THE EFFECTS OF THE SECONDARY FLUENCY ROUTINE ON THE FLUENCY AND COMPREHENSION OF STRUGGLING SECONDARY READERS

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by

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ABSTRACT

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The purpose of this quasi-experimental study was to examine the effects of the Secondary Fluency Routine (SFR), an intervention designed by the researcher and derived from research-based practices described in other studies, on the oral reading fluency and comprehension of middle school students enrolled in reading intervention classes.

Thirty-nine seventh- and eighth-grade students enrolled in reading intervention classes qualified for the study. Students in the treatment classrooms were provided the SFR intervention, which consisted primarily of repeated reading and choral reading, for approximately 10 minutes daily for a period of 18 weeks. Meanwhile, students in the comparison classrooms participated in independent reading for the same 10 minutes. Participants were pre- and posttested using the GORT-5.

The researcher employed a series of repeated measures analysis of variance (ANOVA) on all outcome measures, including rate, accuracy, fluency, oral reading index (ORI), prosody, and comprehension to examine main and interaction effects. Main effects were detected on all measures, but there were no interaction effects. To further explore the nature of the effects and for practical significance, pre- and posttest data from the GORT-5 were analyzed in six separate paired-samples *t*-tests, and mean difference effect sizes (Cohen's *d*) were calculated. Both groups made gains on most of the outcome measures, but the mean difference effect sizes in the treatment group for the comprehension and ORI measures were moderate (approaching large), which was greater

than the effects in the comparison group. Overall, the SFR appears to be a viable intervention for secondary struggling readers. Limitations, implications for action, and recommendations for future research are also discussed.

KEY WORDS: Adolescents, Choral reading, Comprehension, Fluency, Repeated reading

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When I decided to pursue my Doctorate, I had no idea just how challenging the journey would be. From the early days of completing difficult reading and writing assignments after a 15-year hiatus from being a student to the completion of this dissertation, there were many times when I wondered exactly what I had gotten myself into. I knew the dissertation would be difficult and require commitment (as it should), but I could never have comprehended the sacrifice involved, not only from the writer, but from many other people.

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CHAPTER I

Introduction

Background

Fluency has long been associated with skilled reading. In his review of 19th century reading research, Huey (1908) determined that practice was as essential in the development of fluency as it was in the development of other reading skills. He stated, "Repetition progressively frees the mind from attention to details, makes facile the total act, shortens the time, and reduces the extent to which consciousness must concern itself with the process" (p. 104). Fluency did not gain widespread attention, however, until 1974 when LaBerge and Samuels presented the automatic information processing theory, which laid the groundwork for much of what occurs in today's classrooms in regard to instruction focused on improving fluency.

The most recent milestone for reading fluency is considered by many reading professionals to be the Report of the National Reading Panel (NRP, 2000). The Panel, which was charged with assessing the status of research-based knowledge and the effectiveness of various approaches to teaching children to read, listed fluency as one of the major goals of reading instruction and suggested that it should become an instructional priority. In addition, this report determined fluency to be a critical factor needed for comprehension.

Fluency saw somewhat of a resurgence after the publication of the NRP's report in 2000; however, it was still not considered a "hot" topic in the eyes of literacy educators and researchers as reported in the International Literacy Association's annual *What's Hot, What's Not* survey of literacy experts (Cassidy & Loveless, 2011). In 2012,

Rasinski wrote *Why Reading Fluency Should be Hot!,* in which he lamented the absence of fluency from the survey. He speculated about why he thought the topic was missing: "it has become a pariah in the reading field" (p. 516). He argued that fluency should be included because of its position at the center of authentic reading instruction, which is ultimately aimed at reading comprehension.

The International Literacy Association's (ILA) survey is not simply a popularity contest among literacy topics; rather, it is an instrument used by both teachers and researchers to guide research and practice. In fact, this statement appears in the introduction to the 2017 report: "Traditionally, the *What's Hot* report has been used to foster relevant professional development within schools, to promote timely research and lifelong learning for literacy teachers, and to guide conversations in teacher education programs" (ILA, p.3). Rasinski (2012) worried that because fluency had not been included in the survey, it might be deemphasized in literacy programs, resulting in a lack of appropriate fluency instruction. Rasinski's concern was not unfounded.

