phones from your friends, family, or neighbors and send them to Support for Shelters. This group will contribute a minimum of \$30 per phone to a local shelter for domestic violence. To get started, pick up a Community Service Hours kit in the guidance counselor's office. The kit contains the instructions and free mailing labels. You will earn one hour of community service for every five phones you collect.</p>	<p>62. What can you earn if you collect used cell phones?  <i>any reference to community service hours</i></p> <p>63. How will you make sure Support for Shelters gets the phones?  <i>any reference to mailing/sending them in, using the mailing label/kit</i></p>	<p>64. Who will the used phones help?  <i>any reference to victims of domestic violence, people who have been abused, shelters</i></p> <p>65. How many hours of community service would you earn if you collected 25 phones?                      5</p>	<p>62 64</p> <p>63 65</p>
<p>Brookdale Zoo is looking for student volunteers to work at the zoo this summer. Applicants must be 16 years or older and in good physical condition. Student workers will receive training in feeding and caring for the animals and their living areas. Other work duties will include maintaining the zoo grounds and restrooms. Applications are available on the table outside the school office.</p>	<p>66. What are the <b>two</b> qualifications for the summer workers at the zoo?  <i>any reference to being 16 or older + being in good physical condition/healthy/strong/fit/in good shape</i></p> <p>67. Why do workers need to be in good physical condition?  <i>any reference to doing manual/physical labor, carrying/lifting heavy items</i></p>	<p>68. How much will the workers be paid?  <i>any reference to nothing, being a volunteer job</i></p> <p>69. Jason is 15 and in good health. He wants to be a zookeeper someday. Should he apply for this job?                      Explain your response.  <i>any reference to:                      no + being too young/not old enough                      yes + if he'll be 16 by start date</i></p>	<p>66 68</p> <p>67 69</p>
<p>City workers were busy throughout the night clearing snow and fallen tree branches from the major roads after last night's incredible storm. Police urge everyone to stay home today, if possible. All area schools and daycare centers are closed. All evening activities and meetings in the viewing area are cancelled. TV 7 will keep you updated throughout the day. Stay tuned for more on weather-related news.</p>	<p>70. What is this message about?  <i>any reference to a storm, closings due to snow, schools/daycare centers/evening activities/meetings cancelled</i></p> <p>71. What advice did the police give?  <i>any reference to staying home, not driving/staying off roads</i></p>	<p>72. What is cancelled for the day?  <i>any reference to evening activities/meetings/schools/daycare centers</i></p> <p>73. What will the TV channel do throughout the day?  <i>any reference to giving updates, providing weather information, reporting cancellations/closings, keeping people informed/posted/notified</i></p>	<p>70 72</p> <p>71 73</p>
<p><b>Subtotals Page 7</b></p>			<p>E E</p>

