Examining the Effects of Repeated Reading on the Adolescent Reader’s Accuracy, Rate, Prosody, Reading Comprehension, and Motivation to Read

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Abstract

Reading fluency has traditionally been viewed as a goal in reading that is taught and mastered in the early elementary grades. However, over the past decade, reading fluency has come to be seen as a critical contributor to reading proficiency and reading difficulty beyond the primary grades. Unfortunately, there is limited research focusing on the fluency needs and fluency interventions for the upper elementary and middle school students. This study helps to fill the gap in the literature by employing a quasi-experimental design to investigate the effects of the intervention repeated reading on accuracy, rate, prosody, comprehension, and motivation to read among 5th and 6th grade English Language Arts students in a small K-8 school in Massachusetts. After assessing accuracy, rate, prosody, comprehension, and motivation to read with a pretest, implementing the intervention repeated reading for a twelve-week period, and reassessing accuracy, rate, prosody, comprehension, and motivation to read with a posttest, a one-way ANCOVA was used (after testing necessary assumptions) to compare the adjusted means of the reading performance variables. The findings indicate mixed results regarding the impact of repeated reading on reading achievement. This study showed students who received the intervention repeated reading scored significantly higher on accuracy, rate, prosody, and motivation to read, however, there was not a significant difference found in comprehension scores. The results provide confirming evidence that the reading intervention repeated reading assists in the development of upper elementary and middle school students overall reading achievement.

Key words: reading fluency, accuracy, rate, prosody, comprehension, motivation to read, repeated reading
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Chapter One: Introduction

Statement of the Research Problem

The latest National Assessment of Educational Progress (NAEP) reading results indicate that recent efforts to improve K–3 literacy education are successful at the fourth-grade level but that these improvements have not translated into higher levels of achievement among adolescents (National Center for Educational Services (NCES), 1999, 2006, 2009). For example, literacy testing indicates that the percentage of students scoring at a proficient level on the NAEP has significantly improved among fourth graders, but that literacy has not improved between eighth and twelfth graders (NCES, 1999, 2006, 2009; Olson, 2006). In 2008, analysis of long-term reading trends showed average reading scores for fourth graders were twelve points higher than in 1971 but only 4 points higher for eighth graders since 1971. The evidence that long-term NAEP reading results for 12-17 year-olds have changed very little over the last 30 years indicates that efforts to improve academic literacy among adolescents face significant challenges.

Some researchers suggest that a focus on fluency skills is necessary in order to improve adolescent literacy skills and reading comprehension (see for example, Paige, 2012). Although a focus on fluency skills may be necessary evidence suggests that there is a critical lack of fluency instruction at the upper elementary level. Research and practice has established that readers enhance comprehension by reading with appropriate fluency (Chall, 1991). For years, teachers have believed that if students could learn to decode words accurately, they would be successful at reading printed text. However, accuracy in decoding words is an incomplete definition of fluency. Readers not only need to decode the words accurately; they also need to decode them
effortlessly or automatically. The ability to read with appropriate phrasing and expression (prosody) is also important for fluency (Allington, 2006). Reading fluency, therefore, refers to accurate and automatic decoding of the words in a text, along with expressive interpretation of the text (prosody), in order to achieve comprehension. Fluency is the bridge between the two major components of reading—word decoding and comprehension. At one end of the bridge, fluency connects to accuracy and automaticity in decoding (Rasinski, 2005). At the other end, fluency connects to comprehension through prosody, or expressive interpretations. Readers derive textual meaning by reading with appropriate fluency. Fluent readers tend to read in a way that constructs meaning. However, less-fluent readers tend to struggle with making meaning. A reader’s ability to construct meaning from a text is hindered by slow word recognition skills. Additionally, poor prosody can lead to inappropriate groupings of words, resulting in confusion related to textual meaning (Paige, Rasinski, & Magpuri-Lavell, 2012). Both accurate word recognition and prosody are critical components of fluency.

Scientifically-based research reviews (Chard, Vaughn, & Tyler, 2002; Kuhn & Stahl, 2000; National Institute of Child Health and Human Development, 2000) have concluded that fluency is a critical component of learning to read and that an effective reading program needs to include fluency instruction. The National Assessment of Educational Progress 2009, found that nearly half of eighth graders had not achieved a minimal level of reading fluency, which is associated with significant difficulties in comprehension while reading silently (Pinnell et al., 1995). Although a growing body of research establishes a strong connection between fluency and comprehension, reading fluency receives little attention or merit, especially as fluency relates to adolescent readers (Paige, 2012; Rasinski, Padak, Mckeon, Wilfong, Friedauer, & Heim, 2005; Rasinski, Rilli, & Johnson, 2009). Reading fluency has been identified as a
critical element in effective reading instruction by the National Reading Panel (National Institute of Child Health and Human Development [NICHD], 2000). However, a recent survey of literacy experts indicated that reading fluency should not be considered a topic in need of heightened consideration (Cassidy & Cassidy, 2010; Cassidy, Ortlieb, & Shettel, 2011). Some researchers believe that the lack of focus on reading fluency could be the result of the widespread misconception that: reading fluency is primarily an oral-reading issue; that reading fluency is essentially speed of reading with little or no connection to reading for meaning, and that reading fluency is chiefly an issue for primary grades (Ashby, 2006; Goodman, 2006; Pressley, Hilden, & Shankland, 2005; Rasinski, 2005).

The lack of fluency instruction has resulted in students entering middle and high school unable to fluently read their grade level textbooks or age-appropriate text for pleasure. Rasinski, et al. (2005) indicates the ongoing plight of the middle school reader: 32% of boys and 19% of girls at the eighth-grade level read below the basic level. Further estimates indicate half of ninth grade readers demonstrate reading fluency rates below the 25th percentile for eighth grade (Rasinski, et al. 2005). Fluent reading and the teaching of fluency strategies have been identified as one of five essential components of literacy programs (National Reading Panel (NRP), 2000). If children cannot decode words, read fluently and with prosody, they cannot make meaning of what is read. Thus, the act of reading is meaningless. Fluency instruction at the upper elementary and middle school level therefore must be an integral component of reading instruction. Yet, the National Reading Panel (NRP, 2000) states fluency was a neglected aspect of reading and one of the least known aspects of the five major components of reading (NRP, 2000; O’Connor, White, & Swanson, 2007; Pikulski & Chard, 2005). Reading instruction at the upper elementary and middle school level faces the same multitude of needs and program implementation difficulties
as in the elementary level. However, research indicates that less than five minutes a day is spent on fluency instruction at the upper elementary and middle levels (Paige, Rasinski, & Magpuri-Lavell, 2012).

Although there is universal recognition that fluency is important, little is done in the upper elementary classroom to develop this important skill. Reutel and Hollingsworth (1993) state the development of reading fluency has been a neglected part of reading instruction despite the fact that many reading authorities consider it to be an important part of the reading curriculum. Research indicates that reading instruction on fluency issues for upper elementary, middle, and secondary school is less than 5 minutes a day (Paige, 2012). As students transition from early elementary school to upper elementary and middle school, there is a shift from “learning to read” to “reading to learn”. The adolescent reader is expected to have adequately mastered basic reading skills such as decoding accurately and fluently, understanding word meaning and reading text with comprehension (Chall, 1983). However, text comprehension is difficult for struggling adolescent readers who are still learning to accurately and fluently decode grade level text. Additionally, the early adolescent reader is transitioning from reading and understanding narrative text to an increased content area expository text. With the decreased emphasis on “learning to read” in upper elementary and middle school, students who are not reading with proficiency by the end of early elementary school may face serious academic challenges and become unable to meet grade level expectations. It is important that educators intervene before the gap widens further.

The past research does not adequately address the need to focus on adolescent fluency skills (Paige, 2012; Paige & Maguri-Lavell, 2011; Rasinski et al., 2005). Reading fluency has been viewed as a skill that is mastered in the primary grades (NICHD, 2000). Chall's (1991)
seminal model of reading development states that fluency should be mastered in the early stages of reading development. For most developing readers, fluency is mastered early, implying that by upper elementary and middle school, only minimal fluency instruction should be provided, despite disappointing national and local test scores.
**Significant Statement**

This research project is intended to contribute to the literacy discussion and to assist struggling adolescent readers on a national, state, and local level. Students, policy makers, literacy researchers, reading specialists, educators and society as a whole can benefit from determining more appropriate instructional strategies for the struggling adolescent reader.

More effective strategies going forward are important because students who experience reading difficulties in school often continue to experience this difficulty in adulthood. The latest figures of the National Assessment of Adult Literacy (NAAL) are not encouraging in this regard. Only 13% of adult Americans read at the proficient level. Fourteen percent of adult Americans read below the basic level of proficiency and 29% read at the basic level (National Center of Education Statistics, 2009). This means that nearly half of these Americans adults will struggle to comprehend higher-level prose or to solve written problems accurately. The ramifications of reading difficulties in the intermediate and secondary grades that persist into adulthood are serious at both individual and societal levels. Today, literacy can be seen as the pathway to economic freedom. The need to address reading concerns early is critical (Pressley, 2006). However, only a limited amount of research dealing with the struggling adolescent reader is readily available, particularly in the area of reading fluency (Edmonds, et al. 2009; Joseph & Schisler, 2009; Nichols, Rupey, & Rasinski, 2009; Rasinski & Padak, 2005). This lack of research data defines the need to further explain whether reading fluency instruction is beneficial for the struggling adolescent reader and to what extent fluency instruction benefits them. It is also critical to determine appropriate interventions for the struggling adolescent readers.
Determining appropriate interventions is critical because when students experience a lack of success in middle school they may disengage from school and be more inclined to drop out. Further, it is necessary to determine appropriate ways to intervene with struggling readers in the upper elementary schools before they reach the middle and secondary grades and are faced with a multitude of more complex academic challenges. Researching the relationship between fluency instruction and comprehension for the adolescent struggling reader will enhance the abilities of teachers and researchers to determine the appropriate instructional strategies necessary to improve adolescent and adult literacy. In addition, research needs to be conducted to examine students’ motivation to read following the implementation of a given instructional strategy or intervention.

Theoretical Framework

The theoretical framework section will discuss Chall’s developmental stages of reading (Chall, 1973), and the theory of automaticity (LaBerge & Samuels, 1974) and it will also demonstrate how these theories can be used as theoretical frameworks when looking at the effects of repeated reading on struggling adolescent readers’ accuracy, rate, prosody, motivation to read, and comprehension.

Chall’s Developmental Stages of Reading

Chall posits that the process of becoming literate can be understood as a series of qualitatively different stages through which learners progress as they become increasingly proficient with print (Chall, 1983). As learners develop familiarity with print, they shift from dealing with words on a word-by-word basis, to a rapid, accurate and expressive rendering of
text. Chall’s developmental framework includes the following reading stages: Stage 0: The pre reading phase - birth through age six. During this stage, the child develops some knowledge of print, such as recognizing a few letters, words or environmental print. Stage 1: Initial reading or decoding- grades one through two. During this time, children develop an understanding of the alphabetic principle and begin to use their knowledge of sound spelling relationships to decode words. Stage 2: Confirmation, fluency, and ungluing from print -grades two through three. At this stage, children solidify their decoding skills and develop strategies for making meaning from text. At this stage, children have developed fluency; that is, they can recognize many words quickly and accurately by sight. They are skilled at decoding and using context clues. The primary focus of this paper will be related to this stage of reading development. Stage 3: Learning the new - grades four through eight. During this stage, reading demands change. Children begin to use reading more as a way to obtain information and to learn about the values, attitudes, and insights of others. Stage 4: Multiple Viewpoints- grades nine through twelve. During this stage, readers encounter more complex language and vocabulary as they read text in more advanced content areas. Thus, the language and cognitive demands required of the reader increases. Stage 5: Construction and reconstruction- throughout college and beyond. At this stage, readers take in a wide range of information and construct their own understanding for their individual uses, based on their analysis and synthesis of the information (Chall, 1983).

**The Theory of Automaticity**

Embedded within the decoding and fluency stages are a series of phases children seem to go through as they develop automaticity of sight word reading. LaBerge and Samuels’ theory of automatic information processing (LaBerge & Samuels, 1974), also known as the theory of automaticity, discusses the relationship between fluency and the ultimate goal of reading: that is
the construction of meaning (Anderson, Heibert, Wilkinson, & Scott, 1985).

The theory of automaticity was the first modern theoretical basis offered for the importance of fluency as well as the connection between fluency and comprehension. Laberge and Samuels argued that it is not sufficient for readers to read words in text accurately – they must also read words automatically. Laberge and Samuels posit that the surface level processing of words and reading (visual perception, sounding, phrasing words together, etc.) ideally should be done at an automatic level that requires minimal attention or cognitive energy. They argue that readers have a limited amount of attention or cognitive energy. If readers expend too much cognitive energy in order to decode the words in a text, they have little remaining for comprehension—the more important task in reading. Laberge and Samuels hypothesize that poor comprehension for many readers could be explained by the investment of too much of those readers’ cognitive resources in the surface level aspects of reading—the slow, laborious, conscious-filled decoding of words. This depletion of resources exhausts attention that could be invested in efforts to comprehend (Laberge & Samuels, 1974).

Figure 1 shows the four components involved in Laberge and Samuels’ automatic information processing that includes visual memory (VM), phonological memory (PM), episodic memory (EM), and semantic memory (SM) (Laberge & Samuels, 1974; Samuels, 2004). These four processes work together to affect reading comprehension.

It is important to make a distinction between accuracy and automaticity. An individual can be accurate without being automatic. When a task that formerly required attention for its performance can be done without attention, the task is being done automatically. Automaticity in information processing means that information is processed with little attention. One way to determine if a person is performing a task automatically is to give him or her two tasks to
perform at the same time. If the tasks can be performed simultaneously, at least one of them is being done automatically. Throughout all four processes, the concepts of attention and automaticity demonstrate interplay between each stage in both a forward and backward direction. For example, experienced readers recognize high-frequency words with limited or no attention. Meanwhile, foreign language or content area vocabulary words may require additional time or attention to assist in the recognition of words (Laberge & Samuels, 1974; Samuels, 2004). The four components or processes are not inclusive of all parts associated with the complex skill of reading. However, with each component carrying its own processes and informational flow, these processes are not linear or singularly directed (Samuels, 2004). Prior to comprehending text at a deeper level, the reader must perform surface level processing of the text in order to begin the reading process. A brief description of the four components of the theory follows.

Figure 1. Automaticity in information processing.
**Visual memory** Visual memory is the first component, or processing stage, in the model. During this phase incoming information from words in print strikes the sensory surface of the eye, where detectors process features. As a reader encounters new text, detectors within the eye process different features, like the curves, angles or lines and relational features of each letter in order to recognize individual letters (Samuels, 2004). Visual information is analyzed by detectors and put into features, which are combined to form letters. At the next level in the model, letter combinations such as *sh, th, bl* and *ing* may be combined to form spelling patterns. As the reader develops further decoding skills, attention becomes less necessary for the preliminary processing of individual letters in words (Samuels, 2004). This interplay continues as the reader develops skills toward the process of phonological memory.

**Phonological memory** Once input from visual systems has been processed for physical features, phonological recording and memory related to acoustic and articulatory input engages cognitive attention. Similar to the hierarchy in visual memory process, phonological memory provides us with a series of steps in which visual stimuli is processed from features, phonemes, syllables, and finally into words (Samuels, 2004). Acoustic input from stimulation external to the individual and articulatory input from stimulation internal to the individual are thought to be part of the phonological memory system (Samuels, 2004).

A phoneme consists of uniquely descriptive acoustic features. A phoneme may be thought of as a sound unit that indicates a change in word meaning, such as the difference between /m/, /p/ and /l/ as in man, pan, fan. Each of these phonemes signals a change in word meaning. In both visual and phonological memory, information processing may move from features up to words, or from words down to features. When going from a whole word into its features, a decomposition into parts takes place. When a student sounds out a new word letter-
by-letter and blends the sounds to form a word, the student is engaging in a bottom-up process of synthesizing a word from its parts to a whole. These first two processes provide opportunities for the reader to proceed in a forward direction to process text without attention or without having to decompose words into parts (Laberge & Samuels, 1974; Samuels, 2004). Laberge and Samuels believed the associations between the visual and phonological, although not immediate, are the fastest learned processes. Reading instruction must focus on moving the reader beyond accuracy, to a phase where limited attention is needed thus bringing reading to the point of automaticity (Samuels, 2004).

**Episodic memory** Episodic memory is responsible for putting a time, place, and context tag on events and knowledge. Episodic memory helps us to remember details of events that happened in the past. The organization of knowledge and events in episodic memory are listed in categories such as *when* (time), *where* (place), and *who* (person) (Samuels, 2004). For example, an individual may receive lessons (an event) on how to drive a car. This event may be recalled with details, such as *who* was the instructor, *when* did the instruction occur, and *what* type of vehicle was used. The abstract knowledge of how to drive is the essential information that is retained. This knowledge is stored in semantic memory.