Statement of the Problem

The importance of fluency cannot be understated. One of the many metaphors used to describe fluency is that of a bridge between early and later reading stages. If students do not achieve fluency, they can get stuck on the bridge, limiting their comprehension, engagement, and ultimately their motivation to read (Hasbrouck & Glaser, 2011; ILA, 2018). The consequences for these reluctant readers are steep and sometimes long-term (Biancarosa & Snow, 2004; Kamil et al., 2008; NEA, 2007; Snow, 2010).

Although a wealth of empirical research around the topic of fluency exists pertaining to the elementary grades (Edmonds et al., 2009; Rasinski et al., 2005; Rasinski et al., 2016), the same cannot be said for the secondary grades (Wexler et al., 2008). It is not surprising, then, that fluency is not an instructional priority in the upper grades (Kamil et al., 2008; Nageldinger, 2014; Paige et al., 2012; Paige et al., 2014; Rasinski et al., 2005). Additionally, many challenges to instruction in basic reading skills such as fluency exist in the upper grades, including lack of appropriate materials; finding a time and place within an already packed curriculum to teach these skills; lack of teacher training; determining how to individualize instruction, especially in large classes; and the decrease in parental involvement at the secondary level (Joseph, 2008).

In addition to a lack of empirical studies at the secondary level, secondary teachers often do not have the necessary training to assist their struggling readers (Goering & Baker, 2010; Kamil et al., 2008; Rasinski et al., 2005; Snow, 2010). Stover et al. (2015) remind us that these teachers, who generally feel unprepared to help students in the area of fluency and in reading, in general, need viable interventions. Interventions must be practical strategies that are user-friendly and can be easily integrated into the existing curriculum (Kuhn, 2004). Interventions must also be provided by teachers that have been thoroughly trained and have buy-in (Kamil et al., 2008).

The lack of attention to fluency in the upper grades is problematic, especially in light of recent statistics and trends in relation to reading performance. These trends are reflected in The National Assessment of Educational Progress (NAEP), known as "The Nation's Report Card," which released its most recent reading performance scores in 2017. According to the scores, only 36% of eighth-grade students and 37% of fourth-

grade students ranked at or above the Proficient level of achievement in reading. Compared to the 2015 report, there was no significant change in the fourth-grade scores, and only a one-point gain in the average eighth-grade reading score. Furthermore, scores suggest that the achievement gap between the highest-performing students and the lowest-performing students is widening (NCES, 2017; O'Donnell, 2018).

Stanovich (1986) suggested gaps such as this occur as a result of the Matthew Effect, in which "the rich get richer and the poor get poorer" (p. 38). This especially applies to struggling readers whose weak fluency skills result in poor comprehension and a lack of vocabulary development. As a result of poor reading skills, these students read less and fall further behind. Meanwhile, their "richer" peers read significantly more text and continue to develop their already strong reading skills. As struggling readers move into the secondary grades, the texts become more difficult (Kuhn & Schwanenflugel, 2019; Snow, 2010), the expectations become greater, and there is little to no instruction in basic reading skills (Kamil et al., 2008; Nageldinger, 2014; Paige et al., 2012; Paige et al., 2014; Rasinski et al., 2005; Rasinski, 2012; Rasinski & Padak, 2005)—and the gap continues to widen.

According to Kuhn and Schwanenflugel (2019), if secondary students are going to be successful with the quantity and complexity of reading they are required to do in the upper grades, they have to develop reading stamina. If they are disfluent, reading will be tiring, and building stamina will be difficult, if not impossible. On the other hand, fluent readers stand a better chance of building stamina and handling the demands of secondary reading assignments.

While NAEP trends suggest that schools are not effectively meeting the literacy needs of students, there is compelling evidence that somewhere between 90−95% of all students can achieve literacy skills at or approaching grade level (Hasbrouck; 2011). Furthermore, adolescence is not too late to intervene. Although limited in number, studies have shown that effective interventions do benefit older students, and disfluent reading does not have to be an inevitable outcome (Edmonds et al., 2009; Paige & Magpuri-Lavell, 2014; Scammacca et al., 2015).

However, complex reading problems are not likely to be quickly and easily remedied and may take extensive time (Vaughn & Fletcher, 2015). Our knowledge regarding the role of fluency and fluency interventions at the secondary level is limited in the absence of research. However, we can look to the elementary literature about interventions conducted with younger students for guidance in terms of what interventions or elements of instruction could have positive outcomes with older, struggling readers. Nevertheless, further research is needed to inform fluency instruction at the secondary level and ultimately to improve these trends (Wexler et al., 2008).