Appendix F

The Gates-MacGinitie Reading Tests Level 10/12 Form T



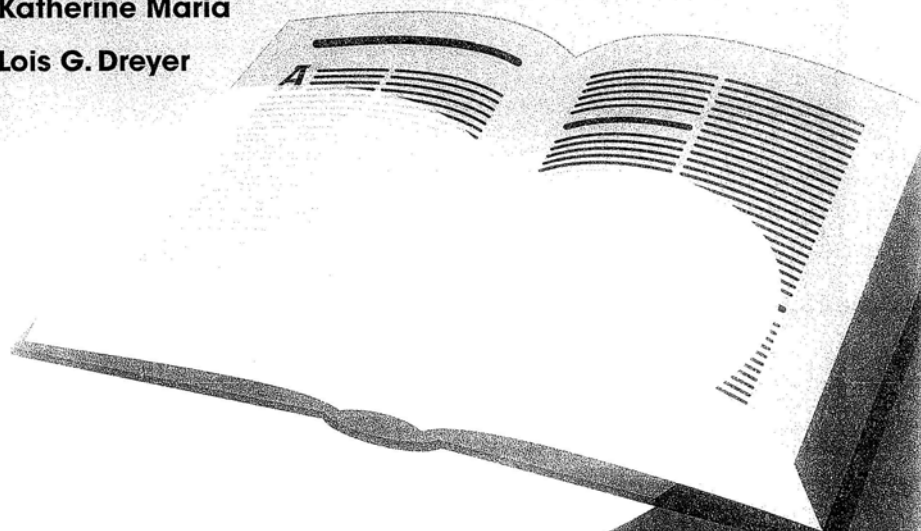
F O U R T H E D I T I O N

**Gates-MacGinitie**

R E A D I N G T E S T S

**LEVEL 10/12**  
**FORM T**

®

**Walter H. MacGinitie****Ruth K. MacGinitie****Katherine Maria****Lois G. Dreyer**

RIVERSIDE



HOUGHTON MIFFLIN HARCOURT

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23 24 25 26 27 28 29--RRD--17 16 15 14 13 12 11

**Vocabulary**

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**V-1. a big garage**

- Ⓚ place for cars
- Ⓛ machine
- Ⓜ sidewalk
- Ⓝ covered porch
- Ⓞ cloth sack

**V-2. They will close it.**

- Ⓟ stay near
- Ⓠ begin
- Ⓡ make
- Ⓢ shut
- Ⓣ go past





**1. Try to unwind.**

- (A) exercise
- (B) relax
- (C) take off the cap
- (D) breathe quickly
- (E) get better

**2. the least one**

- (F) final
- (G) likely
- (H) ordinary
- (I) smallest
- (J) farthest

**3. It was rather sad.**

- (K) suddenly
- (L) hardly
- (M) somewhat
- (N) doubly
- (O) often

**4. the big turmoil**

- (P) whirlpool
- (Q) tornado
- (R) greasy substance
- (S) group of people
- (T) commotion

**5. the new apparel**

- (A) clothing
- (B) equipment
- (C) request
- (D) approach
- (E) perfume

**6. about his sanity**

- (F) treatment
- (G) having a sound mind
- (H) security
- (I) cleanliness
- (J) telling lies

**7. a big rebate**

- (K) surplus
- (L) argument
- (M) restored building
- (N) return of money
- (O) clearance sale

**8. too many calories**

- (P) food choices
- (Q) burners
- (R) units of energy
- (S) containers
- (T) signals

**9. the last ovation**

- (A) enthusiastic applause
- (B) repetition
- (C) formal meeting
- (D) chance to leave
- (E) group performance

**10. The rules were lax.**

- (F) unwritten
- (G) not strict
- (H) always followed
- (I) annoying
- (J) complicated

11. They will merge.

- (K) take over
- (L) combine
- (M) move
- (N) get a promotion
- (O) drive around

12. He was defiant.

- (P) loud
- (Q) sick
- (R) courageous
- (S) disobedient
- (T) distant

13. a satisfactory bounty

- (A) reward
- (B) treaty
- (C) dividing line
- (D) meal
- (E) salary

14. a silver urn

- (F) platter
- (G) coin
- (H) serving spoon
- (I) frame
- (J) vase

15. It was obliterated.

- (K) objected to
- (L) done as a favor
- (M) isolated
- (N) required
- (O) destroyed completely

16. They can ply it.

- (P) calm
- (Q) run away from
- (R) learn about
- (S) use
- (T) listen to

17. It may be ratified.

- (A) distributed
- (B) approved
- (C) rated
- (D) labeled
- (E) explained

18. her great wrath

- (F) fortune
- (G) weeping
- (H) anger
- (I) conceit
- (J) compassion

19. the long wharf

- (K) warehouse
- (L) anchor chain
- (M) sea creature
- (N) dock
- (O) whinny

20. They are indicted.

- (P) marked
- (Q) accused
- (R) located
- (S) invited
- (T) left alone

GO ON ►

**21. the distant knoll**

- (A) small hill
- (B) bell tower
- (C) large cave
- (D) storm
- (E) pasture

**22. a meager meal**

- (F) cold
- (G) festive
- (H) insufficient
- (I) meatless
- (J) delicious

**23. the successful novice**

- (K) athlete
- (L) player
- (M) advice
- (N) book
- (O) beginner

**24. He officiated.**

- (P) became an officer
- (Q) built the office
- (R) led the ceremony
- (S) started the business
- (T) broke the law