**Semantic memory** The final component in the automaticity theory is semantic memory. Individual word meanings are produced in semantic memory, and comprehension of written test also occurs in this component. The semantic memory components of the information automaticity of processing theory begin the progression from decoding to comprehension. As decoding is becoming automatic the reader is simultaneously turning his or her attention to understanding and making meaning. Fortunately, through spoken language, the reader already has an automatic understanding of word meaning. As the reader engages with printed text and
decoding, episodic memory is concurrently placing contextual tags on time, place, and events while semantic memory is accounting for comprehension (Laberge & Samuels, 1974; Samuels, 2004). In order to get at the underlying meaning in a sentence, attention comes into play in a number of ways during the comprehension process. It is used to organize the words in a sentence into grammatical units, and it is used to determine the relationship in meaning that exist within and between grammatical units. Through their theory, LaBerge and Samuels attempt to demonstrate a relationship between decoding and comprehension. By theorizing the importance that automaticity has on decoding, they believed the attention no longer needed for decoding is then transformed into the higher-level system of comprehension (LaBerge & Samuels, 1974).

**Response systems** LaBerge and Samuels’ theory posits that each reader possesses a limited amount of cognitive attention for the task of decoding and comprehension. The levels of attention can be activated selectively at the surface or at the deeper level. The number of components or codes that can be activated simultaneously, irrespective of attention, is virtually limitless (LaBerge & Samuels, 1974). However, once attention is required, the number of codes to be activated is probably narrowed to one. This situation is similar to that of a new driver who focuses solely on the driving process, while the experienced driver can handle several activities concurrently. LaBerge and Samuels’ (1974) criterion for automaticity of a skill occurs when the reader can direct his or her attention elsewhere. The directing of attention happens both externally and internally. The internal processes, which are the predominant features of this theory, are the above-mentioned visual memory, phonological memory, episodic memory, and semantic memory. An example of an external aspect of attention is when a person's eyes are glued to a book and we assume he or she is internally processing the information on the page and trying to construct meaning from it. As shown in Figure 1.2, the intention of LaBerge and
Samuels’ theory of automaticity concerns the reader switching his or her attention capacity from decoding toward full cognitive attention focused on comprehension.

![Diagram: Attention and Reading](image)

**Figure 2.** Attention and Reading.

Each of the four component processes describes the skills needed to become a proficient reader. Each step requires the reader's attention until automaticity is achieved. When word recognition achieves the level of automaticity, the reader is free to turn the cognitive attention towards higher-level processing of comprehension. The theory of automaticity posits that dysfluent readers are non-automatic in decoding or that they demonstrate slow recognition of individual words. This reader performs oral reading in a halting manner, with little or no expression. Where a struggling reader plods along, attending to individual letter shapes or sounds, thus inhibiting comprehension, the efficient reader quickly processes text, freeing up
valuable cognitive attention for making meaning.

Chall’s developmental reading stages and Laberge and Samuels’ theory of automaticity are the foundational theories, which support this research project. For many readers, comprehension suffers not because the readers have insufficient cognitive resources to make meaning out of the text they read, but because they depleted those resources by having to employ them in word recognition (Laberge & Samuels, 1974). For these readers, the initial reading of a text is not fluent. And if that initial reading is their only reading, then these students are engaged in a process of practicing dysfluent reading. Sometimes readers need to practice reading a text or a section of text a number of times before moving on, a practice is known as repeated reading (Samuels, 1979). Fluency is believed to be an outcome resulting from a learned set of skills, with practice seeming to be the key to the development of fluency (Rasinski, 2005). The concept of repeated reading was developed to help alleviate those cognitive demands of decoding or word recognition, to provide practice, build skills, and thereby to move attentional resources to comprehension (Rasinski, 2005). This intervention strategy has shown positive result at the elementary level (Rasinski et al., 2009) however, there is limited research on the effect of repeated reading at the upper elementary, middle, and secondary levels. This research project will help to fill this gap in the research.
Positionality Statement

As a teacher, I became passionately aware of the need to not only teach students functional skills, but also to help to provide them with conceptual tools necessary to critique and engage in society, along with its inequalities and injustices. It became clear to me that one of the major issues in education is its inability to ensure that all students have access to, and the development of, a literacy education. The definition of literacy is not susceptible to a narrow definition given the interdependent digital world in which we live. To be literate in the 21st century assumes heightened importance if we are to ensure both individual and national economic growth and competitiveness in the global world.

The foundational need to close the achievement gap in literacy education became the focus of my teaching career and research interests. In order to effectively research and to find appropriate instructional strategies that will support the struggling adolescent reader, I must have a clear understanding of my positionality. It is essential that I am aware of how my personal biases, presumptions, and assumptions have affected my decisions and the formation of my ideas. I found it imperative to gain an understanding of critical discourse analysis which reveals the manner in which dominant groups discursively represent non-dominant or minority groups as inferior and abnormal while implicitly or explicitly elevating and advantaging their own social status and identities. This awareness will help to ensure that I am better able to represent both the dominant and non-dominant groups in society. Briscoe (2008) states that researchers from a privileged group cannot adequately interpret the world of those who experience oppression. This results in the interpretation and representation of the “other” that is, at best, incomplete, and at worst, subordinating. More often than not, these incomplete or distorted perceptions of the
“other” have resulted in ascriptions of inferiority” (Briscoe, 2008). All researchers have biases that enter into the research process. By making biases explicit, a researcher can adjust for these variables in conducting and assessing research (Machi & McEnvoy, 2009).

My research and investigation for improving struggling adolescent readers comprehension by focusing on fluency strategies must begin with looking at and understanding my own values. It is essential that individuals are sufficiently cognizant to avoid “universal” truths, ideas of “otherness” and ideas that take the form of deficits where the hegemonic center defines, differences in terms of “we” that mark the hegemonic center, and of “they”, that mark difference on the margins (Fennell & Arnot, 2008). Few things are more difficult than to see outside the bounds of our own perspective. It is difficult to identify assumptions that we take as universal truths and to understand and to accept that we have been crafted by our unique identity and experiences in the world. Acknowledging and understanding that one's knowledge claims are not universal truths, that one's positionality can bias one's epistemology, is an essential beginning for educational researchers. The goal of education is the development of a just world; a world that would require equal access to all opportunities for all.

**Research Question**

What is the effect of the instructional strategy repeated reading on 5th and 6th grade readers’ accuracy, rate, prosody, comprehension, and motivation to read?

The purpose of this quantitative research study is to investigate the effects of the reading intervention repeated reading on 5th and 6th grade student’s fluency skills and overall reading achievement. Research suggests that repeated reading is an effective instructional strategy for early elementary readers. However, there is little research available that focuses on the fluency development or fluency instruction for the upper elementary and middle school students. This
research project will help fill the gap in the literature.

Definition of Key Terms

**Reading Fluency:** Fluency combines accuracy, rate, and oral reading prosody, which, taken together, facilitates the reader’s construction of meaning. It is demonstrated during oral reading through ease of word recognition, appropriate pacing, phrasing, and intonation. It is a factor in both oral and silent reading that can limit or support comprehension.

**Accuracy:** is the accurate decoding of words in a text. The basic method of oral reading fluency assessment utilizes fluency measures in one-minute intervals. Accuracy is determined as the percentage of words read correctly over the course of the assessment. Accuracy will be measured using the Curriculum Based Measure of Oral Reading Fluency (Fuchs, Fuchs, & Maxwell, 1988).

**Rate:** is the speed with which you are read. Readers need to read at an appropriate rate so they can understand the text. Reading too fast or too slow makes the reading hard to understand. To sound natural, readers pause, stop, speak at a normal pace, speed up, or slow down at certain parts. Reading rate is calculated as words correct per minute.

**Prosody:** is the appropriate use of phrasing, intonation, inflection, and expression to convey meaning. In reading, prosody refers to the ability to make oral reading sound like authentic oral speech. Prosody is measured in this research project using the Multidimensional Fluency Scale.
Comprehension: is the ability to read text, process it, and understand its meaning. Reading comprehension is understood to be the process of simultaneously extracting and constructing meaning through interaction and involvement with a text. A reader’s comprehension or meaning making varies according to the text being read and the purpose for reading the text. Comprehension is measured in this research project using the Gates-MacGinitie Reading Test (GMRT).

Motivation to Read: is a student’s eagerness and willingness to read. Motivation is a key factor in successful reading. When students are motivated to read, they will read frequently, which in turn helps them become skilful readers. Skilful readers gain access to multiple texts, which contributes to a deeper knowledge base. Motivation to read in this research project is assessed using the Motivation to Read Profile (MTRP) (Gambrel & Palmer, 1998).

Repeated Reading: Repeated reading is a strategic instructional strategy developed by Samuels (2006) designed to increase reading fluency and comprehension. During repeated reading, students read and re-read a selected short passage until they reach a satisfactory level of fluency. Repeated reading is the independent variable and the instructional strategy used in this research project.
Chapter Two

Literature Review

Introduction

Research has demonstrated that students who do not read skillfully at the completion of third grade are likely to experience ongoing academic difficulties throughout their educational experience (Juel, 1988). Studies estimate that 69% of fourth grade students cannot read at proficient levels and that 36% of fourth grade students are unable to read at or above basic levels of understanding (National Center for Educational Studies as cited in Wanzek, Wexler, Vaughn & Ciullo, 2010). A vast number of seminal studies supporting this conclusion have led the literacy education community to develop a significant number of instructional strategies and interventions designed to help students who are struggling to read in elementary school. However, these interventions have not been directed at reading difficulties among upper elementary and middle school students. Current reading researchers have suggested that additional focus is necessary to develop adolescent fluency skills and fluency interventions that will assist the struggling adolescent reader to gain proficiency (National Assessment of Educational Progress, 2005; Rasinski, 2005; Rasinski & Padak, 2005; Schrauben, 2010).

This section will define fluency and discuss the pertinent research surrounding fluency and the fluency intervention repeated reading. Additionally, motivation to read will also be discussed because of its relationship to overall reading achievement.
Fluency

New interest was generated in the topic of reading fluency, a previously neglected instructional reading concept, following publication of a report by The National Reading Panel (NRP), sponsored by the National Institute of Child Health and Human Development [NICDH], 2000). The NRP panel of experts identified reading fluency as one of the four key areas for which focused instruction would be most likely to produce proficient readers. Fluency combines accuracy, rate, and oral reading prosody to facilitate the reader’s construction of meaning. Fluency skill is demonstrated during oral reading through ease of word recognition, appropriate pacing, phrasing, and intonation. In both oral and silent reading, reading fluency either limits or supports comprehension. The NRP provided findings that were enlightening. For example, they suggested that certain forms of guided oral reading and practice aimed at developing reading fluency, including repeated readings, promote reading growth in the elementary grades. The findings have been useful in guiding teachers to consider fundamental changes in the use of oral reading instruction in their classrooms (Rasinski, 2005). It is important to note that reading fluency has not historically been an instructional strategy for many reading professionals nor has reading fluency received much attention in the undergraduate and graduate level coursework for teachers of reading. For example, a survey of reading methods textbooks and reading instructional materials found minimal attention given to the concept of reading fluency (Rasinski & Zutell, 1996). However, reading professionals now recognize that fluency is a key to success in reading as a result of the NRP recommendations.

Additionally, research and practice has established that readers enhance comprehension by reading with appropriate fluency (Torgesen & Hudson, 2006). Poor word decoding and fluency skills often hinder reading comprehension. Historically, teachers believed that if students
could learn to decode words accurately, they would be successful at reading printed text. However, accuracy in decoding words is an incomplete definition of fluency. Readers not only need to decode words accurately, but also to decode them effortlessly and automatically. Further, the ability to read with appropriate phrasing and expression (prosody) is a requirement for fluency. Reading fluency, therefore, refers to the ability to accurately and automatically decode the words in a text, along with expressive interpretation of the text (prosody) in order to achieve comprehension (Rasinski, 2009). Fluency is the bridge between word decoding and comprehension. At one end of the bridge, fluency connects to accuracy and automaticity, or reading rate, in decoding. At the other end, fluency connects to comprehension through prosody, or expressive interpretations (Rasinski, 2005). Readers derive critically important textual meaning by reading with appropriate fluency. Fluent readers tend to read in a way that constructs meaning. Less-fluent readers tend to struggle to make meaning as they read (Rasinski, 2005). A reader’s ability to construct meaning from a text is hindered by slow, arduous word recognition skills. Poor prosody can lead to inappropriate groupings of words, resulting in confusion related to textual meaning (Paige, Rasinski, & Magpuri-Lavell, 2012).

The NRP definition of fluency appears to be straightforward and encompassing, yet the definition of fluency is a question that arises continually in today's research (Rasinski, 2005). Definitions within specific studies will vary, depending upon the researcher and the current area of study. Torgesen and Hudson (2006) described fluency as a student's reading rate or words identified correctly per minute (WCPM) in their study investigating overall academic achievement and the role reading fluency plays in the process. Other studies and articles present yet more comprehensive definitions. Rasinski posits that reading fluency is the combination of accuracy, automaticity or rate, and prosody (Rasinski, 2005; Rasinski, et al. 2009; Rasinski,
A similarly comprehensive approach, with an emphasis on prosody, led Schrauben (2010) to describe fluent reading as "fluid, flowing, and facile" (p. 87). Rasinski, et al. (2012) reported that the "NRP defined reading fluency as the ability to simultaneously process written texts accurately, automatically, with appropriate prosody and comprehension" (p. 76).

Because of the multiplicity of reading fluency definitions in use today, teachers must be mindful of the definition of fluency that they impress upon students when designing and implementing classroom fluency instruction. Those who use an approach that emphasizes reading rate tend to find students perseverating on speed alone, while neglecting accuracy and comprehension. The ultimate goal of any reading instruction, including fluency, must remain fixed on making meaning from text. (Chard, et al. 2009; Hasbrouck & Tindal, 2006; Kuhn, Schwanenflugel, & Meisinger, 2010; Rasinski, 2005). Because making meaning from text is the goal of reading fluency instruction, measurement of fluency requires attention to three integral constructs: accuracy, automaticity or rate, and prosody (Kuhn, Schwanenflugel, & Meisinger, 2010).

**Accuracy**

Accuracy is generally defined as a reader's ability to recognize or to identify printed words or to decode words accurately (Allington, 2006; Dudley, 2005; Rasinski, et al. 2005; Rasinski, 2009; Valencia, et al. 2010). The generally accepted method for assessment of reading fluency is measurement of fluency rates in one-minute intervals (Deeney, 2010; Dudley, 2005). Accuracy is determined as the percentage of words read correctly over the course of the assessment. If a reader reads one hundred words in one minute and makes four errors in the interval, his or her accuracy rate would be ninety-six percent. Criterion word recognition accuracy rates range from independent level at 95% or above, instructional level between 90-94% accuracy, and frustration level below 90% (Rasinski, 1999). By using these criterion rates
during oral fluency assessments, teachers are better able to match appropriate reading materials with individual students based upon their needs and skills.

**Automaticity or Rate**

The ability to process decoded words rapidly, effortlessly and automatically is the second critical building block on which reading fluency is based (Rasinski, 1999; Rasinski, Homan, & Biggs, 2009). Meyer and Felton (1999) stated automaticity, or reading rate, is the ability to read connected text rapidly, smoothly, effortlessly and automatically, with little conscious attention to the mechanical processes of reading, such as decoding. One of the most important milestones in the theory and concept of fluency came from the publication of the Laberge and Samuels (1974) theory of automatic information processing and reading. The theory of automaticity was the first modern theoretical framework that supported the importance of reading fluency. Laberge and Samuels argued that it is not sufficient for readers to read words in text accurately – they must also read words automatically. Laberge and Samuels posited that the surface level processing of words and reading (visual perception, sounding, phrasing words together, etc.) ideally should be done at an automatic level that requires minimal attention or cognitive capacity. They argued that readers have a limited amount of attention or cognitive energy and further, that if readers expend too much cognitive energy simply decoding the words in a text, they have little remaining energy for comprehending the meaning of the text- the more important task in reading. Laberge and Samuels hypothesized that poor comprehension by many readers resulted from readers investing too much of their cognitive resources in the surface level aspects of reading- the slow, laborious, conscious-filled decoding of words. The resulting depletion of cognitive resources exhausted energy that could have been invested in comprehension (Laberge & Samuels, 1974). Thus, their perspective, supported by recent research (i.e., Torgesen & Hudson, 2006), requires that the goal
for readers is to read words in text automatically. When automaticity is in place in the reading process, readers can employ most of their cognitive energy in comprehension (Laberge & Samuels, 1974). For many readers, comprehension suffers, not because the readers have insufficient cognitive resources to make meaning out of the text they read, but because they depleted those resources in word recognition effort (Rasinski, 2012).

Torgesen and Hudson (2006) believed automaticity, or reading rate, is defined as the fluent identification of individual words and the speed with which a reader moves through the text. As noted, measurement of reading rates involves reliance on the use of grade-leveled oral reading fluency passages to determine a reader's reading rate, or words correct per minute (WCPM) (Dudley, 2005; Rasinski, 1999). Based upon the resulting reading rate, teachers naturally assume a student is - or is not - a fluent reader, based on oral fluency norms. Looking at this measurement in isolation, the teacher may be correct. However, the measurement is flawed because it is incomplete.