Purpose of the Study

The purpose of this study was to examine the effects of the Secondary Fluency Routine (SFR) on the oral reading fluency and comprehension of middle school students enrolled in reading intervention classes. It was hypothesized that if students participated in a daily reading fluency intervention for 18 weeks, their oral reading fluency and comprehension would increase from pretest to posttest.

Significance of the Study

This study is designed to inform both research and practice in the area of secondary reading, specifically as it relates to struggling readers. It is hoped that the study will add to the research base in several ways.

While limited research in the area of secondary reading fluency interventions does exist, there is a lack of converging evidence available to educators as to which instructional practices actually work. At present, trends show that only 36% of 8th-grade students are reading proficiently (NCES, 2017). If trends such as this are to be reversed, evidence-based solutions must be found. The present study seeks to add to the research in this area and to help clarify for educators what instructional practices might prove effective in improving both the fluency and comprehension of older struggling readers.

Furthermore, interventions in secondary settings provide their own set of challenges. For example, secondary educators rarely have the background knowledge needed to intervene with students who struggle in reading. Also, finding the time and place to implement interventions such as this in secondary settings can be difficult. Finally, many interventions commercially available are costly and require extensive professional learning. This study seeks to determine the effectiveness of a user-friendly intervention that is easy to implement, cost-effective, and requires little time in terms of both teacher preparation and actual implementation.

Additionally, there are several specific gaps in the research with regard to secondary reading interventions. These include the need for more studies set in rural settings, studies that include English Learners, studies that include interventions delivered by regular classroom teachers (Reed et al., 2012), and studies that utilize whole-class

choral reading (Paige, 2008). The present study seeks to add to the research base in each of these areas.

Definitions of Terms

Fluency: Fluency combines accuracy, automaticity, and oral reading prosody, which, taken together, facilitate the reader's construction of meaning. Fluency is demonstrated during oral reading through the 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.

Word Recognition Automaticity (WRA): WRA refers to the reader's ability to recognize words quickly and efficiently.

Accuracy: Accuracy is measured by the reader's ability to correctly pronounce words in the text.

Prosody: Otherwise known as expression, prosody describes the rhythmic and tonal features of speech. It includes features such as pitch or intonation, stress or loudness, duration or timing, and chunking words into phrases according to syntax.

Wide reading: This method involves reading something once, teaching a skill or strategy in conjunction with the text, then moving on to a new text. The purpose of this type of reading is to increase the volume of reading.

Deep reading: This method involves repeated reading with a focus on increasing fluency.

Repeated reading: This technique involves reading the same text repeatedly until goals are met, such as a predetermined reading rate or a predetermined number of readings.

Assisted repeated reading: This form of repeated reading includes modeling of fluent reading.

Non-assisted repeated reading: This form of repeated reading does not include modeling of fluent reading.

Choral reading: This technique involves students reading a selected passage in unison, with the teacher's voice taking the lead.

Research Questions

This study seeks to answer the following questions:

1. What effect does the implementation of the Secondary Fluency Routine have on reading fluency in struggling middle school readers?

2. What effect does the implementation of the Secondary Fluency Routine have on reading comprehension in struggling middle school readers?

From these questions, the researcher hypothesized that the implementation of the Secondary Fluency Routine would have an effect on both the fluency and comprehension of struggling middle school readers.

Delimitations

Results of the present study must be considered with the recognition that the study represents a single investigation into the questions posed. As such, the results are applicable to the context of this study, as participants were delimited to middle school (Grades 7 and 8) reading intervention classes in a 4A school district located in a rural area in the southeast United States.

Organization of the Study

The remainder of this study is organized into four chapters, a reference list, and an appendix. Chapter 2 presents a review of relevant literature. Following the review of literature, Chapter 3 includes a description of the methods used to implement the study. Next, Chapter 4 details the results of the study. Finally, Chapter 5 consists of a discussion of the results as they relate to the existing literature, limitations of the study, implications for teaching practice, and recommendations for areas of future research.

CHAPTER II

Literature Review

Reading fluency is recognized as an important component of reading with considerable implications for instruction. That said, reading fluency has been debated for years and its definitions have varied across decades and contexts. However, reading fluency, and its associated instruction and assessment, is easily framed by the theory of automaticity. In addition, a wealth of research using this theoretical frame has revealed that fluency instruction can improve other components of reading such as comprehension. Thus, the purpose of this chapter is to present a comprehensive review of the literature related to fluency, secondary readers and fluency, and effective fluency instruction.