**25. from the aqueduct**

- (A) diver
- (B) channel
- (C) large supply
- (D) product
- (E) waterfall

**26. She winned.**

- (F) drew back
- (G) grinned
- (H) cried out
- (I) bit her tongue
- (J) winked

**27. a jovial person**

- (K) merry
- (L) worried
- (M) silly
- (N) critical
- (O) powerful

**28. They were emancipated.**

- (P) asked to participate
- (Q) made stronger
- (R) made uncomfortable
- (S) asked questions
- (T) set free

**29. It can be abridged.**

- (A) spoiled
- (B) sent quickly
- (C) denied
- (D) shortened
- (E) irritated

**30. He may nettle them.**

- (F) go after
- (G) need
- (H) alarm
- (I) disapprove of
- (J) annoy

GO ON ►

**31. a successful hoax**

- Ⓐ magician
- Ⓑ performance
- Ⓒ practical joke
- Ⓓ comedian
- Ⓔ persuasive argument

**32. his unusual stature**

- Ⓐ carving
- Ⓑ height
- Ⓒ secret
- Ⓓ way of talking
- Ⓔ field of study

**33. a faint hue**

- Ⓐ clue
- Ⓑ image
- Ⓒ color
- Ⓓ whisper
- Ⓔ breeze

**34. a long procession**

- Ⓐ robe
- Ⓑ parade
- Ⓒ confession
- Ⓓ concert
- Ⓔ job

**35. the new sprig**

- Ⓐ petal
- Ⓑ season
- Ⓒ water source
- Ⓓ spree
- Ⓔ small branch

**36. They did forsake it.**

- Ⓐ smash
- Ⓑ ask about
- Ⓒ try to help
- Ⓓ leave
- Ⓔ advertise

**37. the dark shale**

- Ⓐ rock
- Ⓑ shape
- Ⓒ moss
- Ⓓ outer cover
- Ⓔ cliff

**38. It must be curbed.**

- Ⓐ pulled down
- Ⓑ washed away
- Ⓒ cupped
- Ⓓ cleaned up
- Ⓔ held back

**39. He will waive a trial.**

- Ⓐ start
- Ⓑ give up the right to
- Ⓒ report on
- Ⓓ preside over
- Ⓔ learn about

**40. the old ledger**

- Ⓐ checkbook
- Ⓑ scale
- Ⓒ amount
- Ⓓ computer part
- Ⓔ account book

GO ON ►

41. She will stoke it.

- (A) add fuel to
- (B) block
- (C) tie
- (D) find the answer to
- (E) brush

42. an interesting periodical

- (F) news story
- (G) predicament
- (H) magazine
- (I) new discovery
- (J) study

43. They run competently.

- (K) to help people
- (L) compulsively
- (M) some of the time
- (N) capably
- (O) against others

44. They may impede it.

- (P) hamper
- (Q) send for
- (R) imprint
- (S) construct
- (T) bring

45. a different facade

- (A) kind of makeup
- (B) point of view
- (C) parade
- (D) false front
- (E) bit of knowledge





## Comprehension

---

Sometimes—not very often—we get two full moons in one month. That second full moon is called a “blue moon.” No one knows why. Now we say “once in a blue moon” to mean “once in a long time.”

**C-1. To be a “blue moon,” the moon must be**

- Ⓘ dark.
- Ⓙ long.
- Ⓚ blue.
- Ⓛ full.

**C-2. What is it that no one knows?**

- Ⓜ What the name is.
- Ⓝ Who uses the name.
- Ⓞ Where the name came from.
- Ⓟ What the name means.