Accuracy and automaticity, or reading rate, have played a major role in the notion of reading fluency for many years (Dudley, 2005; Schrauben, 2010; Wexler, et al. 2008). Parents and teachers alike assume the students who read with few errors at a high rate of speed are good readers because they appear to be “fluent readers”. However, although the students may exhibit few miscues and high reading rates, the passage they read may have been written on a grade level significantly below their chronological grade level. Additionally, consider the teacher who claims a student consistently performs at or near 98% accuracy rate when reading passages written for his or her current grade level. Yet, this middle school student may only comprehend the text at 40-60 WCPM levels, a score reflective of the 25th percentile of a third grader. Do we consider this student a good, or fluent, reader?
Reading rates have long been highly correlated with reading comprehension, but reading fluency involves more than rate and speed (Kuhn, 2005; Rasinski, 2005; Schrauben, 2010). That point of view has led researchers, Allington (2006), Rasinski (2009), and Valencia, et al. (2010) to believe there is an over-reliance today on oral reading fluency assessment procedures. Reading rate (the number of words a reader can read on a grade level text in a minute) has come to be the standard and primary measure of reading fluency, resulting from studies that have shown high correlation between reading rates and reading comprehension (Rasinski, 2012). This correlational research has led many educators to define reading fluency simply as reading fast. This is an erroneous definition. Fluency instruction in many classrooms has become a simplistic quest for speed. But fluency, the practice of reading with and for meaning, is a multi-faceted process (Rasinski, 2012). The importance of prosody and comprehension is lost when classroom teachers and reading specialists over-emphasize reading speed and accuracy to the subordination or exclusion of prosody and comprehension (Kuhn, Schwanenflugel, & Meisinger, 2010; Rasinski 2009; Rasinski & Padak, 2005; Schrauben, 2010). Thus, for this research study, providing a thorough understanding and a clear definition of fluency is critical. It is essential that researchers and educators incorporate accuracy, rate, prosody, and comprehension in the definition of fluency. Automaticity, or reading rate, is the bridge between the two major component of reading- word recognition and comprehension. Accuracy and reading rate are requisite aspects of word recognition skills (Rasinski, 2005). When a reader has developed age appropriate accuracy and rate, he or she can begin to focus on reading with prosody, combining vocal inflection, intonation and expression in his or her oral reading. Prosody becomes the bridge from word recognition and automaticity to comprehension (Rasinski, 2012).
Prosody

Visitors to modern classrooms may find middle school students reading aloud during language arts classes in monotone, expressionless voices. These are students who may lack the rhythm, flowing rate and intonation that make the passage sound interesting and similar to oral language (Kuhn, 2005; Kuhn, Schwanenflugel, & Meisinger, 2010; Nichols, Rupley, & Rasinski, 2009; Torgesen & Hudson, 2006; Topping, 2006). Modeling good reading with expression, intonation, inflection, and phrasing, known as prosody, invites students into the passage and brings text to life. Rasinski (2009), Rasinski and Padak (2005), Schrauben (2010), and Torgesen and Hudson (2006) maintain that oral reading that models prosodic elements is the process in which reading becomes a performance or personal interpretative presentation of text. Prosody galvanizes reading fluency by providing the moment in which simple oral reading develops into the sound of spoken language. Through the reader's voice, written text takes on the questions, surprises, and exclamations interpreted by the oral reading of the text (Rasinski, 2005). Referring to prosody in reading, Martin (1966) stated that much of the meaning of the sentence is found in saying the words aloud in addition to intellectualizing the words. Thus, prosody aids the reader in constructing meaning from text in additional ways. For instance, prosody can be used to emphasize certain words or to mark phrase or sentence boundaries in the text (Dowhower, 1991) and to identify a sentence as interrogative or exclamatory. According to Schreiber (1980), prosody plays a significant role in segmenting or “chunking” text into syntactically appropriate and meaningful groupings of words in oral and written language that further expands reader comprehension (Schreiber, 1980). Schreiber argues that the ability to “chunk” or phrase text into syntactically appropriate and meaningful multi-word units is an important aspect of learning to read. Generally, most phrase boundaries in written texts are marked by punctuation. However,
when phrase boundaries are not explicitly marked in written texts, readers can employ their prosodic sensitivity to break written text into appropriate phrases (Rasinski, 2005).

Research on prosody has examined the relationship between prosody and overall reading achievement. Prosody is most commonly measured by qualitative assessments during oral reading, using a quantitative rubric. Using this rubric, Rasinski (1985) found significant correlations between a six-point measure of prosody and performance by third and fifth graders on a standardized test of silent reading comprehension.

Additionally, a study of oral reading conducted by the National Assessment of Educational Progress, Pinnell et. al. (1995) also found substantial correlation between measures of phrasing and expression (prosody) and fourth-graders’ performance on a silent reading comprehension test. In both studies, students who were ranked highest on a four-point prosody rubric tended to have the highest scores on a standardized silent reading comprehension assessment. Conversely, lower scores on prosody were associated with poor silent reading comprehension. Similarly, Rasinski, Rilkli, and Johnson (2009) found significant correlation between assessments of oral reading prosody and performance on a standardized silent reading comprehension test for third, fifth, and seventh grade students.

Assessment of oral interpretive reading is essential to the development of students’ prosodic or expressive reading competencies. Methods have been developed to help teachers measure the extent to which students provide an expressive interpretation while reading orally. Expression of text is difficult to quantify, so researchers have turned to qualitative rubrics, or rating scales, to guide the assessment process and to assign a grade or level. The rubrics range from well-phrased, expressive reading at one end, to word-by-word monotonic reading at the other. The process involves a student reading a grade level passage while a rater listens to the
student for approximately 60 seconds. The rater then consults the rubric and assigns a score that most closely aligns with the student’s reading.

On the other hand, assessments specifically incorporating prosody and passage comprehension significantly improved the assessment of oral reading fluency and provided a stronger predictor of comprehension (Rasinski, 2005). Rasinski (2009) indicates fluency instruction must be vigilant and focused on the goal of making meaning. Further subsequent research has provided a more in-depth look at reading fluency that combines accuracy, automaticity, and prosody.

Interesting research and study has been conducted over the years on reading fluency and oral reading fluency measures including one-minute fluency measures (Deeney, 2010; Hasbrouck & Tindal, 2006; Kuhn, Schwanenflugel, & Meisinger, 2010). Analysis has shown that oral reading fluency assessments which measure accuracy and rate through a single measure of WCPM to be highly predictive of reading comprehension (Chard, et al. 2009; Rasinski & Padak, 2005; Samuels, 2006). Previous research has also determined that curriculum-based measures, such as WCPM, are reliable, valid, and easy to administer screening or monitoring tools (Deeney, 2010; Rasinski, et al. 2005). Valencia, et al. (2010) investigated a narrower basis relating to oral reading fluency assessments. They chose to look at the validity aspects of these assessments. Their research clearly found a statistically significant increase from single use of WCPM to assessments combining accuracy, rate, and prosody, in their variance in comprehension scores (Schrauben, 2010). Moreover, by adding a comprehension aspect to the passage, greater predictability upon reading comprehension was achieved. The study by Valencia, et al. (2010) utilized the National Assessment of Educational Progress (NAEP) Oral Reading Fluency Scale to measure prosody. Classroom implications from this study and Rasinski
(2005) clearly advocate the necessity for teachers and intervention specialists to incorporate oral reading fluency assessments that merge all aspects of fluency, accuracy, rate, prosody, as well as passage comprehension. This research study will incorporate a prosody component to the repeated reading intervention. Studying prosody and how it is related to fluency and comprehension is pertinent to this research project. Gaining a thorough understanding of how prosody proficiency is interrelated with fluency and comprehension proficiency is imperative. The use of prosody assessment rubrics support classroom instruction, and aid in the development and implementation of more appropriate interventions that offer more detailed information concerning individual differences in student performance (Kuhn, Schwanenflugel, Meisinger, 2010; Rasinski, 2005; Valencia, et al. 2010). Additionally, conducting research on the effects that prosody has on comprehension will help to fill the gap in the research literature.

Comprehension
Reading is a complex developmental process in which reading competency increases over a lifetime. Reading comprehension is developed after students have mastered text-based fluency skills, topic knowledge, and have developed cognitive monitoring and strategy to use as texts become more complex (Alexander, 2005-2006). Comprehension takes on critical importance as students transition from early elementary school to upper elementary and middle school when a shift occurs from “learning to read” to “reading to learn.” The adolescent reader is expected to have adequate proficiency in basic reading skills such as decoding accurately and fluently, understanding word meaning, and reading text with comprehension (Wanzek, Wexler, Vaughn & Ciullo, 2010). Text comprehension is more difficult for struggling adolescent readers who are still developing fluency skills that are necessary to decode grade level text. Additionally, the early adolescent reader is transitioning from reading and understanding narrative text to reading and understanding expository text with increased content area knowledge. Decreased
emphasis on “learning to read” in upper elementary and middle school means that students who are not reading with proficiency by the end of early elementary school may face serious academic challenges and become unable to meet grade level expectations. It is important that educators intervene before the gap widens further, to avoid the probability that children who are poor readers will become adults who are poor readers.

Though reading instruction must continue to include both the mechanics of and the meaning made from reading, comprehension is a critical component of the reading instructional program when students transition into the intermediate grades in elementary school (Pressley, Wharton-McDonald, Hampston, & Echevarria, 1998; Pressley, Yokoi, Rankin, Wharton-McDonald, & Hampston, 1997). The appropriate emphasis for intermediate-level reading instruction turns to making meaning from connected text. However, evidence indicates that many student readers lack the fluency skills necessary to decode grade level text and are unprepared for the transition to comprehending text.

Reading comprehension and the teaching of comprehension strategies is identified as one of five essential components of a literacy program (National Reading Panel (NRP), 2000). An emphasis on reading to learn in the intermediate grades is essential but reading for meaning is also central to instructional reading programs. Reading for meaning includes teaching students to use strategies and practices that promote and enhance their abilities to think deeply about what they read and how they construct meaning (NRP; Pressley, 2006; RRSG, 2002). If children can decode words, read fluently, and with prosody but cannot make meaning from what is read, the act of reading is meaningless. Therefore, comprehension instruction must be an integral component of reading instruction.

Reading comprehension is an active process, which requires the flexible use of cognitive
and metacognitive strategies (RAND Reading Study Group, 2002). Skilled readers use learned strategies such as: stopping periodically to summarize their learning, making predictions and inferences, connecting textual information to other texts and prior knowledge, and by asking and answering questions to monitor and clarify their understanding while reading (Block & Parris, 2008; National Reading Panel, 2000; Pressley, 2006; Pressley & Afferbach, 1995; Pressley, El-Dinary & Bergman, 1992). These are strategies of particular importance for students in upper elementary and middle school who are expected to engage in self-regulatory academic behaviors as they navigate complex content-area texts (Pressley, Wharton-McDonald, Mistretta-Hampston, & Echevarria, 1998). Teaching readers to be strategic and self-regulating involves teaching them how to be responsive to the shifting demands of the reading context they encounter (Pressley, Wharton-McDonald, Mistretta-Hampston, & Echevarria, 1998). The process of reading a passage to gain meaning does not take place in a single point of time, but begins before the reader opens the book, continues throughout the reading, and continues after the reading concludes. In order to successfully attain meaning from text, good readers demonstrate the utilization of metacognitive skills and strategies. Metacognitive strategies such as comprehension monitoring, and rereading, are used to monitor or assess the progress made toward making meaning. In order to successfully attain meaning from text, good readers demonstrate their utilization of metacognitive skills and strategies. These readers access texts using pre-reading, during reading and post-reading strategies (Duke, 2004). Pre-reading skills include setting purposes or goals for reading, activating prior knowledge, reviewing or building vocabulary, and making predictions or questioning the text (Pressley, Gaskins & Fingeret, 2006; Rawaon, 2010; Salinger, 2003). Once reading begins, good readers monitor their reading to ensure understanding, seek answers to their initial questions, or summarize text (Duke, 2004). As
reading concludes, readers summarize their text and seek answers to their questions or they may participate in classroom discussion about the text. These discussions occur with the hope of furthering a deeper understanding about the text: through critical, reflective thought leading to reader acquisition of a higher-order meaning from the text (Wilkinson, Soter, & Murphy, 2010).

While teaching reading comprehension, it is important that instruction focuses on preparing readers not simply to use strategies such as those outlined above but also to actually become strategic readers. This means (a) building readers' knowledge base regarding strategies; (b) teaching readers how to analyze reading tasks so that they can set goals, plan their actions, and select appropriate strategies; (c) building readers' repertoire of strategies so they access a variety of flexible use strategies to accomplish their goals and to overcome challenges; (d) teaching readers to monitor and to regulate their comprehension; and (e) motivating readers to use cognitive and metacognitive strategies (Pressley, Symons, Snyder, & Cariglia-Bull, 1989).

Teaching students to become strategic readers involves teaching students how to be responsive to the shifting demands of the reading context and to continually monitor and evaluate their own progress toward the ultimate goal of comprehending the text. However, students who lack grade level fluency skills will struggle to comprehend grade level text. It is critical to determine appropriate interventions to help struggling readers develop fluency skills allowing them to gain meaning from text (Sporer, Brunstein, & Kieschkec, 2009). Instructional strategies that develop the overall reading achievements of readers will result in more proficient readers who are motivated to read.

**Motivation**

Teachers overwhelmingly agree that maintenance of student reading motivation and engagement are pressing issues confronting educators. Reading motivation is a complex and fragile condition. It needs to be fully understood and nurtured in order to preserve its potential.
Understanding motivation to read and developing instructional strategies that support reading motivation throughout the reading process is critical. Humans are born with an intrinsic motivation to learn and to improve. Despite a motivated early start in life, children's motivation often declines in early elementary school (Guthrie & Wigfield, 2000). Kindergarten and first-grade students are very motivated to learn but as they advance through the grades they become less interested in learning and less interested in school (Guthrie & Wigfield, 2000). Attitudes toward reading show similar trends. Guthrie and Wigfield (2000) found a clear decline in the motivation to read in the elementary years as well as a decline in the students’ perception that reading was useful. One reason for the decline in student motivation is that as students mature, they change the way they look at their performance outcomes. Kindergarten and first-grade students do not differentiate between ability and effort. They believe high effort equals high ability. They believe they can succeed by trying hard. As children get older, they differentiate between effort and ability. Children understand that if two people expend the same amount of effort, the one who is more successful has more ability. Success is seen in terms of high ability, not continuous effort. Ability attribution is much less motivating than effort attribution to younger students. When a person believes ability determines outcome, there is no reason to exert effort because effort does not matter (Guthrie & Wigfield, 2000). Ability attribution can have devastating effects on students’ motivation and educational experience. Ability attribution is an important factor in explaining the decreased motivation of older struggling readers.

Readers who develop self-confidence to try new strategies when they experience failure or difficulty, and who come to see the activity as pleasurable, are motivated learners (Guthrie, 2004). The level of motivation a reader brings to a task impacts how and whether or not he or she uses comprehension strategies (Guthrie, 2000). Engagement plays an important role in reading.
Engagement refers to the relationship between motivation and learning. Engaged readers work in a motivated way. They use the strategies and skills they have developed with effort, persistence and an expectation of success (Oldfather, 1995). Guthrie described engaged readers as: motivated to read for a variety of personal goals; strategic in using multiple approaches to comprehension; knowledgeable in their construction of new understanding from text, and socially interactive in their approach to literacy. Readers have wants and intentions that enable reading processes to occur. Readers comprehend a text not only because they can do it, but also because they are motivated to comprehend it. As Guthrie noted, engaged reading is strategic and conceptual as well as motivated and intentional. The cognitive side of engagement emphasizes that effective readers are deliberately making choices within a context and selecting comprehension strategies for text content (Guthrie & Wigfield, 2000). Engaged readers are strategic, seeking conceptual understanding and advanced knowledge acquisition. Engaged reading is strongly associated with reading achievement. Students who actively and frequently read will improve their comprehension of text (Edmonds, 2006).

Motivation is also crucial to engagement because motivation activates behavior. A less motivated reader spends less time reading, exerts lower cognitive effort, and is less dedicated to full comprehension than more highly motivated readers. Students with high intrinsic motivation, a learning goal orientation, and high self-efficacy are relatively active readers and high achievers. In fact, the motivational process may be the foundation for coordinating cognitive goals and strategies in reading. For example, if a person is intrinsically motivated to read and believes he or she is a capable reader, that person will persist in reading difficult text and exert effort to resolve conflicts and to integrate text with prior knowledge. Becoming an excellent, active reader involves connecting motivational processes with cognitive and language processes
in reading (Guthrie & Wigfield, 2000).

Engagement strategies encourage students to pose and solve problems about text events, invite students to investigate, to dig deeper into the text’s meaning and to ask open-ended questions. Creating a classroom culture that supports and nurtures children to be highly motivated is a goal for educators. The results of a national survey conducted by the National Reading Research Center among teachers showed that accomplishing this goal is of great interest to teachers (O’Flahavan, Gambrell, Guthier, Stal, & Alvermann, 1992). In this national survey, creating interest in reading was seen as the top priority for educators. Other topics related to reading motivation that were viewed as high priorities included: increasing the amount and breadth of children's reading; developing intrinsic desire for reading; and exploring the roles that teachers, peers, and parents play in increasing children's motivation to read; and developing instructional strategies that contribute to reading motivation.

Understanding how motivation can be fostered and the reading interventions that contribute to motivation to read is extremely important. Research shows that children who are motivated and who spend more time reading are better readers (Anderson, Wilson, & Fielding, 1988; Morrow, 1992). Gaining a comprehensive understanding of how motivation to read is developed and nurtured is essential. This research project posit the reading intervention repeated reading is an instructional intervention that will assist in the overall reading development and motivation to read for the upper elementary and middle school reader.