Theoretical Framework

Automatic information processing. Comprehension is the main goal of reading, but to better comprehend text, students must be able to decode words accurately and automatically (Fountas & Pinnell, 2006; Kuhn & Stahl, 2003; Rasinski & Hoffman, 2003). LaBerge and Samuels's (1974) automatic information processing model describes how automaticity develops in proficient readers and how that automaticity then enables readers to comprehend what they read.

In terms of fluency, the automatic information processing model is one of the best known and most relevant (Kuhn & Stahl, 2003; Rasinski & Hoffman, 2003; Samuels, 1994). It is usually defined as a bottom-up model of reading (Stanovich, 1980) because it depicts reading as beginning with the processing of visual information on the page (the bottom) and proceeding to higher levels of cognitive processing through what is in the reader's head (the top). However, Samuels revised the model in 1977 to account for the

fact that higher-level processes can affect lower level processes (Stanovich, 1980). Nearly twenty years after the model was originally published, Samuels (1994) discussed this revision, explaining that he and LaBerge originally viewed automaticity in a much more limited way; however, upon later realizing that the concept applied to almost every aspect of comprehension, they adapted the model to accommodate their new understanding. Samuels said that the model "attempts to identify components in the information processing system, trace the routes that information takes as it passes through the system, and identify changes in the form of the information as it moves from the surface of the page into the deeper semantic-linguistic centers of the brain" (Samuels, 1994, p. 699).

The automatic information processing model consists of five components: visual memory, phonological memory, episodic memory, semantic memory, and attention (LaBerge & Samuels, 1974; Samuels, 1994). The central component, attention, can be further categorized as either internal or external (Samuels, 1994). Samuels (1994) depicted external attention as a prerequisite that affects all learning. It is what teachers see and hear when they observe students, and at times this information is used to determine if students are, in fact, paying attention. Sometimes external attention can indicate whether internal processing is taking place, but other times the two are not in sync. For example, a student can appear to be paying attention to one thing (external), when, in fact, he or she is thinking about or attending to something else entirely (internal).

Internal attention, which is unobservable and happens in a reader's mind, is the focus of this theory, and Samuels (1994) maintained it is the more crucial aspect. Internal

attention includes three components: alertness, selectivity, and limited capacity (LaBerge & Samuels, 1974). Alertness is how active the reader is in trying to read the text, while selectivity refers to the idea that readers decide what they want to pay attention to. Limited capacity means that a reader has a limited amount of attention and can only attend to one thing at a time.

Samuels (1994) compared the limited capacity of the human mind to the limited capacity of the fastest computer when it comes to processing information. When a person learns a new skill, all of his or her attention resources are devoted to learning that skill. This is where automaticity comes in—when the individual has learned the new skill and it becomes automatic, he or she is able to perform it with little attention (Rasinski & Hoffman, 2003) and can then turn attention to something else. In fact, many things can be processed simultaneously as long as no more than one requires attention (LaBerge & Samuels, 1974). As Samuels (1994) noted, "The critical test of automaticity is that the task, which at the beginning stage of learning could only be performed by itself, can now be performed along with one or more other tasks" (p. 701). Because reading is a complex task consisting of multiple components, automatic processing of each component is necessary (ILA, 2018).

Beginning readers, or even older readers who struggle and have not yet achieved automaticity, must switch attention between decoding and comprehending, which can be slow and frustrating (Samuels, 1994; Tracey & Morrow, 2012). A fluent reader, on the other hand, can perform the two tasks of decoding and comprehending simultaneously, unless he or she encounters an unfamiliar word or complex sentence construction. This type of "attention switching" (Samuels, 1994, p.702) occurs frequently in classrooms due

to a multitude of circumstances, and, with reading, may result in serious breaches of comprehension.

Other theories of automaticity include Logan's instance theory of automatization (1988) and Stanovich's interactive compensatory model (1980). These theories suggest that rather than involving resource limitations and attention, automaticity is a memory phenomenon (Samuels, 1994).