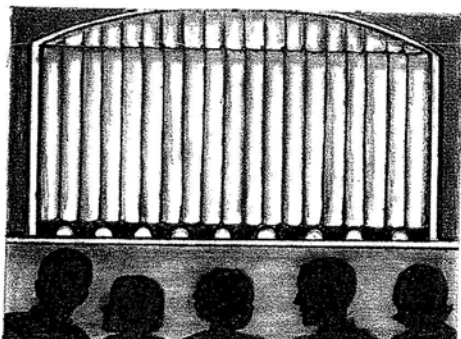




Elizabeth played Adelaide, and when she sang “Adelaide’s Lament” she stopped the show. Willowy, poised, her long auburn hair loose and free, she not only had a stage presence that was breathtaking to her parents, her sense of timing and comedy was stunning. Laura and Ben were moved and astonished. They had always been involved parents. They had watched carefully over every step of their daughter’s development since she was an infant, and yet suddenly she had grown into a unique person of her own—overnight, it seemed, when they weren’t looking.

1. When Elizabeth’s parents were watching the show, they were

- (A) impressed.
- (B) nervous.
- (C) ashamed.
- (D) proud of themselves.



2. Elizabeth’s performance made her parents realize that they

- (E) had been protecting her too much.
- (F) should have tried harder.
- (G) didn’t know all there was to know about her.
- (H) should not have discouraged her from performing.

3. In this passage, moved means

- (I) kept going.
- (J) started up.
- (K) taken away.
- (L) deeply affected.

GO ON ►

Not all spiders spin webs, although all use silk in some way, if only to make a cocoon to shelter their eggs, but the best performance is probably that of the trapdoor spider of the tropics. This not only excavates a vertical tunnel in the ground and lines it with silk, it makes a thickened rim at the entrance to the tunnel and constructs on this a hinged circular lid that fits the entrance exactly.

**4. The inside of this spider's tunnel would be**

- Ⓐ light.
- Ⓑ sandy.
- Ⓒ soft.
- Ⓓ hinged.

**5. You can tell from the passage that *all* spiders**

- Ⓐ catch flies.
- Ⓑ spin webs.
- Ⓒ come from the tropics.
- Ⓓ lay eggs.



**6. This passage is mainly about how one kind of spider**

- Ⓐ excavates a tunnel.
- Ⓑ traps its food.
- Ⓒ fools its enemies.
- Ⓓ builds with silk.

**GO ON ►**

*A basketball player tells how he felt during two weeks of hard practice.*

Mysterious. I had never been mysterious to me before. I liked it. I always liked other people who surprised me with good stuff because I thought I was smart enough to expect everything before they showed what they had. Now I could like myself the same way. It was like meeting this new dude, invisible, who was made by the moves, and what they made was, he was me. I played harder and harder every night, no stopping me now, cutting through things I never knew could be done, pushing it and forgetting everything else for hours until I would suddenly notice my feet were hot, or I would not be able to breathe if I ran to the hoop once more. During that time, all those hours, I was one thing only—the moves.

**7. What the narrator found mysterious about himself was his ability to**

- Ⓔ outsmart other people.
- Ⓕ do things he didn't know he could do.
- Ⓖ predict what other people would do.
- Ⓗ play for hours without getting tired.

**8. The narrator says that he liked it when other people**

- Ⓘ thought of him as mysterious.
- Ⓙ thought he was smart.
- Ⓚ did things he wasn't prepared for.
- Ⓛ expected a lot from him.

**9. What they had refers to**

- Ⓜ basketball moves.
- Ⓝ money they could offer.
- Ⓞ what they thought of the narrator.
- Ⓟ what they wanted to trade.

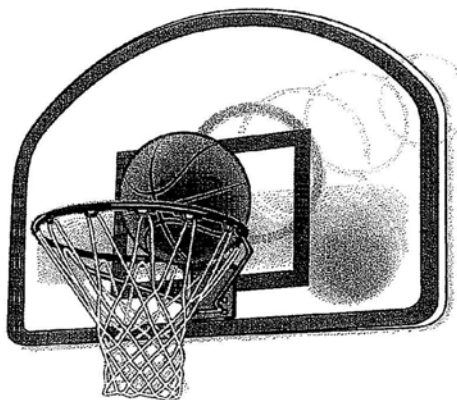
**10. This new dude refers to**

- Ⓠ the narrator himself.
- Ⓡ the narrator's imaginary opponent.
- Ⓢ a person the narrator tries to imitate.
- Ⓣ a mysterious person watching the game.