Repeated Reading

Samuels (1979) put the theory of automatic information processing and reading to the test. Samuels hypothesized that automaticity for readers, as for athletes and musicians, is
developed through repeated practice. He asked students to read short passages of approximately 250 words in length, repeatedly, until they achieved a reading speed of 95 words per minute. Samuels found that this method of repeated reading led to improvement in passage reading across a variety of dimensions, including word decoding accuracy, reading speed, and expression. Moreover, he found that as students moved on to new texts, their initial reading of the new passages were better than their initial reading of the earlier passages, and that the number of repetitions required to achieve the criterion reading rate diminished. Samuels explained his findings in terms of automatic information processing and reading. He argued that through practiced or repeated readings of texts, readers were developing automaticity in word decoding and word processing (Samuels, 2006). Significantly, this automaticity was generalized to new passages that the student had not previously read (Rasinski, 2012). What students learned from the repeated reading of one passage partially transferred to the new passage. Several reviews of research on fluency have shown that word recognition accuracy, automaticity, comprehension, and motivation to read have been shown to improve with repeated readings (Dowhower, 1994; Kuhn & Stahl, 2003; Rasinski et al., 2009).

Cohen’s (1988) conducted a meta-analysis to ascertain essential instructional components of repeated reading and the effect of repeated reading on reading fluency and comprehension. Findings from this analysis indicated that repeated reading improved the reading fluency and comprehension of students with and without learning disabilities. Essential components of effective repeated reading instruction included (a) having students read aloud to adults; (b) having students read the passage 3 to 4 times; (c) cuing students before reading to focus on either reading for speed or reading for comprehension, or both; and (d) corrective feedback provided during or after the repeated reading. Repeated reading improves the reading fluency and
comprehension of students with and without learning disabilities, not only on the passages with which students previously used the strategy, but also with new passages. Several instructional components are found to be essential to the success of repeated reading (Cohen, 1988). First, adult-led repeated reading leads to significantly greater gains than do interventions led by peers. This finding indicates that adults, rather than peers, should implement repeated reading. Corrective feedback and opportunities for the student to reread the passage until a set criterion is reached also have a significant positive impact on students’ progress during repeated reading. Dowhower, (1987) found significant success with the intervention when the student read passages at the rate of at least 85 to 100 words per minute. When students were cued to focus on either speed or comprehension, before they begin reading, their rates in both areas increase. The greatest improvements are seen when students are cued to focus on comprehension alone or on both fluency and comprehension together (Cohen, 1988).

Additional evidence of the benefits of repeated reading can be found in the studies conducted by Chomsky (1976). Chomsky tested a similar method of repeated reading. Chomsky asked struggling readers to repeatedly read text while simultaneously listening to audiotape versions of the same texts being read fluently. Chomsky reported remarkable positive results from students on texts they had practiced, on new texts they had never read before, and in students’ attitude toward reading and higher confidence in their reading ability. These positive results toward reading could have had an effect on students’ motivation to read. Schreiber (1980, 1991) and Schreiber and Read (1980) offered an alternative explanation for the positive results found from repeat reading strategies. He hypothesized that, through practice, students developed a greater awareness of the prosodic features of oral reading and speech. Through repeated readings, students were learning to imbed the expressive and intonation features of oral speech in
their reading that help to mark phrase boundaries, within and between sentences, and to impact meaning. Dysfluent readers tend to read in a slow, word-by-word manner that does not lend itself well to prosodic and syntactically appropriate phrased reading that carries meaning. Through repeated readings, even dysfluent readers are better able to capture the prosodic and syntactic essence of the text, thus improving the surface level processing of the passage as well as text comprehension. Repeat reading is a foundational strategy in any fluency program (Schreiber 1980, 1991; Schreiber & Read, 1980). Kuhn and Stahl (2000) posit that both automatic processing of the surface-level feature of text and the ability to attend to the prosodic and syntactic feature of text while reading are compelling and significant factors in fluency development. They are central elements in reading fluency. Understanding the seminal research regarding the effects of repeated reading is essential in determining whether it is an appropriate intervention for the struggling adolescent reader.

**Conclusion**

The National Reading Panel (2000) has defined fluency as "reading text with speed, accuracy, and proper expression and comprehension" (p. 81). Proficient readers can be considered “fluent readers” because they approach the printed page with ease, understanding and a reading purpose. They achieve their reading goals with a variety of reading strategies. Typically, proficient fluent readers are engaged, motivated readers- that is, they consider reading as a means to an end, i.e., reading for information, to achieve goals, to excel academically, or to enjoy leisure time.

The National Reading Panel (2000) report, as well as other seminal reading researchers (i.e., Kuhn, Schwanenflugel, & Meisinger, 2010; Rasinski 2005; Samuels & Farstup, 2006) has re-established reading fluency and oral reading as key components in reading curricula. These reviews indicate that significant empirical evidence exists which identifies fluency as a critical
skill to student success in learning to read. However, research has focused on fluency at the elementary level (Chard, et al. 2009; Rasinski & Padak, 2005; Samuels, 2006) and limited research has been conducted with a focus on the fluency needs of the struggling upper elementary and middle school reader (Rasinski & Padak, 2005). This research project has been designed to help to fill this gap and to aid in determining instructional strategies that will assist the struggling upper elementary and middle school readers to become more proficient readers.
This study employed a quasi-experimental design to investigate the effects of the intervention of repeated reading on accuracy, rate, prosody, comprehension and motivation to read among 5th and 6th grade students. This chapter discusses the methodology, detailing the population, sampling, data collection methods, instruments, and procedures for the intervention. Steps in data analysis, validity, reliability, generalizability and protection of human subjects are discussed.

**Research Design**

This quantitative research study employed a quasi-experimental control group design to investigate the effectiveness of an intervention of repeated reading on 5th and 6th grade students’ reading accuracy, rate, prosody, comprehension, and their motivation to read. A quasi-experimental design establishes possible cause and effect relationships between independent and dependent variables (Creswell, 2008). This relationship can be determined when all other variables are controlled and the independent variable influences the dependent variable in some way (Creswell, 2012). It can then be said that the independent variable caused, or probably caused, the dependent variable to occur (Creswell, 2012).

The quasi-experimental research design used in this study tested the effect that the repeated reading intervention (the independent variable) has on accuracy, rate, prosody, comprehension, and motivation to read (the dependent variables). Despite (1) the use of treatment and comparison groups, (2) researcher manipulation of the independent variable, (3) controls for possible extraneous variables, and (4) random assignment of full intact classes of students to the treatment or comparison group, random assignment of students to these classes
was not possible because the students class composition predated the study (Creswell, 2012). In short, the grouping patterns prevented student assignment into English Language Arts classes from being random and the research design from being true experimental. Manipulation of student scheduling in order to achieve randomization for the sake of the study would have been unethical because it would have privileged the needs of the researcher over the study (Creswell, 2012). Thus, a quasi-experimental design was used.

All groups were given a pretest to establish baseline for students’ accuracy, rate, prosody, comprehension, and motivation to read. One 5th grade class and one 6th grade class was randomly assigned to the treatment group. One 5th grade and one 6th grade class was randomly assigned to the control group. The treatment group received the intervention of repeated reading for twelve weeks. At the end of the twelve-week intervention, both groups took a posttest on accuracy, rate, prosody, comprehension, and motivation to read.

**Sampling**

The study site is a small kindergarten through 8th grade elementary school. This school is located in a rural island town off the coast of Massachusetts. The town’s population is 3,212. According to the Massachusetts Department of Early and Secondary Education, the school is a Level One school. The school population is 411 students: 3.4% African American, 1.5% Asian, 14.4% Hispanic, 2.9% Native American and 68.6% Caucasian. Low-income students comprise 22.7% of the population and 23.4% of the students are special education students. There are 197 male and 214 female students. The target population consisted of twenty-four 5th grade students and twenty-six 6th grades students. Of the 5th grade students, 53% receive free or reduced cost lunches, 43% receive special education services, 9% receive Title One reading support services and 16% receive English Language Learner (ELL) support. Hispanic students comprise 23% of
the test group, 60% are white and 17% are African American. Of the 6th grade students 20% receive free or reduced lunch, 25% receive special education services, 26% receive Title One reading support, and 16% receive ELL support. The group includes 77% students who are white, 13% who are Hispanic and 10% who are African American.

Convenience sampling was employed as the sampling methodology. This population was chosen because the researcher is a Reading Specialist who is assigned to support these grades. As previously mentioned, grouping patterns prevented student assignment into random groups and the research design from being true experimental. Limitations are inherent in using convenient sampling because the researcher cannot state with confidence that the findings can be generalized or are representative of the population. (Creswell, 2012; Fraenkel, Wallen, & Hyun, 2012). However, this type of sampling can provide useful and important information for answering problems of practice (Creswell, 2012; Fraenkel, Wallen, & Hyun, 2012).

**Ethical Considerations**

When developing a research project, it is essential that the researcher carry out the research with respect and concern for the dignity and welfare of the research participants (Fraenkel, Wallen, & Hyun, 2012). This researcher was cognizant of federal and state regulations and professional standards governing the conduct of research with human participants (Creswell, 2012). In compliance with the Institutional Review Board (IRB) at Northeastern University, permission for conducting this research project was requested from the IRB. The application for this research project contained a full description of the project, its significance, methods and research design.

To ensure confidentiality of the research data and that the anonymity of the participants was protected, all data collected was numerically coded. All research data was securely stored in
a locked filing cabinet in the researcher's office. Participants were informed that any and all information obtained during the study would not be released to outside individuals other than the professional community, and that this information is completely confidential.

**Instruments**

The **Curriculum Based Measure of Oral Reading Fluency (CBM-ORF)**. Prior to the intervention of repeated reading, assessments were administered to measure accuracy, rate, prosody, comprehension, and motivation to read. The Curriculum Based Measure of Oral Reading Fluency (CBM-ORF) was given to assess accuracy and rate. The CBM-ORF has typically been used as a means of formative evaluation for purposes of determining eligibility for special education. CBM-ORF provides a common measurement process that can be applied to assess normal progress through a curriculum and to substantiate that the child’s performance is discrepant from his or her peers who have had the same educational opportunities (Ardoin, Witt, & Suldo, 2004). The Curriculum-Based Measure-Oral Reading Fluency is an effective instrument in determining the oral reading fluency scores of students. The CBM-ORF is a standardized and systematic method of formative assessment that measures rate (Fuchs, Fuchs, & Maxwell, 1988). Students are instructed to read a grade level passage while the test administrator follows along. The test administrator marks as incorrect any decoding error the student makes while reading. The student reads for one minute and the test administrator calculates the number of words read, minus any errors made. Rate is represented as words correct per minute (WCPM).

The CBM-ORF is used for the assessment of basic reading skill development and reading comprehension. Fuchs, Fuchs and Maxwell (1988) showed that CBM-ORF possesses strong validity as a measure of reading. The authors examined the correlations of non-commercial measures of reading (e.g., simple question answering, recall procedures, cloze
techniques and oral passage reading) with commercially available norm-referenced reading measures, such as Word Study Skills and Reading Comprehension subtests of the Stanford Achievement Test. Their results showed that CBM- ORF surpassed all of the sampled measures in terms of criterion-related validity. Further, the average number of words read correctly per minute correlated with each of the Stanford Achievement Tests subtest, at an average of .89.

**The Fountas & Pinnell Benchmark Assessment System.** The Fountas & Pinnell Benchmark Assessment System was used to determine the independent reading levels of the students. The Benchmark Assessment System is a formative reading assessment used in grades K-8, which measures decoding, fluency, vocabulary, and comprehension skills. The assessment is a tool for teachers and literacy specialists to use in determining students’ independent, developmental reading levels for the purpose of informing instruction and documenting reading progress. A total of 497 students were included in the field-testing of the Fountas & Pinnell Benchmark Assessment System. Students from 22 different schools participated in the field-testing. School sites from which the students were drawn were socioeconomically, ethnically, and geographically diverse. Test-retest reliability scores for the assessment was .97. In order to test validity, the Fountas & Pinnell Benchmark Assessment System was compared to the Degree of Power (DRP), a norm-referenced assessment made up of nonfiction text passages formatted using a cloze procedure. A moderate correlation of .44 was found. Additionally, validity was tested using the Slosson Oral Reading Test-Revised (SORT-R3). A moderate correlation of .60 was found. The Fountas & Pinnell Benchmark Assessment System was used to determine the accuracy levels of the participants.

**Gates-MacGinitie Reading Test (GMRT).** To measure comprehension, the Gates-
MacGinitie Reading Test (GMRT) was administered. The GMRT was designed to provide a general assessment of reading achievement in grades 3 through 10/12. Each level consists of a Vocabulary Test and a Comprehension Test. The GMRT is a norm reference test. The norming sample for this test consisted of 77,413 students from diverse socioeconomic, race/ethnic and geographic backgrounds. 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 which they 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 to draw conclusions. The comprehension tests also measure the ability to determine the meaning of words in an authentic text context. Reliability scores for vocabulary were .91 and .92 for comprehension. The test gained a total reliability score of .95 (Morsy, Kieffer & Snow, 2010). Validity (criterion-related) correlation between the GMRT and the California Achievement Test vocabulary subtest was $r = .84$ and $r = .81$ for the comprehension subtest. The score for the entire test was $r = .87$.

**The Motivation To Read Profile (MTRP).** The Motivation To Read Profile (MTRP) was given to measure students’ motivation to read. The MTRP consists of two instruments: the Reading Survey and the Conversational Interview. The Reading Survey is a self-reporting and group administered instrument, and the Conversational Interview is designed for individual administration. The Reading Survey consists of 20 items and uses a 4-point response scale. The survey assesses two specific dimensions of reading motivation: self-concept as a reader (10 items) and value of reading (10 items). The items that focus on self-concept as a reader are designed to elicit information about students’ self-perception competence in reading and self-
perceived performance relative to peers. The value of reading items are designed to elicit information about the value that students place on reading tasks and activities in terms of frequency of engagement and reading-related activities.

The Reading Survey was field tested by their developers to gain information about the validity and reliability of the MTRP. The MTRP was administered in the fall and spring to 330 third and fifth grade students in 27 classrooms in 4 schools from 2 districts in an eastern U.S. state. To determine whether the traits measured by the Reading Survey (Self-Concept as a Reader and Value of Reading) corresponded to the two subscales, factor analyses were conducted using the unweighted least square method and a varimax rotation. Only items that loaded cleanly on the two traits were included in the final instrument. To assess the internal consistency of the Reading Survey, Cronbach’s alpha was calculated, which revealed a moderately high reliability for both subscales (self-concept = .75; value = .82). In addition, pre and posttest reliability coefficients were calculated for the subscales (self-concept = .68; value = .70), which confirmed the moderate reliability of the instrument.

The Multidimensional Fluency Scale (MFS). The Multidimensional Fluency Scale (MFS) was administered to measure prosody. The MFS is a rubric (1-4) that rates a reader’s fluency in the areas of expression and volume, phrasing, smoothness, and pace. The rubric ranges from well-phrased, expressive reading at one end, to one and two word-by-word monotonic reading at the other. Possible scores range from 4-16. Generally, scores below 8 indicate that fluency may be a concern. Scores of 8 or above indicate that the student is making good progress in fluency. In a study conducted by Rasinski (1985) using this rubric, raters listened to and rated recordings of third and fifth grade students as they read. Raters did not have a copy of the passage that students read, and to make the task as efficient as possible,
Raters were asked to listen to a reading for no more than 30 seconds. This instrument was highly reliable (test-retest reliability = .90) and was strongly associated with students’ performance on standardized tests for reading proficiency. A study conducted by Pinnell (1995) found that students’ oral reading performances were strongly associated with their performance on the silent reading comprehension test that was part of the National Assessment of Educational Progress (Rasinski, 2009). This study suggested that rating students for the level of expressive or prosodic reading is a reliable and valid way for assessing the prosodic reading component of fluency and for assessing overall reading performance. Interpretation and evaluation of prosody is complex because it is more subjective than measurement of accuracy and rate. Therefore, to ensure validity of the scoring rubric, two examiners were used to measure student prosody. Each student measure was compared. If there was a discrepancy in scores, a mean value of scores was obtained.

**Procedures**

The initial step in the data collection process for this investigation was to request approval from the district and building administration in order to access and use data for the purpose of this research. Then, a consent form, which fully explained this research study and the procedures to be used in data collection, was sent to the parents of students who were potential participants in this research. All consent forms were provided in English and in the native language of the participants. All data collection was done at the research site by the researcher and the research assistant. All identifiers (i.e. first and last names of the students and secure student identifiers) were deleted to ensure anonymity and confidentiality.

Following receipt of signed consent forms for student participation from parents or guardians, the independent reading levels and accuracy rates of all participants were
obtained, using the Fountas & Pinnell Benchmark Assessment System. Next, students were
given the pre-intervention assessment of reading comprehension, using the Gates-MacGinitie
Reading Tests. This test was group administered by the researcher. The Motivation to Read
Profile was then group administered by the researcher. Next, The Multidimensional Fluency
Scale (MFS) was individually administered to measure prosody. Students were asked to read
a passage of between 250-400 words for two minutes. The passages selected were consistent
with the individual student’s independent reading level. The reading passages were obtained
from the recommended leveled list from The Fountas & Pinnell Benchmark Assessment
System. The students read the passage for two minutes as the researcher listened to and
recorded the reading. The researcher scored student’s prosodic feature of oral reading using
the MFS rubric. Next, a second scorer, who had been trained in use of the MFS, listened to
student’s oral reading of the text and assessed the student’s prosody. The scores from both
assessors were compared. If there was a discrepancy in the scores, the researchers listened
again, individually, to the recording of the student’s oral reading and rescored the reading.
The researchers then compared scores again. If a discrepancy remained, a mean score was
calculated.

The subjects were then given the Curriculum–Based Measurement of Oral Reading
Fluency (CBM-ORF) to determine a baseline for rate. The CBM-ORF was administered
individually. For each reading passage, the student read from a “student copy” that contains a
grade level passage. The examiner scored the student on an “examiner copy.” The examiner
copy contains the same reading passage but also has a cumulative count of the number of
words for each line along the right-hand side of the page. The number on the teacher copy
allows for quick calculation of the total number of words a student reads in one minute. The
examiner marked each student error with a slash (/). At the end of one minute, the last word read is marked with a bracket (}). If a student skipped an entire line in a reading passage, a straight line was drawn through the skipped line. When scoring CBM-ORF reading probes, the examiner calculates the total number of words read, minus any errors made. This calculation becomes the student’s automaticity score. Rate is represented as words correct per minute (WCPM).

Miscue calculations are made when scoring the CBM-ORF. Repetitions (word said over again), self-corrections (words misread, but corrected within three seconds), insertions (words added to the passage), and dialectical differences (variations in pronunciation that conform to local language norms) are all scored as correct. Mispronunciations, word substitutions, omitted words, hesitations (words not pronounced within three seconds), and reversals (two or more words transposed) are all scored as errors. Numbers are counted as words and must be read correctly within the context of the passage. For hyphenated words, each morpheme separated by a hyphen is counted as a word if it can otherwise stand alone. Abbreviations count as words and must be read correctly within the context of the sentence. If a student skips several connected words or an entire line of the reading passage, the omission is calculated as one error. The examiner calculates the number of words read, minus any errors made. This calculation determines the student’s oral reading rate and will be recorded as words correct per minute (Fuchs, Fuchs, & Maxwell, 1988).

Once the baseline condition was established, the intervention of repeated reading was implemented for a period of twelve weeks. One 5th and one 6th grade class was randomly assigned to the treatment group, and one 5th grade and one 6th grade class was randomly assigned to the control group. The treatment group received the intervention of repeated reading for
twelve weeks. The control group did not receive the intervention. At the end of the twelve-week intervention period, both groups took posttests on accuracy, rate, prosody, comprehension, and motivation to read.

The repeated reading process requires students to orally read a passage of 250 to 400 words at least four times within a one-week period. The students must read the passage until they have scored a 95 CWPM rate. During the first oral reading, which occurred on Mondays, the students were assessed by the researcher or research assistants. The researcher or assistants listened to student’s oral reading while guiding students through the passage. Error corrections and performance feedback was given. Performance feedback focused on the prosody concerns of the oral reading, as well as its accuracy. Next, students independently practiced reading the passage to him or herself, as well as to another student. The repeated reading practice took place for ten minutes a day, five days a week. On Fridays, the students reread the passage to the researcher or research assistants while the researcher or assistants calculated errors and gave feedback on performance. The performance feedback provided students with an opportunity to gain insight into their accuracy, rate, and prosody. Lists of words pronounced inaccurately were given to students so they could improve their oral reading of the passage. This intervention strategy continued for twelve weeks. The passages that the students read came from their grade level texts. These passages included: poetry, Readers Theater, informational text and narratives.

In order to further ensure internal validity, the researcher was certain that repeated reading was the only intervention introduced during the intervention period. To control for implementation effect threats, the research assistants assisted in the implementation and performance feedback of the intervention.
Two research assistants were asked to participate in the research project. Both research assistants were ELA teachers familiar with the intervention of repeated reading. Prior to the implementation of repeated reading, the research assistants observed the researcher who modeled the implementation of repeated reading and the performance feedback that followed. The research assistants participated in three observation sessions, each lasting one hour. After the observation sessions the research assistants were given an implementation checklist to follow.

The intervention of repeated reading took place during the students’ English Language Arts (ELA) class. Both the control group and the treatment group participated in ELA instruction five times a week in 80-minute periods. During this time, both groups received instruction and practice centering on independent reading, guided reading, literature discussion, word recognition and analysis and writing. However, for the first 10 minutes of the daily ELA period, the treatment group was engaged in the intervention of repeated reading and the control group was engaged in independent reading. See Appendix C for the implementation checklist for repeated reading.

After the intervention a posttest of the GMRT test was administered to determine if the intervention of repeated reading had an effect on reading comprehension. Additionally, a posttest of the MFS was administered to see if the intervention of repeated reading had an effect on students’ prosody. A posttest of CBM-ORF was given to measure rate. A posttest of the Fountas and Pinnell Benchmark assessment was given to assess accuracy and a posttest of the MTRP was given to measure motivation to read.
Fidelity of Implementation

Following the standards of Johnson, Mellard, Fuchs, and McKnight (2006) in order to ensure fidelity of implementation to the repeat reading intervention, the researcher minimized the complexity of each of the interventions by creating a checklist similar to the procedure described above (see Appendix C). The researcher also provided all resources and materials necessary for the lessons. Finally, the researcher watched the first two lessons of both research assistants involved in the intervention and compared their procedures with those on the checklist. Both teachers implemented the intervention with a similar style and fidelity to the checklist. As mentioned, both research assistants were ELA teachers who engaged in training of the instructional model during three separate sessions that lasted for one hour. The researcher delivered this instruction and a procedural checklist was given to the research assistants.

Possible extraneous variables

Fraenkel et al. (2012) and Gall et al. (1996) provide a combined comprehensive list of 12 potential extraneous variables. These extraneous variables are: maturation, testing threats, instrument decay, location, history, data-collector characteristics, implementation variability, experimental treatment diffusion, resentful demoralization of the control group, compensatory rivalry by the control group, and compensatory equalization of treatments.

By employing a quasi-experimental design where (1) the same three teachers implemented the repeated reading intervention, (2) the sample was demographically similar to the population, (3) a pretest and posttest was used, (4) the pretests and posttests were intermixed and scored at the end of the study, and (5) the statistical technique for analysis minimized the effects of preexisting differences in accuracy, rate, prosody, comprehension, and motivation to read, the design and statistical methodology provided some controls for maturation, testing
threats, instrument decay, and regression (Fraenkel et al., 2012; Gall et al., 1996). Location, history, data-collector characteristics, and implementation variability could have posed serious threats to the study. As such, they are addressed below, in addition to experimental treatment diffusion, resentful demoralization of the control group, compensatory rivalry by the control group, and compensatory equalization of treatments are discussed.

To control for the validity threat associated with maturation the researcher used the same pretest and posttest. This provided for the greatest likelihood, under the conditions of the study, for maturation effects to be spread evenly across the treatment and control groups. Testing threats posed relatively little challenge to this study due to the similar goals of both the comparison and the treatment groups. Students were told that the twelve-week intervention focused on increasing their overall reading achievement, and that they had the opportunity to take the same tests in both the treatment and comparison groups; therefore, any gain that was shown simply because of students’ experience with the pretest was likely to occur across both the treatment and comparison groups.

Having the author and the trained research assistant score all pretests and posttests controlled for the validity threat of instrument decay. Location threat was also minimized in this particular design because the same classrooms and teachers were used for the treatment and control groups.

Threats to internal validity due to data-collector characteristics and data-collector bias were minimized in this study by establishing clear protocols for testing and using the same teachers to implement the tests across both phases of the study. As mentioned above, assessing fidelity to the repeated reading intervention through the use of checklists controlled implementation variability.
Experimental treatment diffusion, where the comparison group wishes to be part of the treatment group, was minimized because the treatment group and the control group were given the same materials and lesson format, however the treatment group received the intervention in a separate classroom. Additionally, the students were asked not to share the information regarding the intervention. Because of this consistency, resentful demoralization of the control group was less likely.

Compensatory rivalry by the control group, in which the control group competes with the treatment group, was an unlikely threat because both groups were engaged with the same type of units of study. There was no outstanding reason to believe that one group would have a greater desire to compete than is normally the case across classes. In addition, compensatory equalization of treatments, where the treatment group received goods or services not provided to the comparison group, was not a threat because all classes and all groups received the same materials and resources.

Finally, history and differential selection posed potential problems because the researcher could not be assured that the treatment and comparison groups would be similar in all respects except for the intervention they received. It was likely that the demographic information of the sample would be similar to that of the population, but because students’ placement into their classes could not be controlled, this fact could not be established until students entered their classes. At that point, effects due to history and differential selection could not be reported. See Chapters 4 and 5 for further discussion.

Data Analysis

Preparation of the Data Fill

Students who took the pre and posttests of the Gates-MacGinitie Reading Test (GMRT),
the Multidimensional Fluency Scale (MFS), the Motivation to Read Profile (MRP), the Fountas and Pinnell Benchmark assessment, and the Curriculum Based Measure of Oral Reading Fluency (CBM-ORF) were assigned an individual identification number to record on the exams rather than using their names. Using SPSS, IBM’s statistical analysis software, the researcher input grade and demographic information associated with each student’s number and then eliminated the student’s name from the file. The researcher named these variables, classified them by type, and labeled the level of measurement. After students completed the pre and posttests, the researcher scored the tests and input the scores for each of the participants in the study.

In order to detect and correct, or to remove corrupt or inaccurate data from the data set, cleaning was conducted after the data had been entered into SPSS. The researcher verified that the data was correct and that the data possessed logical ranges for each variable, ensuring, for example, that the inputs for the gender variable had only two values: male and female; that the measure for the Multidimensional Fluency Scale ranged from 1-16 (as defined by the rubric), and that the comprehension scores from the Gates-MacGinitie Reading test ranged from 2-39 (as defined by the assessment scoring index). Data was analyzed to determine whether any outliers were present. An outlier is a data point that is far outside the norm for the variable or is farther away from the sample mean than what is deemed reasonable. Outlier points can, therefore, indicate faulty data, erroneous procedures, or areas where a certain theory might not be valid. Outliers increase error rates and decrease statistical power (Fraenkel et al., 2011). In addition, if the outliers are non-randomly distributed, they decrease the normal distribution of data-increasing the likelihood of Type I and Type II errors. Outliers can distort parameter and statistical estimates, regardless of whether the researcher is using parametric or nonparametric testing (Osborne & Overbay, 2008). However, outliers may provide important information to the
researcher and do not necessarily need to be eliminated. Osborne and Overbay (2008) provide six possible causes of outliers: data error, intentional or motivated misreporting, sample error, standardization failure, faulty distributional assumptions, and legitimate cases sampled from the correct population that are worthy of further inquiry.

As previously mentioned, a histogram was used to assess the normality of the data collected for the dependent variables. Once the assumption of normality was met, a parametric test (ANCOVA) was used to test the hypothesis. Histograms were used to determine how many participants had earned each score on the assessments. Given that the data for the independent variables were continuous, the data is normally distributed; means were used as a measure of central tendency. Additionally, standard deviation and variance were used as measures of spread.

**Choice of Statistical Techniques**

Given that: (a) the research design was quasi-experimental because the groups of participants were preexisting (5th and 6th grade ELA classes); (b) random assignment of subjects into experimental and comparison groups was impractical and unethical, and (c) that the dependent variables are continuous (accuracy, rate, prosody, comprehension, and motivation to read), one-way ANCOVA was used as a statistical method in order to control for pretest scores as a covariate. Before using the one-way ANCOVA assumption testing took place to make sure that the data could be analyzed using an ANCOVA.

Using one-way ANCOVA requires that the size of the treatment and comparison groups be approximately equal. There also needs to be an absence of outliers (Tabachnick & Fidell, 2007). Outliers are single data points within data sets that do not follow the usual pattern. Outliers can have a negative effect on the one-way ANCOVA, reducing the accuracy of results (Mayers, 2013). Additionally, in order to use ANCOVA, the covariate and the dependent
variables should be normally distributed across both groups of the independent variable (Mayers, 2013). Also, there must be a reasonable correlation between the covariates and the dependent variables. The Pearson’s correlation coefficient must be between $r = .30$ and $r = .90$. If there is no correlation between the covariate and the dependent variables, the covariate cannot be included in the statistical analysis and the ANCOVA cannot be used (Mayers, 2013). Further, a linearity assumption must be met. In statistical analysis, linear regression is an approach for modeling the relationship between a scalar dependent variable and one or more independent or explanatory variables. These linearity tests assess the relationship between the dependent variables (posttest scores) and its covariate (pretest scores). Linear regression slopes should not display a curvilinear relationship between the dependent variable and the covariate (Mayers, 2013).

Finally, the use of ANCOVA requires homogeneity of variance to be shown in homogeneity of regression slope. Homogeneity of regression slope suggests that there is not a different dependent variable/covariate slope in some cells of the design and that there is no interaction between the independent variable and the covariate (Tabachnick & Fidell, 2007). The presence of interaction effects between the independent variable and the covariate suggests that the correlation or relationship between the covariate and the dependent variable is different among different levels of the independent variable; therefore ANCOVA cannot be used (Tabachnick & Fidell, 2007). If the interaction is significant, i.e., $p<.05$, the assumption is violated. All of the above mentioned assumption tests will be checked and reported in Chapter 4.

A one-way ANCOVA is used to explore the impact of covariates on a single outcome. With ANCOVA, partial eta squared is often used as a measure of effect size with designs that have non-independent cells. For example, in this study the students who did the pretest and the posttest ($N=50$) were different from each other (between subjects effect), but every student did
take both tests (within subjects effect) where the pretest score was included as covariate. The partial eta square statistic approximates the percentage of variability in accuracy, rate, prosody, comprehension, and motivation to read score results that can be accounted for by the independent variable (repeated reading) while controlling for the covariate (Tabachnick & Fidell, 2007).

**Threats to Validity and Reliability**

**Validity**

Internal validity is the extent to which it is possible to say that no other variables produced the result other than the variable being study. Internal validity refers to the extent to which extraneous variables have been controlled by the researcher, so an observed effect can be said to be attributed to the treatment variable. When a researcher can confidently attribute the observed changes or differences in the dependent variable to the independent variable, then the causal inference is said to be internally valid (Muijs, 2011). As discussed in the data collection section, the possible threats to internal validity were addressed. These include: establishing a specific baseline that helped to minimize the internal validity threat of condition length, and the assistance of research assistants in the implementation and performance feedback of the intervention to control for implementation effect threats. In order to further insure internal validity the researcher made sure that repeated reading was the only intervention introduced during the intervention period. In order to limit the internal validity threat of data-collector bias and data collection characteristics, the researcher had research assistants who were trained in administering all assessments (Fraenkel et al., 2011).

In order to ensure fidelity of implementation in the intervention procedures, the researcher minimized the complexity of the intervention by creating a checklist similar to the
procedures described above. The researcher also provided all resources and materials necessary for the lessons.

Additionally, the internal validity threat of mortality was minimal for this study. Mortality threat is based on the assumption that the subjects who were “lost” to the study, for any reason, may be in some way different from those who remained in the study and that the absence of the “lost” category may have had an effect on the study results (Fraenkel et al., 2011). Because of the relatively short duration of the study and the fact that the intervention and data collection occurred during the participants’ regularly scheduled school day, mortality was a minimal threat to the study.

Reliability

Reliability refers to the extent to which an experiment, test or measuring procedure yields the same results in repeated trials (Fraenkel et al., 2011). As discussed in the data collection section, the reliability of the CBM-ORF, the Multidimensional Fluency Scale, the Gates-MacGinitie Reading Test and the Motivation to Read Profile have been well established. Additionally, for this study, assurance of reliability was established by standardizing the procedure by which the researcher and research assistant implemented the intervention. The researcher addressed standardized implementation by giving the research assistants a scripted message that detailed the procedures to be followed when administering an assessment. This script was read to the participants prior to administering the assessments.

Regarding interrater reliability, the researcher and the research assistants randomly choose a participant’s recorded oral reading to score on the Multidimensional Fluency Scale. The scores of the recorded oral reading were compared with the original reading of the text. If any inconsistency was found between them, the mean of the two scores was used. When looking at
the CBM-ORF, reliability of the Interrater was addressed by requiring both the researcher and the research assistants to engage in a tutorial that focused on the procedures used to implement the CBM-ORF. Additionally, the participants were randomly assigned to be assessed by the researcher or by the research assistants, and this assignment changed each week throughout the study.

**Generalizability**

Generalizability (or external validity) is “the extent to which the findings of an experiment can be applied to individuals and settings beyond those that were studied” (Gall et al., 1996, p. 473). Both population and ecological validity will be addressed in this section.

**Population Validity**

Population validity provides assurance of the degree to which a researcher can generalize from the sample used in a study to a larger population (Gall et al., 1996). In the present study, the initial sample size constituted more than 56% of the target population of 5th and 6th graders and was composed of approximately equal numbers of students in both grades. Therefore, it was reasonable to assume that findings from the study would be generalizable to the experimentally accessible population—namely, other students in the school who are in 5th and 6th grade who are not in special education or English as a second language programs (Gall et al., 1996).