**GO ON ►**

11. In this passage, cutting through means

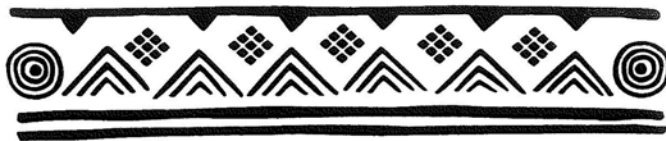
- Ⓐ driving to the hoop.
- Ⓑ doing readily.
- Ⓒ getting down to the main point.
- Ⓓ going between two other players.



12. When the narrator was out of breath, he realized that

- Ⓔ he needed to practice more.
- Ⓕ he was not concentrating enough.
- Ⓖ he was getting too old to play.
- Ⓗ he had been practicing a long time.

**GO ON ►**



Like other mountain villages, La Cima had just one street. It curved along the top of a narrow ridge, faced on both sides by thick-looking houses built of heavy logs with mud chinking. Many of them seemed to have no windows at all; others had hide stretched tightly over small square holes, the hide oiled to let light through. Apparently the only outsider the La Cima citizens had allowed to stay for a while was a galvanized tin salesman. All the roofs were of corrugated metal, pitched steeply like those on Swiss chalets, shining dully in the firelight.

**13. The narrator thought that a tin salesman had come because of the**

- Ⓘ pitch.
- ⓵ roofs.
- Ⓚ pots.
- Ⓛ chinking.

**14. The passage suggests that the citizens of La Cima were**

- Ⓜ unhappy.
- Ⓝ lonely.
- ⓐ dishonest.
- Ⓟ suspicious of strangers.

**15. Which word best describes La Cima?**

- Ⓐ Bustling.
- Ⓡ Spread out.
- Ⓢ Remote.
- Ⓣ Muddy.

**GO ON ►**

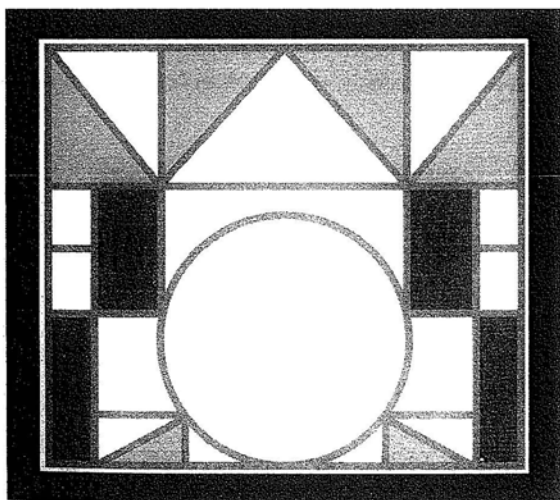
All of us instinctively seek to arrange the elements of our environment in satisfying patterns of color, sound, texture, and so on, and human beings who were cut off from acquaintance with traditions of art would promptly set about improvising patterns and forms of their own. But in a society where we are surrounded by paintings, music, poems, and architecture it is impossible to respond to the unadorned reality about us with senses unaffected (or should I say untrained) by our predecessors' selectively ordered reflections of it.

**16. The author speaks of art as a way of**

- (A) overcoming reality.
- (B) organizing one's world.
- (C) creating moods.
- (D) making acquaintances.

**17. The author believes that people's need for pattern and form is**

- (E) cut off.
- (F) improvised.
- (G) surprising.
- (H) universal.



**18. This passage is mainly about how our view of the world is influenced by**

- (I) reality.
- (J) unaffected senses.
- (K) artistic traditions.
- (L) our hopes.