**Ecological Validity**

Ecological validity refers to the degree to which “the results of an experiment can be generalized from the set of environmental conditions created by the researcher to different environmental conditions” (Gall et al., 1996, p. 475). A study has high ecological validity when the results can be obtained in a variety of environments by a variety of researchers. This requires an explicit description of the experimental treatment so that the study can be replicated. For a
detailed description, see the subsection Procedures in the Data Collection section of this chapter and the checklist located in Appendix C.

In the design, the Hawthorne effect was minimized because all the teachers and students were participating equally in the study, each receiving the same curriculum and resources. Novelty and disruption effects also needed to be minimized. These effects provided a threat to the ecological validity of this study because multiple teachers were involved, and it was impossible to assess whether the treatments would be novel or disruptive in each classroom. In addition, because the treatment length was relatively short, as compared to a full school year, the results of the study may not be generalizable to consistent use throughout the year. Concerns about experimenter effects were relatively low. Each teacher implemented the intervention repeated reading in a similar fashion while utilizing the procedural checklist.

The pretest used in the study may have posed a threat to ecological validity by sensitizing students to the elements of the study (Gall et al., 1996). The threat was minimized due to the normal practice of assessing students’ developmental reading achievement throughout the school year. In addition, all students across both treatments should have been affected equally by the pretest.

Because the posttests also assessed students' developmental reading achievement, and all students across all treatments, it was unlikely that the posttest served as a unique learning experience, in and of itself, that would bias the study. History and treatment effects may have interacted, creating unique conditions surrounding the study that made the effectiveness of the intervention more likely; however, given that reading interventions have been in place in the school for a number of years, it is unlikely that the repeated reading intervention being used in the study was seen as particularly innovative.
Finally, the time of measurement and treatment effects may have interacted in such a way that the effects of any of the treatments may have deteriorated over time. In other words, results on posttests that occurred immediately after the intervention may not have persisted as time passed. Long-term assessment of this potential deterioration depended heavily on the results of the initial twelve-week intervention. The potential deterioration issue is discussed further in Chapter 5.
Chapter Four

Report of Research Findings

This study was undertaken to investigate the effects of the reading intervention of repeated reading on students’ accuracy, rate, prosody, comprehension, and motivation to read among 5th and 6th grade students in a K-8 school in Massachusetts. The study employed a quasi-experimental design. This design is similar to a pretest posttest randomized experimental design except that, for practical and ethical reasons, students could not be randomly assigned to groups (Gall et al, 1996). In this study, four classes of 5th and 6th grade English Language Arts students (N=50) were given a pretest for accuracy, rate, prosody, comprehension, and motivation to read. One 5th and one 6th grade class were randomly assigned to the treatment group and one 5th and one 6th class were assigned to the comparison group. The treatment group received the reading intervention of repeated reading for ten minutes a day, five days a week, for twelve weeks. At the end of the twelve weeks, all of the students took posttests for accuracy, rate, prosody, comprehension, and motivation to read. The researcher scored all pre and posttests.

With five continuous dependent variables (accuracy, rate, prosody, comprehension, and motivation to read) and pretest scores as a covariate, ANCOVA was used (after testing necessary assumptions) to compare the adjusted means of the dependent variables. The following chapter provides a summary of the findings as they relate to the research question: What is the effect of repeated reading on 5th and 6th grade students’ accuracy, rate, prosody, comprehension, and motivation to read?
Demographics of School, Population, and Sample

The enrollment numbers for the school have been increasing slightly and the demographics of its population changing somewhat over the past few years. At the time of the study, the population of the school was 411 students, with females representing 52% of the population and males representing 48%. Students in 5th and 6th grades share a similar demographic profile to those in the entire school; however, the percent of the special education students in the 5th grade was greater than that for the school population.

<table>
<thead>
<tr>
<th>Table 1. School and Target Group Population and Sample Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole School Population</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>411</td>
</tr>
<tr>
<td>5th &amp; 6th Grade Students</td>
</tr>
<tr>
<td>In total Students</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>89</td>
</tr>
<tr>
<td>Students in the Study</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>50</td>
</tr>
</tbody>
</table>

Note. All numbers listed above are percentages except for the numbers listed under N.

Of the total school population 23% receive Special Education services and 14% receive ELL services. In the 5th grade, 43% receive Special Education services and 16% receive ELL services. Of the 6th grade students, 25% receive Special Education services and 16% receive ELL services. Although all students in both 5th and 6th grades received the reading intervention of repeated reading, the Special Education and ELL students were not involved in the data.
collection phase of this study because their scores may have skewed the results.

**Fidelity to the Implementation of Repeated Reading**

The participating teachers engaged in procedural facilitation that focused on the implementation of repeated reading and on miscue analysis of the student’s oral reading. Each teacher followed a checklist to verify fidelity to the method (Creswell, 2012). The implementation of repeated reading was initially modeled for the participating teachers. Additionally, during the initial lessons, the participating teachers were observed and critiqued by the researcher to assess fidelity. In all cases, the teachers followed the checklists precisely (see Appendix C for Checklists).

**Assumption Testing**

A series of assumptions must be met before running ANCOVA. A detailed assessment of these assumptions was performed as follows.

**Approximately equal sample sizes-- Assumption met.**

Although the original plan was to have a sample size of approximately 85 students, factors related to students as outliers, such as receiving Special Education services and ELL services, eliminated these students as part of the data collection phase of the research project, leaving 50 students involved in the study. With 26 in the treatment group and 24 in the comparison group, the sample size requirement for one-way ANCOVA was met (Tabachnick & Fidell, 2007). Given that all of the 5th and 6th grade classes at the school were involved in the study, there was no opportunity to increase sample size beyond N=50.

**Absence of outliers--Assumption met.**

Outliers are single data points within data sets that do not follow the usual pattern. Outliers can have a negative effect on the one-way ANCOVA, reducing the accuracy of results
Only sporadic outliers were found among the datasets of (1) pretest scores of motivation to read, (2) pretest scores of prosody, (3) pretest scores of comprehension, and (4) posttest scores of motivation to read. Those few outliers were excluded from the final data analysis for each research question. See Appendix B for the data set information regarding minimum, maximum, mean, and standard deviation for the covariates and dependents variables of this study.

**Normal distribution of covariate and dependent variable -- Assumption met.**

The boxplots for these data (see Figures in Appendix B) show that the covariate and the dependent variables (accuracy, rate, prosody, comprehension, and motivation to read) are approximately and normally distributed. In addition, the covariate and the dependent variables met the skewness and kurtosis criteria because all the values for these tests lie between -1 and +1 (see Tables in Appendix B). Visual and quantitative (skewness and kurtosis) methods of assessing normality were both met. Therefore, the assumption of normality has been met.

**Correlation between covariate and dependent variable -- Assumption met.**

The correlation of the covariate (pretest scores) and the dependent variable (posttest scores) for accuracy is .44, falling between the accepted values for $r$. The correlation of the covariate (pretest scores) and the dependent variable (posttest scores) for rate is .765, falling between the accepted values for $r$. The correlation of the covariate (pretest scores) and the dependent variable (posttest scores) for prosody is .347, falling between the accepted values for $r$. The correlation of the covariate (pretest scores) and the dependent variable (posttest scores) for comprehension is .746, falling between the accepted values for $r$. The correlation of the covariate (pretest scores) and the dependent variable (posttest scores) for motivation to read is .773, falling between the accepted values for $r$. Therefore, the assumption of a correlation between the
covariate and the dependent variables has been met.

**Linearity- Assumption met.**

Linear regression slopes should not display a curvilinear relationship between the dependent variables and the covariates. In the charts found in Appendix B for each dependent variable, all relationships were clearly linear; therefore linearity assumption was not violated.

**Homogeneity of regression slopes-- Assumption met.**

The p values for this data set are as follows: accuracy p = .160, rate p = .557, prosody p = .076, comprehension p = .521, motivation to read p = .533. None of the p values is < .05. There was no significant interaction between the covariate (pretest scores) and the dependent variable (posttest score), thus failing to reject the null hypothesis that there was no interaction effect. A significant interaction would have meant that the assumption had been violated, therefore the use of ANCOVA to analyze the data set would not be appropriate. However, since there is homogeneity of regression slopes, the homogeneity assumption is not violated and the assumption has been met.

**ANCOVA Analysis**

As shown above, the data for this study met all of the assumptions necessary to run an ANCOVA, including meeting all the necessary assumptions required to include pretest scores as a covariate. ANCOVA is used to explore the impact of covariates on a single outcome. With ANCOVA, partial eta squared is often used as a measure of effect size with designs that have non-independent cells.

**Hypothesis Testing**

The hypothesis for this study was: What is the effect of repeated reading on 5th and 6th
grade students’ accuracy, rate, prosody, comprehension, and motivation to read? As shown below, after including pretest scores as a covariate in the statistical test ANCOVA, a statistical significant difference $F(1,47) = 7.93$, $p = .007$ was found for accuracy between students who participated in the intervention repeated reading and students who did not receive repeated reading intervention. The effect size is $N_{p^2} = .144$, which is considered large (Muijs, 2011).

**Table 2. ANCOVA Results for the Dependent Variable Accuracy**

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>98.88</td>
<td>1.36</td>
<td>26</td>
</tr>
<tr>
<td>Control</td>
<td>98.08</td>
<td>1.55</td>
<td>24</td>
</tr>
</tbody>
</table>

**Table 3. Test of Between-Subjects Effects Dependent Variable Accuracy**

<table>
<thead>
<tr>
<th>Source</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy 1</td>
<td>1</td>
<td>9.127</td>
<td>4.59</td>
<td>.037</td>
<td>.089</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>15.767</td>
<td>7.93</td>
<td>.007</td>
<td>.114</td>
</tr>
</tbody>
</table>

A significant difference was found in rate scores $F(1,47) = 4.62$, $p = .007$ between students who participated in the intervention repeated reading and students who did not receive repeated reading intervention. The effect size was medium $N_{p^2} = .09$.

**Table 4. ANCOVA Results for the Dependent Variable Rate**

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>152.23</td>
<td>28.86</td>
<td>26</td>
</tr>
<tr>
<td>Control</td>
<td>152.62</td>
<td>29.42</td>
<td>24</td>
</tr>
</tbody>
</table>

**Table 5. Test of Between-Subjects Effects Dependent Variable Rate**

<table>
<thead>
<tr>
<th>Source</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
</table>
There was a significant difference in prosody scores $F(1,47) = 34.43$, $p=.000$ between students who participated in the intervention repeated reading and students who did not receive repeated reading intervention. The effect size was large $\eta^2_p = .423$.

**Table 6. ANCOVA Results for the Dependent Variable Prosody**

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>14.38</td>
<td>2.15</td>
<td>26</td>
</tr>
<tr>
<td>Control</td>
<td>12.12</td>
<td>2.02</td>
<td>24</td>
</tr>
</tbody>
</table>

There was no significant difference found for comprehension scores $F(1,47) =3.68$ $p= .061$ between students who participated in the intervention repeated reading and students who did not receive repeated reading intervention.

**Table 7. Test of Between-Subjects Effects Dependent Variable Prosody**

<table>
<thead>
<tr>
<th>Source</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prosody 1</td>
<td>1</td>
<td>71.43</td>
<td>24.095</td>
<td>.000</td>
<td>.339</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>102.079</td>
<td>34.43</td>
<td>.000</td>
<td>.423</td>
</tr>
</tbody>
</table>

**Table 8. ANCOVA Results for the Dependent Variable comprehension**

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>37.11</td>
<td>6.68</td>
<td>26</td>
</tr>
<tr>
<td>Control</td>
<td>36.95</td>
<td>5.75</td>
<td>24</td>
</tr>
</tbody>
</table>

**Table 9. Test of Between-Subjects Effects Dependent Variable Comprehension**
A significant difference was found in motivation to read scores $F(1,47) = 11.54, p = .001$ between students who participated in the intervention repeated reading and students who did not receive repeated reading intervention. The effect size was large, $N_{p^2} = .197$.

**Table 10. ANCOVA Results for the Dependent Variable Motivation to Read**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension1</td>
<td>1</td>
<td>1104.68</td>
<td>67.17</td>
<td>.000</td>
<td>.588</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>60.54</td>
<td>3.68</td>
<td>.061</td>
<td>.073</td>
</tr>
</tbody>
</table>

**Table 11. Test of Between-Subjects Effects Dependent Variable Motivation to Read**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation to Read1</td>
<td>1</td>
<td>1104.69</td>
<td>67.17</td>
<td>.000</td>
<td>.588</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>60.54</td>
<td>3.68</td>
<td>.061</td>
<td>.073</td>
</tr>
</tbody>
</table>

**Conclusion**

After finding seminal research supporting the use of repeated reading as a reading intervention, developing a procedural protocol for implementation, finding high interrater reliability, discovering little difference between population and sample, and meeting all assumption testing for ANCOVA, the null hypothesis was rejected, and the directional hypothesis is accepted. This study provides evidence that students who participate in the reading intervention of repeated reading have significantly higher mean scores on accuracy, rate, prosody and motivation to read than students who did not receive the intervention. There was no
significant difference found in comprehension scores.
Chapter Five

Discussion of Research Findings

This study employed a quasi-experimental design to investigate the effect of the intervention repeated reading on accuracy, rate, prosody, comprehension, and motivation to read among 5th and 6th grade English language arts students in a small K-8 school in Massachusetts. After assessing students’ accuracy, rate, prosody, comprehension, and motivation to read with a pretest, implementing the intervention repeated reading, and reassessing students’ accuracy, rate, prosody, comprehension, and motivation to read with a posttest, a one-way ANCOVA was used (after testing necessary assumptions) to compare the adjusted means of the dependent variables. The following chapter discusses the findings described in Chapter 4, considers possible explanations of the findings, discusses the implication of the findings, and suggests further research.

Results and Discussion of Research Question

Repeated reading is a reading intervention developed by Samuels (1997, 1999). Samuels asserted that automaticity could be achieved the same way a skilled musician or an athlete approaches his or her training- with repetitive practice until the skill becomes automatic. Samuels was surprised to discover that by repeating a reading passage orally, poor readers not only became faster, more accurate, and read with more expression, but they began to transfer this reading fluency to previously unread passages. Repeat reading has subsequently become a reading intervention for struggling readers in the primary grades (see Chapter 2 for a complete discussion). However, as previously stated in Chapter 1, there is limited research available that focuses on the fluency needs and interventions for the struggling upper elementary or middle
school reader. Additionally, as noted in Chapter 1, research indicates that there is little emphasis on fluency instruction beyond the primary grades. This research study attempts to fill the gap in the current literature.

This study helps to fill the gap in the literature insofar as it (1) provides a clear and straightforward description of the intervention and a rationale for using the reading intervention of repeated reading for adolescent readers, (2) uses standardized assessment measures and tools to assess students’ accuracy, rate, prosody, comprehension, and motivation to read, (3) focuses on upper elementary and middle school students.

The descriptive statistical results of the ANCOVA shows that there was a significant difference between the experimental group and the control group with regard to accuracy, rate, prosody, and motivation to read. However, there was not a statistical significance found in the results for comprehension.

**Accuracy**

One component of this research question focused on the effect that repeated reading would produce on students’ accuracy. The results of the study showed that students who participated in the reading intervention of repeated reading showed a significant increase in their accuracy compared with the students in the control group. The effect size of this increase was large. \( (M= 98.8, \ SD= 1.36, \ p= .007, \ N_{p^2}= .144) \).

Accuracy in word recognition is an important aspect of reading fluency. The increase in students’ accuracy as a result of repeated reading is consistent with Samuels’ (1999) findings that by repeating a reading passage orally a number of times, poor readers not only became faster but also more accurate. These readers began to transfer this improved reading fluency to previously unread passages (see Chapter 2). The students involved in this study were engaged in a
structured repeated reading intervention similar to the one outlined by Samuels (see Appendix A for a procedural checklist). In addition to Samuels’s procedural protocol, the participants of this study were given a miscue analysis words list after the timed reading on Mondays. This list included frequently mispronounced words. For example, during one week, a student mispronounced the word “stared” as “starred,” so this word was placed on the word list, along with about fifteen other words from all the previously analyzed oral reading passages. The student practiced the word lists for accuracy. The idea was to expose the students to the correct pronunciation of many mispronounced words in order that the correct pronunciations would become internalized, thus increasing the student’s accuracy when encountering these words in new passages. The students received the use of a word list positively.

An important aspect to the intervention that contributed to increased rate of accuracy was the opportunity for the students to read orally, one-on-one, with the researcher or research assistants. This one-on-one time was extremely valuable because it allowed the opportunity for positive corrective feedback. Kuhn and Stahl (2004), Therrien (2004), and Wexler, et al. (2010) found significant increases in students’ accuracy rates when students were provided positive corrective feedback of their oral repeated reading, were provided with a list of mispronounced words to review and focus on, and the students were exposed to a researcher who modeled a fluent reading of the passage. The findings of this study were consistent with and confirm the findings of seminal fluency intervention researchers.