**GO ON ►**

A coral animal starts life as a small planktonic larva which eventually comes to rest on a substrate and changes into a polyp. This begins dividing to form identical polyp neighbors. Each polyp secretes a wall of limestone around it, but each member of the colony is connected to others by thin strands of tissue passing through pores in its hard wall. Within the polyps' skins are small yellow-brown granules which are primitive plants called dinoflagellates. These plants photosynthesize, releasing oxygen which is used by the polyp, which in turn produces phosphates and nitrate wastes and carbon dioxide to be utilized by the plants. Coral reefs are formed by the compacted and cemented skeletons of sedentary organisms such as corals and some algae which become smothered by the next layer of coral animals and so support the new "skin." These organisms need clear, sunlit and warm water and thus coral reefs are not found in deep water or near the mouths of large rivers or urban centers where the water is full of sediment.

**19. How does a coral colony get started?**

- Ⓐ A coral animal settles and divides.
- Ⓑ Coral animals attach to one that has settled.
- Ⓒ A coral animal grows until it touches others.
- Ⓓ A school of young coral animals settles close together.

**20. What do coral animals get from dinoflagellates?**

- Ⓐ Limestone.
- Ⓑ Phosphates.
- Ⓒ Oxygen.
- Ⓓ Carbon dioxide.

**GO ON ►**



21. Coral animals benefit dinoflagellates by

- (A) producing nitrate wastes.
- (B) purifying the water.
- (C) releasing heat energy.
- (D) releasing oxygen produced by algae.

22. What sometimes smothers the algae in coral reefs?

- (E) Granules.
- (F) Small planktonic larvae.
- (G) Dinoflagellates.
- (H) New coral animals.

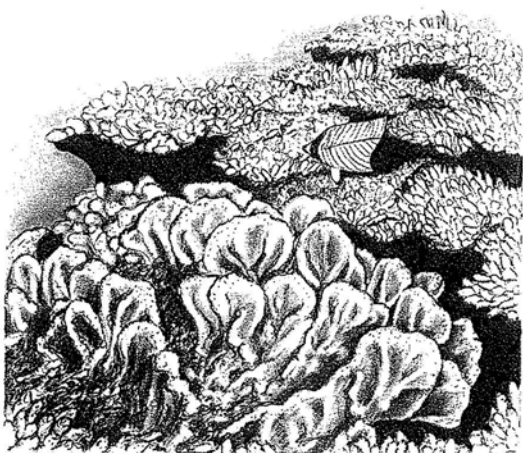
23. Corals grow only in water that is

- (I) clear.
- (J) cold.
- (K) deep.
- (L) near river mouths.

24. Coral neighbors connect with one another through pores in the

- (M) substrate.
- (N) limestone.
- (O) smothered layer.
- (P) compacted and cemented skeletons.

**GO ON ►**



Maid's work in Las Vegas has become something of a high-tech industry, studied by teams of professionals, who have plotted, for instance, the most efficient routes through a room. "When I started as a maid," a housekeeping instructor recalled, "I had a bucket with soap, and I had this big old brush, and I had to rub and scrub. Nowadays, they got everything so it's spray and wipe—they got the soap in the bottle and you spray it on and you wipe it and you rinse it off." The work is akin to that of an assembly-line worker's, and, as in many factories, it pays union scale.

**25. Why has the maid's job been so thoroughly studied?**

- Ⓐ To protect the maids.
- Ⓑ To satisfy the union.
- Ⓒ So the job can be done in the least time.
- Ⓓ So the maids can be paid less for a day's work.

**26. Nowadays, Las Vegas maids clean with**

- Ⓐ brushes.
- Ⓑ buckets and bars of soap.
- Ⓒ computers.
- Ⓓ spray solutions.

**27. What does the passage suggest that maid's work in Las Vegas is like?**

- Ⓐ It is fully automated.
- Ⓑ It follows a set pattern.
- Ⓒ It is dangerous.
- Ⓓ It is exhausting.

**28. The passage compares Las Vegas hotel maids to**

- Ⓐ factory workers.
- Ⓑ teams of professionals.
- Ⓒ maids in other cities.
- Ⓓ workers in a high-tech lab.

**GO ON ►**

A restless, excited mood hurried me forth at a late hour into the darkening grounds.