Rate

Another component of the research question analyzed the effect of repeated reading on 5th and 6th grade students’ rate as measured in word correct per minute (WCPM). The results from the ANCOVA show that there was a significant difference in WCPM found between
students that received the repeated reading instructional technique and those students in the control group rate (M=152.23, SD= 28.86, F(1,47) =4.62, p= 0.07, Np²=.09). The effect size is considered medium. Reading rate includes both fluent identification of individual words and the speed and fluidity with which the reader moves through connected text. Each week, as the students practiced the oral reading of a passage, they improved in the number of WCPM they read. On Mondays, students would graph the initial reading of the text. The majority of the consecutive day repeated reading of the text resulted in an increase in WCPM. As students practiced reading a passage repeatedly, they were better able to recognize larger words and to sound them out and to guess at their identity from contextual cues. These well-practiced words were recognized automatically, with little cognitive effort. The more frequently students practiced the orally-read passages, the more words they read became increasingly automatic and produced a faster rate result. The automaticity with which a reader can recognize words is nearly as important as word reading accuracy. It is insufficient to understand the word correctly if a great deal of cognitive effort is required to do so. The effort and attention involved in phonemically decoding words, or in guessing at words from context, distracts the reader’s attention from retaining a coherent representation of the meaning of the text. The intervention had a significant effect on increasing students’ word correct per minute.

Prosody

Rasinski (2009) asserts that prosody is an essential component in reading fluency that is often overlooked in studies on fluency and fluency instruction. Prosody refers to reading with expression; it is sometimes referred to as the melodic element in reading. Many scholars have posited that a correlation exists between prosody and overall reading achievement and that repeated reading might assist in developing prosodic reading (e.g., Allington, 1983; Kuhn &
Stahl, 2000; National Reading Panel, 2000; Rasinski & Hoffman, 2003). The findings of this study confirm the results found by the above-mentioned researchers. The results of the ANCOVA (M= 14.38, SD= 2.15, F(1,47) = 34.43, p= .000 \, R^2 = .423), shows that repeated reading has a significant effect on the experimental group’s prosody.

During the study, the participants who engaged in the intervention of repeated reading clearly grew in their prosodic abilities. In the beginning of the study, when the students engaged in the first timed reading of a passage, the students’ oral reading often was observed as fast, expressionless, and monotone. As the study progressed, these participants were given specific instruction and guidance during timed reading debriefings. One of the most important messages during the debriefings was to reject the notion that good reading was fast reading. Students were continuously reminded that the goal of reading was to gain meaning from the text. After the initial timed oral reading of the passage on Mondays, the researcher modeled a prosodic reading of the passage for the students. The researcher reviewed the importance of pausing at punctuation marks, changing the tone and pitch of stressed words and phrases, and changing the tone of the reading when confronted with dialogue. The researchers discussed the ways in which appropriate phrasing and the use of contextual clues assist in reading fluently, which, in turn, affects comprehension. Repeatedly, the students were given instructions such as, “As you read, you need to find the appropriate places to pause, to add expression to your voice, and to raise or lower the tone of your voice; You want your listener to believe that you are having a conversation rather than reading a passage; Read the dialogue as if you were in a play with different characters expressing their feelings.” At other times, students were prompted to emphasize a portion of text where confusion and/or intensity were presented. With each of these instructions and debriefings, the students responded with a practiced oral reading of the text that
represented a clear improvement in the prosodic features of the passage. The students clearly enjoyed “performing” the texts for the researcher through oral reading.

As previously mentioned, prior to the instruction on the importance of prosodic reading, many students involved in the study seemed to be under the assumption that good reading was fast reading. Those students seemed to believe that a fast reading rate was the primary goal of reading. Many researchers have shared their concerns related to similar findings. Rasinski (2009) stated that many researchers in reading fluency have used reading rate as the measure of reading fluency and reading achievement (e.g., Deno, 1985; Deno, Mirkin, & Chiang, 1983, Marton; 1999). Although rate may be a measure of word recognition automatically, it does not capture the prosodic feature of reading, the component that connects comprehension to fluency.

According to some scholars (e.g., Rasinski, 2005; Samuels, 2007), there has been an over-reliance on reading rate as a definition of reading fluency, a definition which has led to the development of instructional strategies that focus almost exclusively on reading rate. This has resulted in the unfortunate consequence of developing readers who believe proficient reading is little more than reading quickly, without regard to meaning. It was clear to researchers that the students involved in this study were initially under this assumption. Although it is agreed that a slow reading rate may be an indicator of a dysfluent reader, an intense focus on fast reading rate instruction is an inappropriate interpretation of the research that shows the relationship between reading rate, prosodic reading and overall reading achievement. As this study shows, repeated reading can have a positive and significant effect on improving 5th and 6th grade students’ prosody. As prior research seems to indicate (e.g., Rasinski, 2009), this improvement could result in an improvement in overall reading achievement. Additionally, prosody has been found to have an impact on readers’ engagement and motivation to read (Morrow & Asbury, 2003).
Comprehension

Looking at the effect that repeated reading had on comprehension was another component of this study’s research question. Reading comprehension is understood to be the “process of simultaneously extracting and constructing meaning through interaction and involvement with written language. It consists of three elements: the reader, the text, and the activity or purpose for reading” (RRSG, 2002, p.11). The results of this study indicate that repeated reading did not have a significant effect on 5th and 6th grade student’s comprehension (M= 37.11, SD= 6.68, F(1,47) = 3.68, p= .061). While the effects of repeated reading were not found to be statistically significant with regard to comprehension, the data does indicate that the majority of the students who participated in the intervention did grow in reading comprehension as measured by the GMRT assessment. Of the students in the experimental group 68% scored one stanine above their pre intervention scores. Additionally, 22% of these students scored two stanines above their pre intervention scores.

One reason a significant difference in comprehension was not found may be due to the fact that the control group was engaged in independent reading or wide reading while the experimental group was engaged in the repeated reading intervention. Researchers such as Logan (1997) state that because automaticity transfers to similar reading passages, there is benefit in exposing readers to a variety of different materials. Wide reading provides opportunities for such transfer, and research conducted on students who were asked to read a wide variety of materials with adequate support indicated that their automaticity does improve. Because there is a great deal of overlap in the words encountered when students are reading material on their independent level, it seems likely that seeing words in multiple contexts improves student recognition of those words, positively effecting conceptual as well as orthographic knowledge. This knowledge
affects comprehension ability.

The comprehension results from the present study are consistent with current research that focuses on adolescent readers. There have been consistent findings that oral reading fluency is strongly related to reading comprehension in the primary grades (NRP, 2000; Hempenstall, 2009) but that this relationship is inconsistent among older students (Fuchs, Fuchs, Hosp & Jenkins, 2001). Scammacca et al. (2007) found that fluency interventions had little effect on improving reading comprehension for struggling adolescent readers. Wexler et al. (2008) concluded that repeat reading had no direct effect on comprehension abilities of older readers. Additionally, Edmonds et al. (2009) found that repeated reading using narrative text had an effect on comprehension whereas repeated reading using expository text had a moderate effect. Roberts et al. (2007) suggest that older students, unlike their younger counterparts, are required to analyze literature and comprehend expository text, rather than narrative text. Reading complex texts requires both effort and active participation. Frequently, struggling readers are neither engaged nor interested in reading for meaning if the text requires conscious and effortful energy. The results of Roberts et al. (2007) study support the results of this study. It is suggested that comprehension strategy instruction be taught concurrently with fluency interventions, which may help struggling upper elementary and middle school readers improve their reading proficiency. A follow-up study investigating the effects of teaching comprehension monitoring and strategy instruction while simultaneously focusing on repeated reading is suggested.

**Motivation to Read**

The results of the present study show that students who participated in the repeated reading intervention showed a significant improvement in motivation to read (M= 64.53, SD= 8.83, $F(1,47) = 11.54$, p= .001, $N_p^2 = .197$). Many teachers would agree that motivation is at the
heart of many of the pervasive problems faced when teaching struggling readers to improve their abilities. Finding interventions that support students’ motivation and engagement will result in more proficient readers. It was clear that the students involved in this study’s intervention became increasingly motivated and engaged. As the students became familiar with the route of the intervention (see Appendix A for the checklist), they would enter the classroom eager to obtain their timers, their progress monitor graphs and the reading passages. When the initial read was completed and corrective feedback was given, the students would graph the WCPM on their individual progress monitoring charts. As the week progressed and graphing continued, the students were able to see the clear growth in WCPM represented in the graphs. As the students received immediate feedback about their individual growth and progress, their motivation and engagement with the intervention became clear. Students would continually make statements about how much growth they had made since the prior day, how much improved their reading sounded compared with the previous readings, and how more able they were to pronounce more words accurately than they had in previous readings. These statements reflect the positive engagement and motivation the students experienced when involved in the intervention.

The results indicate that repeated reading has a significant effect on motivation to read. There is robust research on motivation to read that documents the link between motivation to read and achievement (see Chapter 2). Highly motivated readers are self-determined and generate their own reading opportunities. They want to read and choose to read for a wide range of personal reasons. Finding interventions that improve student motivation to read will create more proficient readers. Developing highly motivated readers is imperative because students who fall behind in reading tend to read less, thereby increasing the gap between them and their peers. Later, when students need to "read to learn," reading difficulty creates issues in most other
subjects. As a result, they fall further and further behind in school, dropping out at a much higher rate than their peers (Stanovich, 1999).

Implications

Implications for theory

Using the theory of automaticity (LaBerge and Samuel’s, 1974) and Chall’s developmental model of reading (1983) as theoretical frameworks, this study implemented the repeated reading instructional strategy (Samuels, 1997, 1999) to investigate whether or not repeated reading produced an effect on the overall reading achievement of 5th and 6th grade students. LaBerge and Samuel’s (1974) theory of automaticity states that readers who have not yet achieved automatic word recognition must apply a significant amount of their finite cognitive energies to consciously decode the words they encounter while reading. The cognitive attention or energy that must be applied to decoding, the lower level task of reading, reduces available cognitive energy or attention for the more important task of comprehending the text. Therefore, comprehension is negatively affected by the reader’s lack of fluency (see Chapter 2).

Chall’s seminal model of reading identifies the attainment of reading fluency as one of the earliest stages of reading achievement. Given that reading fluency deals with the surface level of text-learning to decode words in a passage accurately, effortlessly and with expression, it is appropriate to think of fluency as a goal in reading that should be mastered as early as possible (see Chapter 2). However, research evidence suggests that reading fluency is not only an issue for primary grade levels but also an important and often overlooked issue in the upper elementary and middle school levels (e.g. Rasinski, 2005; Rasinski, Rikli, & Johnson, 2009; Scammacca et al., 2007). Current research supports the notion that reading fluency or lack of reading fluency is highly correlated with improved or deficient comprehension, especially for
older students (Rasinski, Rikli, & Johnson, 2009). The ability to read fluently enables the reader to comprehend the complex texts encountered at the upper elementary and middle school levels. However, in recent times, major reviews have produced conflicting findings that show an improvement in fluency does not necessarily equate with improvement in comprehension for the upper elementary and middle school reader. The shift to deeper language comprehension, as students are presented with increasing amounts of expository texts, may be a hindrance to struggling upper elementary and middle school readers. Snowling’s (2008) research suggests that the struggling older reader may possess good phonological awareness but the reader’s language comprehension is not adequate, a deficit that influences the struggling readers passage comprehension. Similarly, Fuchs et. al., (2001) found that primary level students’ capacity to comprehend written text was highly correlated with reading fluency but that this correlation appeared to be weaker with older students. The data presented in this study seems to support the evidence gleaned from the current research, which supports the premise that the needs and reading developmental stages of the older struggling reader may be different than those of their younger counterparts. Fluency interventions are more than solely an issue for primary grades, upper elementary and middle school students will also benefit from fluency interventions that focus on comprehension strategies. Additionally, LaBerge and Samuel’s theory of automaticity needs to be regarded as more malleable when attempting to understand struggling older readers. These readers may possess appropriate accuracy and rate, yet their language comprehension may inhibit their ability to comprehend a passage. Further, these struggling readers may not have the metacognitive skills necessary to develop comprehension in more complex texts.

Implication for practice

The findings of this study are relevant to English language arts teachers and Reading
Specialists who focus on the reading needs of upper elementary and middle school students. Many upper elementary and middle schools across the country are struggling to find ways to increase the reading proficiency of their students. Statistics indicate that up to 70% of older readers require some form of remediation (Biancarosa & Snow, 2002). Increasing the fluency skills of older students is essential in helping students gain proficiency. The repeated reading instructional intervention has shown promise in increasing the reading fluency of primary grade students. However, as this study indicates, and as the results found in recent research show (e.g. Scammacca et al., 2007; Edmonds et al. 2009), there have been mixed results in the use of this strategy with older struggling readers. This study found that the repeated reading intervention had a significant positive effect on students’ accuracy, rate, prosody, and motivation to read. The need to increase these essential components of reading fluency is critical. Teachers who follow the checklist in Appendix C and simultaneously develop word lists that represent the miscues produced by the students’ oral reading will help their students advance toward proficiency.

Although improvements were found in the reading comprehension scores of the students who participated as the experimental group in the study, a statistical significance was not found. Other fluency researchers focusing on older struggling readers support these findings (e.g. Scammacca et al., 2007; Edmonds et al. 2009). In order to improve the effect of repeated reading on older students’ comprehension, students need to be taught cognitive and metacognitive strategies to use when reading. These strategies include: checking for meaning, self-questioning, summarizing, and using imagery to develop meaning. Additionally, the passages used for the repeated reading intervention with older students should include expository texts that are written on or above the reading level of the students. The technical nature of the vocabulary found in expository text can build their language comprehension skills, thus enhancing overall
comprehension of the text. Reviewing the pronunciation and definition of technical and content-rich words would also build student language comprehension.

Evidence suggests that repeated reading can be an effective instructional intervention for struggling older readers. In order to maximize the benefit from this intervention it is important that: authentic and appropriate texts are used, students are exposed to both narrative and expository texts, concurrent comprehension strategy training occurs, correct modeling of oral reading takes place, corrective feedback is given, there is a focus on language development, and ample opportunity is provided to practice high success reading.

**Implication for research**

With regard to the scholarly significance of this study, it is important to note that current research in this field has provided compelling evidence that fluency is an essential component in reading development. Although fluency was identified as a critical element in effective reading development and reading instruction by the National Reading Panel (National Institute of Child Health and Human Development [NICHD, 2000]), fluency instruction has been a neglected aspect, particularly with regard to students beyond the primary grades (NICHD, 2000; Paige, 2012; Rasinski, Rikli, & Johnson, 2009). Although there is agreement among leading reading researchers that fluency is an essential aspect in reading development, there is limited research available on fluency development and interventions on readers beyond the primary grades. This study provides additional research on the topic.

More specifically, research cited in Chapter 2 has shown that fluency is critical to the development of the purpose for reading: that is, comprehension of text (see Chall, 1983; Laberge and Samuels, 1974). The present study helps confirm that teachers can use the instructional strategy of repeated reading with students beyond the primary grades in their attempts to
successfully increase overall reading proficiency. This study found that repeated reading had a significant effect on 5th and 6th grade students’ accuracy, rate, prosody, and motivation to read yet no significant difference was found with regard to comprehension. These findings are consistent with the findings of other reading researchers who have focused their research on the older struggling reader (e.g. Wexler, 2008; Edmonds et al., 2009; Scammacca et al., 2007). Upper elementary and middle school readers are required to develop increasingly complex metalinguistic, metacognitive and lexical processes to enable them to read with proficiency as they work with more challenging text and content that requires not only surface understanding but also deeper language comprehension. If we are to rectify reading fluency dysfunction in older students, researchers need to recognize and further investigate the difference between these learners and younger beginning readers. Additionally, more research is needed that will focus on the potential effects fluency based interventions with a comprehension component have on older struggling readers.

**Implications for generalizability**

**Generalizability to a larger population**

In the present study, the sample size constituted 56% of the target population and was composed of approximately equal numbers of 5th and 6th grade students. Therefore, it is reasonable to assume the findings from the study are generalizable to the experimentally accessible population- specifically, other students in the school who are in the upper elementary and middle schools and who are not in Special Education or who are English language learners (Gall et al., 1996). However, generalizing to the population of the school as a whole, or to all 5th and 6th graders, or to all upper elementary and middle school students in Massachusetts, is difficult because these larger populations have students who are in Special Education or
receiving ELL support. Compared with larger districts, Caucasian and low-income students are over-represented in the sample while students in Special Education and students with limited English language proficiency are under-represented (see Table 2 for further demographic information). The most generalizability, which the study’s results are likely to produce, relates to students in general education classrooms within an upper elementary or middle school.

This study did not measure the extent to which the instructional intervention interacts with students who possess different personal characteristics that are not demographic in nature. For example, different results may have been obtained at different schools in which the personological variables are markedly different. The generalizability of the findings are limited if the population differs appreciably from the sample (Gall, et. al., 2007).

Generalizability to other instructional contexts

Ecological validity refers to the extent to which the behaviors observed and recorded in a study can be generalized from the set of environmental conditions created by the researcher to different environmental conditions (Gall, et. al., 2007). In order for a study to be considered to have a high degree of ecological validity, the results of the study must be obtained in a variety of environments from a variety of researchers. This requires an explicit description of the experimental treatment so that the study can be replicated. The present study did follow and does provide an explicit description of the experimental treatment and the procedural protocol that was used (see Appendix C for a detailed checklist).