I sought the orchard: driven to its shelter by the wind, which all day had blown strong and full from the south; without, however, bringing a speck of rain. Instead of subsiding as night drew on, it seemed to augment its rush and deepen its roar: the trees blew steadfastly one way, never writhing round, and scarcely tossing back their boughs once in an hour; so continuous was the strain bending their branchy heads northward—the clouds drifted from pole to pole, fast following, mass on mass: no glimpse of blue sky had been visible that July day.

It was not without a certain wild pleasure I ran before the wind, delivering my trouble of mind to the measureless air-torrent thundering through space.

**29. Why did the narrator hurry outside?**

- (M) She was planning to meet someone.
- (N) She felt unable to relax.
- (O) She had many errands to do.
- (P) She was afraid to be alone in the house.

**30. Why did the narrator go into the orchard?**

- (Q) To be protected from the wind.
- (R) To get out of the rain.
- (S) To find a quiet place to think.
- (T) To avoid being seen.

**31. How had the weather changed since earlier in the day?**

- (A) It had begun to rain.
- (B) It had become cloudy.
- (C) The wind had become stronger.
- (D) The sky had begun to clear.

**32. What did the narrator notice about the clouds?**

- (E) They formed fantastic shapes.
- (F) They were bringing rain.
- (G) They drifted slowly.
- (H) They moved straight across the sky.

**33. The narrator seemed to find the evening**

- (I) gloomy.
- (J) beautiful.
- (K) frightening.
- (L) stimulating.

GO ON ►

In about 1460 King René of Anjou wrote a book describing the proper way to hold a tournament.

The ceremonies he describes are very elaborate. They began many days before the tournament itself, with the sending of a challenge from one great noble to another. The king-at-arms then proclaimed the tournament far and wide, inviting nobles to attend. On the opening day judges and contestants rode into town in formal procession; the banners of the chief knights were hung from the windows where they lodged. On the second day the helms of the contestants were displayed, so that the ladies might inspect them, and denounce any knight guilty of an unchivalrous act. On the third day a “chevalier d’honneur” was chosen. During the contest he carried a handkerchief upon a lance and any knight he touched with it was spared further attack. On the fourth day the tournament was held, followed by the awarding of prizes. Each day ended with feasting, music and dancing.

**34. When a tournament was going to be given, what happened first?**

- Ⓐ A knight was denounced.
- Ⓑ One noble challenged another.
- Ⓒ The king-at-arms made a proclamation.
- Ⓓ An invitation was sent out to all the nobles.

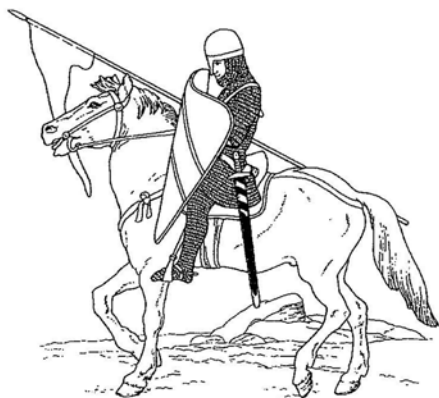
**35. Who inspected the helms of the contestants?**

- Ⓐ The king-at-arms.
- Ⓑ The chief knights.
- Ⓒ Ladies attending the tournament.
- Ⓓ A panel of judges.

**GO ON ►**

36. Why were the helms inspected?

- (A) To check for damage to them.
- (B) So the judges could recognize them.
- (C) To make sure no one had an unfair advantage.
- (D) To identify any knights who had done something wrong.



37. What did the “chevalier d’honneur” have the power to do?

- (E) Declare a knight the winner.
- (F) Excuse a knight from further combat.
- (G) Appoint a knight to the panel of judges.
- (H) Stop a knight from entering the tournament.

38. The passage suggests that tournaments were

- (I) festive.
- (J) disorganized.
- (K) unfair.
- (L) denounced.