The Hawthorne effect had a minimal impact on this study because this treatment took place during the regularly scheduled ELA class. It is unlikely that the participants performed differently because they knew they were being studied as it is common practice in these ELA classes to modify and differentiate instruction for individual learners or groups of students.
Novelty and disruptive effects do provide a threat to the generalizability of this study. Multiple teachers were involved in the study, therefore it is not possible to assess whether the treatment was novel or disruptive in each classroom. For example, this intervention was a new instructional strategy to one of the participating teachers; the introduction of the instruction to this teacher could affect the generalizability of the results. Also, the intervention did occur at the beginning of the school year, allowing for the possibility that the intervention was novel or unique compared with the students’ experience in prior years. The students may have responded positively to the intervention because it was novel and it is possible the students responded to the uniqueness, rather than the actual treatment. Additionally, because the treatment length was relatively short compared with a full academic year, the results of the study may not be generalizable with regard to consistent use throughout the year.

Limitations of the Study

Over the course of the study, several limitations arose that could have impacted the results of this study. One limitation was the relatively small sample size of the study. The number of participants, along with the inclusion of only two grade levels, restricted population generalization. Future research should have a larger sample size, which includes participants from a number of upper elementary and middle school grade levels.

A second limitation is the lack of longevity of the study. The study duration was twelve weeks. However, during this time many school breaks occurred, including Columbus Day, Thanksgiving, and winter breaks. Many students tend to experience some type of regression over school breaks, thus extending the duration of the study would assist in balancing recoupment periods over a protracted period of time. Future research should extend the length of the study for an entire school year, using a norm-based comprehension benchmark assessment that is
administered in the fall and spring. This may result in more comprehensive data to measure comprehension growth.

Another limitation is that the author is at the center of both research and praxis in this study. Therefore, research bias is of particular concern (Machi & McEvoy, 2009). In prior years, the researcher has implemented various fluency interventions, including repeated reading, in her classroom. The author, as a researcher, hypothesized that repeated reading would be effective in the overall development and improvement of student’s reading abilities based on her classroom observation that independent reading levels improved and that improved results on standardized assessments occurred after fluency interventions. The effectiveness of the intervention was a motivating factor for the current study. For this reason, the researcher is particularly susceptible to confirmation bias, a perception, which may have led her to only notice evidence that supported the hypothesis. This is one of the primary reasons this study was quantitative, using externally designed, normed assessments.

Despite some of these basic checks against bias, participating teachers in the study, including the researcher, may have unwittingly engaged with students in such a way that unintentionally favored the treatment group over the comparison group. Students may have been responding to researcher expectations that they improve more in one group than the other. Alternatively, participating teachers may have introduced confounding variables (level of enthusiasm, optimism, or energy, for example) that were not accounted for in the study but may have contributed to the main effect. Future research should be conducted by researchers who have no involvement or investment in the educational institution in which the research is being conducted.

Conclusion
Reading proficiency levels in the United States are at an alarming level. The latest figures from the National Center for Educational Statistics (NCES) (2003) estimated that only 13% of adults in America read at a proficient level. An NCES (2009) study found that fourteen percent of adult Americans read below the basic level of proficiency and 29% read only at the basic level (National Center of Educational Statistics, 2009). Failure to develop Americans’ reading proficiency has been found to be a chronic systemic issue for the past three decades. According to a long-term NAEP reading study (2009), reading results for 12-17 year-olds have changed very little over the last 30 years, a clear indicator that efforts to improve academic literacy among adolescents needs to be dramatically modified. Further evidence for the need to focus on adolescent literacy is provided in the figures reported by the National Assessment of Educational Progress (2009), which found that nearly half of eighth graders had not achieved a minimal level of reading fluency.

Many seminal researchers posit a critical lack of fluency instruction as the root cause of reading failure among middle and high school students (Edmonds, et al. 2009; Joseph & Schisler, 2009; Nichols, Rupey, & Rasinski, 2009; Rasinski & Padak, 2005). The lack of fluency instruction has resulted in students entering middle and high school unable to fluently read their grade level textbooks or age-appropriate text for pleasure. Fluent reading and the teaching of fluency strategies has been identified as one of five essential components of literacy programs (National Reading Panel (NRP), 2000). If children cannot decode words, read fluently and with prosody, they cannot make meaning of what is read. Thus, the act of reading becomes meaningless to them. Therefore, fluency instruction at the upper elementary and middle school level ought to be an integral component of reading instruction. Yet, the National Reading Panel (2000) states fluency was a neglected aspect of reading instruction and one of the least known
aspects of the five major components of reading (NRP, 2000; O’Connor, White, & Swanson, 2007; Pikulski & Chard, 2005). Reading instruction at the upper elementary and middle school level faces the same myriad of needs and program implementation difficulties as instruction in the elementary level. Research indicates that less than five minutes a day is spent on fluency instruction at the upper elementary and middle levels (Paige, Rasinski, & Magpuri-Lavell, 2012).

Based on current research cited in the present study, the reality is that fluency is not an instructional priority in the elementary, upper elementary or middle school levels. If fluency is not a priority in the primary grades, it will almost certainly not receive the attention required in the upper elementary and middle school grades. Fluency is an important indicator of reading achievement, and reading fluency instruction needs to be a fundamental part of reading instruction.

The finding of this study and the research cited in this study assert that fluency interventions such as repeated reading have a statistically significant effect on middle school students’ reading accuracy, rate, and prosody. However, the effects of fluency interventions on improving adolescent comprehension abilities are unclear. There have been consistent findings that oral reading fluency is strongly related to reading comprehension in the primary grades (NRP, 2000; Hempenstall, 2009). This relationship is inconsistent among older students (Fuchs, Fuchs, Hosp & Jenkins, 2001; Edmonds et al., 2009; Roberts et al., 2007).

In order to increase the national literacy rates of adolescents, researchers and educators must gain a thorough understanding of the struggling adolescent reader and develop intervention strategies that support the developmental needs of the adolescent. Improving the literacy skills of the adolescent reader is imperative. The ramifications of reading difficulties at the middle school
level that persist into adulthood are serious at both individual and societal levels. Being literate in
the 21st century will help to insure both individual and societal economic freedom.

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Appendix A

Assessments

**Multidimensional Fluency Scale**

Use the following scales to rate reader fluency on the dimensions of expression and volume, phrasing, smoothness, and pace. Scores range from 4 to 16. Generally, scores below 8 indicate that fluency may be a concern. Scores of 8 or above indicate that the student is making good progress in fluency.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Expression and Volume</td>
<td>Reads with little expression or enthusiasm in voice. Reads words as if simply to get them out. Little sense of trying to make text sound like natural language. Tends to read in a quiet voice.</td>
<td>Some expression. Begins to use voice to make text sound like natural language in some areas of the text, but not others. Focus remains largely on saying the words. Still reads in a quiet voice.</td>
<td>Sounds like natural language throughout the better part of the passage. Occasionally slips into expressionless reading. Voice volume is generally appropriate throughout the text.</td>
<td>Reads with good expression and enthusiasm throughout the text. Sounds like natural language. The reader is able to vary expression and volume to match his/her interpretation of the passage.</td>
</tr>
<tr>
<td>B. Phrasing</td>
<td>Monotonic with little sense of phrase boundaries, frequent word-by-word reading.</td>
<td>Frequent two- and three-word phrases giving the impression of choppy reading; improper stress and intonation that fail to mark ends of sentences and clauses.</td>
<td>Mixture of run-ons, mid-sentence pauses for breath, and possibly some choppiness; reasonable stress/intonation.</td>
<td>Generally well phrased, mostly in clause and sentence units, with adequate attention to expression.</td>
</tr>
<tr>
<td>C. Smoothness</td>
<td>Frequent extended pauses, hesitations, false starts, sound-outs, repetitions, and/or multiple attempts.</td>
<td>Several &quot;rough spots&quot; in text where extended pauses, hesitations, etc., are more frequent and disruptive.</td>
<td>Occasional breaks in smoothness caused by difficulties with specific words and/or structures.</td>
<td>Generally smooth reading with some breaks, but word and structure difficulties are resolved quickly, usually through self-correction.</td>
</tr>
<tr>
<td>D. Pace (during sections of minimal disruption)</td>
<td>Slow and laborious.</td>
<td>Moderately slow.</td>
<td>Uneven mixture of fast and slow reading.</td>
<td>Consistently conversational.</td>
</tr>
</tbody>
</table>

Assessor Copy

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 Alice and Mr. Jacobs. 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."

<table>
<thead>
<tr>
<th>One day, Alice's teacher, Mr. Jacobs told the class they would be making crossword puzzles. Mr. Jacobs split the class in two groups. The first group of students had to make crossword puzzles about the food chain. The second group had to make crossword puzzles about the human body. Alice was happy when she got put in the second group. She loved learning about the human body. It was her favorite part of science class. After the groups were formed, Mr. Jacobs gave each group articles about their topic. Students selected ten important words from the articles as the answers to their puzzles. Then, they created answer keys on pieces of graph paper. The answers were placed on the graph paper both up and down the squares and across the paper. Then, the students wrote clues to go with each of the words. The first word Alice chose for her puzzle was brain. Her clue for brain was &quot;This organ is wrinkled and helps you to think. The word goes up and down on the paper.&quot; After the students finished creating the clues, they wrote numbers on the squares where the words started. Next, the students shaded the squares that had no letters. After everyone finished, they exchanged crossword puzzles. The students solved each other's puzzles, using the clues. Alice was happy. This had been a fun, creative assignment. She couldn't wait to tell her friends in other classes about it.</th>
</tr>
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<tbody>
<tr>
<td>113</td>
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<tr>
<td>128</td>
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<tr>
<td>176</td>
</tr>
<tr>
<td>211</td>
</tr>
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<td>238</td>
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</table>

Total Words Read: ______ - # of Errors: ______ = CWPM: ______
Student Copy

One day, Alice's teacher, Mr. Jacobs told the class they would be making crossword puzzles. Mr. Jacobs split the class in two groups. The first group of students had to make crossword puzzles about the food chain. The second group had to make crossword puzzles about the human body. Alice was happy when she got put in the second group. She loved learning about the human body. It was her favorite part of science class.

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Progress Graph

1. For the first reading of the selection, put a red dot on the line above the selection number to show your correct words-per-minute rate.
2. For the second reading, put a blue dot on the line above the selection number to show your correct words-per-minute rate.
3. Make a graph to show your progress. Connect the red dots from selection to selection with red lines. Connect the blue dots with blue lines.
2
Assessment Forms

Benchmark Assessment System 2
www.heinemann.com
SECOND EDITION
Appendix B

Tables and Figures Associated with Assumption Checking for ANCOVA

Table B1. Data Associated with Covariate Accuracy

<table>
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<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
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<th>SE</th>
<th>Kurttosis Statistic</th>
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<td></td>
<td>50</td>
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<td>.337</td>
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<td>.662</td>
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*Figure B1. Boxplot for Covariate Accuracy*
Figure B2. Histogram for Covariate Accuracy
### Table B2. Data Associated with Covariate Rate

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<th>M</th>
<th>SD</th>
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*Figure B3. Boxplot for Covariate Rate*
Table B3. Data Associated with Covariate Motivation to Read

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Figure B4. Histogram for Covariate Rate
Figure B5. Boxplot for Covariate Motivation to Read
Figure B6. Histogram for Covariate Motivation to Read
Table B4. Data Associated with Covariate Prosody

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Figure B7. Boxplot for Covariate Prosody
Figure B8. Histogram for Covariate Prosody
Table B5. Data Associated with Covariate Comprehension

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<th>M</th>
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Figure B9. Boxplot for Covariate Gates
Figure B10. Histogram for Covariate Comprehension
Table B6. Data Associated with Dependent Variable Accuracy

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Figure B1. Boxplot for Dependent Variable Accuracy
Figure B12 Histogram for Dependent Variable Accuracy
Table B7. Data Associated with Dependent Variable Rate

<table>
<thead>
<tr>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Skewness Statistic</th>
<th>SE</th>
<th>Kurrtosis Statistic</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>98</td>
<td>212</td>
<td>151</td>
<td>28.8</td>
<td>-.057</td>
<td>.337</td>
<td>-.600</td>
<td>.662</td>
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</table>

Figure B13. Boxplot for Dependent Variable Rate
Figure B14. Histogram for Dependent Variable Rate
<table>
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<tr>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Skewness Statistic</th>
<th>SE</th>
<th>Kurrtosis Statistic</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
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<td>79</td>
<td>61</td>
<td>10.24</td>
<td>-.434</td>
<td>.335</td>
<td>-.838</td>
<td>.662</td>
</tr>
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</table>

*Figure B15. Boxplot for Dependent Variable Motivation to Read*
Figure B16. Histogram for Dependent Variable Motivation to Read
Table B9. Data Associated with Dependent Variable Prosody

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Skewness Statistic</th>
<th>SE</th>
<th>Kurrtosis Statistic</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>9</td>
<td>16</td>
<td>12.7</td>
<td>2.0</td>
<td>-.170</td>
<td>.337</td>
<td>-.998</td>
<td>.662</td>
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</tbody>
</table>

Figure B17. Boxplot for Dependent Variable Prosody
Figure B18. Histogram for Dependent Variable Prosody
Table B10. Data Associated with Dependent Variable Comprehension

<table>
<thead>
<tr>
<th>N</th>
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<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Skewness Statistic</th>
<th>SE</th>
<th>Kurrtosis Statistic</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
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<td>37</td>
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<td>-0.345</td>
<td>0.337</td>
<td>-0.853</td>
<td>0.662</td>
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</table>

Figure B19. Boxplot for Dependent Variable Comprehension
Figure B20. Histogram for Dependent Variable Comprehension
Figure B21. Linear Regression for Comprehension

![Linear Regression for Comprehension](image)

GROUP
- Experimental
- Comparison

Experimental: $R^2$ Linear = 0.631
Comparison: $R^2$ Linear = 0.562

Figure B 22. Linear Regression for Rate

![Linear Regression for Rate](image)

GROUP
- Experimental
- Comparison

Experimental: $R^2$ Linear = 0.826
Comparison: $R^2$ Linear = 0.619
Figure b 23. Linear Regression for Accuracy

Figure B24. Linear Regression for Prosody
Figure B25. Linear Regression for Motivation to Read
Appendix C

Procedural Facilitation

Checklist for Repeated Reading

<table>
<thead>
<tr>
<th>Step Number</th>
<th>Description</th>
<th>Step Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First day of the week complete steps 1-9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide the students with the reading passage for week.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Provide timers for the students</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Give student corrective feedback on their oral reading</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Give student word list to practice</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Give students their WCPM</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Have students record their WCPM on the student graph</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Read the pass aloud to student with appropriate prosody and rate.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Have student practice reading the passage to themselves</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Have students read aloud the passage to a peer</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Day 2-5 of each week complete steps 10-12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hand out timers, student monitoring graphs and reading passages.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have students read the passage to themselves silently.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>The teacher orally reads the passage to the students while students follow along.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Students read aloud the passage to peer and graph the results.</td>
<td></td>
</tr>
</tbody>
</table>
# Procedural Checklist

<table>
<thead>
<tr>
<th>Date</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/3/2014</td>
<td>Approval from the district and building administration in order to access and use data for the purpose of this research was given.</td>
</tr>
<tr>
<td>9/8/2014</td>
<td>A consent form, which fully explained this research study and the procedures to be used in data collection, was sent to the parents of students who are potential participants in this research.</td>
</tr>
<tr>
<td>9/15/2014</td>
<td>The independent reading levels and accuracy rates of all participants were obtained, using the Fountas &amp; Pinnell Benchmark Assessment System.</td>
</tr>
<tr>
<td>9/16/2014</td>
<td>The students were given the pre-intervention assessment of reading comprehension, using the Gates-MacGinitie Reading Tests.</td>
</tr>
<tr>
<td>9/17-9/19/2014</td>
<td>The Multidimensional Fluency Scale (MFS) was individually administered to measure prosody.</td>
</tr>
<tr>
<td>9/22/2014</td>
<td>The students were given the Curriculum–Based Measurement of Oral Reading Fluency (CBM-ORF) to determine a baseline for rate.</td>
</tr>
<tr>
<td>9/22/2014</td>
<td>All identifiers (i.e. first and last names of the students and secure student identifiers) were deleted to ensure anonymity and confidentiality.</td>
</tr>
<tr>
<td>9/25/2014-1/5/2015</td>
<td>Once the baseline condition was established, the intervention of repeated reading was implemented for a period of twelve weeks.</td>
</tr>
<tr>
<td>1/6/2015</td>
<td>After the intervention a posttest of the Gate test was administered to determine if the intervention of repeated reading has had an effect on reading comprehension.</td>
</tr>
<tr>
<td>1/6/2015</td>
<td>A posttest of the MFS was administered to see if the intervention of repeated reading had an effect on a student’s prosody.</td>
</tr>
<tr>
<td>1/7/2015</td>
<td>A posttest of CBM-ORF was given to measure rate.</td>
</tr>
<tr>
<td>1/8/2015</td>
<td>A posttest of the Fountas and Pinnell Benchmark assessment was given to assess accuracy.</td>
</tr>
<tr>
<td>1/9/2015</td>
<td>Statistical analysis of the data collected.</td>
</tr>
</tbody>
</table>