GO ON ►

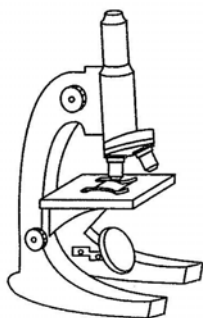
As newly minted one-dimensional chains, proteins are useless. For them to assume their myriad forms and carry out their vital duties, they must bend and twist into intricate three-dimensional shapes held in place by chemical bonds. Imagine crushing a length of yarn in your hand. The tangled mass resembles a folded protein. Some proteins coil into loops or spirals, others bend into hairpins or press into pleated sheets resembling accordions. Any given protein may contain several of these shapes, in unique and specific arrangements. Shape promotes function. For example, the nooks and crannies in the folds of a digestive enzyme trap starch molecules, which can then be placed near chemicals that break them down into sugar. Similarly, bacteria and viruses fit snugly into the folds of antibodies, which hold them tight while summoning help from other immune system defenders.

**39. To be useful, protein chains must**

- (M) become folded.
- (N) move to the right place.
- (O) be activated by a chemical.
- (P) become attached to other chains.

**40. What holds the three-dimensional form of a protein together?**

- (Q) Molecular "pins."
- (R) Chemical connections.
- (S) Tangles.
- (T) Links within the chain.



**41. What do digestive enzymes do with starch molecules?**

- (A) Combine them into sugar.
- (B) Carry them to the cell.
- (C) Keep them near substances that turn them into sugar.
- (D) Prevent them from leaving the digestive system.

**42. An enzyme must be a kind of**

- (E) bacterium.
- (F) protein.
- (G) immune system defender.
- (H) starch molecule.

**43. How does an antibody hold a virus?**

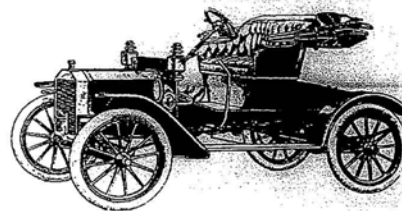
- (I) By enclosing it within a cell wall.
- (J) By binding it to bacteria.
- (K) By coiling around it.
- (L) By fitting it into a kind of pocket.

GO ON ►

### Model T Cars

Before I was nineteen I owned or shared ownership in three different rattletrap Model T's, and I had always accepted them as a part of the natural environment.

My teacher, however, made me see them for the remarkable machines they were, comparing them to the living, breathing steam locomotives that were beginning to pass from the railroads. When one cranked a Model T into life, it would nudge forward like a friendly horse eager to be in motion. If the motor had been badly treated so that the spark lever had to be pushed down to make it start, the crank would kick, sometimes so hard the thrust could break a wrist. If a Model T stopped running, a ten-year-old could repair it, and drive it.



**44. At first, the author thought that Model T's were**

- (M) wild things.
- (N) nothing special.
- (O) beginning to pass.
- (P) remarkable machines.

**45. The teacher compared Model T's to locomotives because he thought they both**

- (Q) seemed alive.
- (R) were dangerous.
- (S) were out of date.
- (T) used steam power.

**46. Why does the author like the way a Model T started?**

- (A) It seemed impatient to go.
- (B) It responded to kindness.
- (C) It didn't need cranking.
- (D) A small child could crank it.

**47. What was the result when the Model T had not been treated well?**

- (E) It sparked.
- (F) It pushed people down.
- (G) It was hard to start.
- (H) It had to be cranked.

**48. The passage suggests that the teacher would have thought that today's cars are**

- (I) easier to drive than Model T's.
- (J) more fun than Model T's.
- (K) more like locomotives than Model T's.
- (L) more complicated to fix than Model T's.



# Gates-MacGinitie Reading Tests®, Fourth Edition

Name _____ <small>(Last Name, First Name)</small>		Raw Score	NCE	PR	Sta- line	GE	ESS	Derived scores are from norms for Fall <input type="checkbox"/> Winter <input type="checkbox"/> Spring <input type="checkbox"/> of Grade _____
Teacher _____		Vocabulary						
Date of Testing _____ Grade _____		Comprehension						
School _____		Total						

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