Instance theory of automatization. The instance theory argues that novice performance is limited by a lack of knowledge or memories rather than a shortage of resources (Logan, 1988,1997). Logan (1988) equates automaticity to memory retrieval and says that performance is automatic when it is based on "single-step direct-access retrieval of past solutions from memory" (p. 493). In this theory, each encounter of a stimulus is encoded, stored, and retrieved from memory separately; each of these separate traces is an instance. Practice (or repeated encounters) increases the number of instances accessible for retrieval, which accounts for the increased speed (or automaticity) that occurs with repeated practice (Logan, 1997). According to Logan, automaticity usually builds up over time as more traces are added to memory and responses to familiar situations become increasingly stronger.

This theory relies on three main ideas: obligatory encoding, obligatory retrieval, and instance representation (Logan, 1997). Obligatory encoding means that any time attention is given to something, it is encoded into memory, while obligatory retrieval means that any time attention is given to something, everything associated with it is retrieved from memory. Finally, instance representation means that each trace of an event

is encoded, retrieved, and stored separately; therefore, learning occurs with each and every instance or trace.

Logan (1997) described four properties of tasks that have become automatic: speed, effortlessness, autonomy, and lack of conscious awareness. These attributes develop on a continuum and at different rates. Speed means that automatic processing is fast; therefore, an increase in speed equates to an increase in automaticity. In any task that can be automatized, from dribbling a basketball, to learning to walk, to reading, speed increases with practice. Logan (1997) also presented the power law which states that "reaction time decreases as a function of practice until some irreducible limit is reached" (p. 125). This means when practicing a skill, gains will be largest early on and decrease with practice. Fluency norms, such as Hasbrouck and Tindal's (2017), reflect this idea because as students progress through the grades, the gains they make in fluency are expected to be smaller (Kuhn, Schwanenflugel, Meisinger, Levy, & Rasinski, 2010; Rasinski et al., 2016).

Effortlessness is another property of an automatic task. Logan (1997) characterized this as a "sense of ease" (p. 125) when performing a task that has become automatic. When a task is effortless, the performer is able to do another task simultaneously. Automatic processes are also autonomous, meaning they are performed without intention. Performing non-automatic processes, on the other hand, requires a deliberate act on the part of the individual. Finally, automatic processes are characterized by a lack of conscious awareness. For example, an expert piano player can play without even thinking about the steps involved. A beginning piano player, on the other hand, is deeply aware of the steps involved in playing a song. He or she must focus on everything

from reading the music to where to place the fingers on the keyboard, resulting in a slow, halting performance.

Interactive-compensatory model. The interactive-compensatory model also establishes the need for automaticity and accounts for individual differences in reading development (Stanovich, 1980). As opposed to top-down or bottom-up models, interactive models propose that there are multiple sources of information available to readers as they work to make meaning from text, including orthographic, phonological, semantic, and syntactic sources (Kuhn & Stahl, 2003). Orthographic information is related to visual input, phonological information is related to word knowledge, semantic information is related to meaning, and syntactic information to word order within sentences (Tracey & Morrow, 2012). A reader that has difficulty with any one of these processes will rely more heavily on other processes (Stanovich, 1980). For example, when a reader with poor word recognition automaticity relies heavily on context to decipher words, the compensatory aspect of this model comes into play (Kuhn & Stahl, 2003; Stanovich, 1980; Tracey & Morrow, 2012).

In summary, the automatic information processing model, the instance theory, and the interactive-compensatory model each address automaticity; however, differences exist in their consideration of this important component of fluency. Both the automatic information processing model and the instance theory stress the importance of practice in building automaticity, but for different reasons. In LaBerge and Samuels' automatic information processing model, practice is meant to free up valuable cognitive resources. Logan's instance theory, on the other hand, states that practice results in an increase in instances or memory. Both of these theories also address the fact that when a task

becomes automatic, it can be performed simultaneously with another task. This is important in a complex skill such as reading, which requires the reader to multitask if he or she is to comprehend.

One key difference in these theories is that Logan's instance theory suggests that automatization is item based rather than process based. This means that "Automaticity is specific to the stimuli and situation experienced during training" (Logan, 1988, p. 494). In process-based theories, such as LaBerge and Samuels's automatic information processing model, the process itself becomes more efficient. This distinction helps to clarify the idea of transfer, which comes into play with fluency interventions. Transfer refers to the fact that when readers practice and become fluent on one passage, there is a transfer effect that results in a fluent reading of new, unrehearsed passages. According to item-based theories like the instance theory, transfer to new, unfamiliar passages should be poor, while transfer to new but similar passages should be better. On the other hand, transfer effects should be similar regardless of the passage according to process-based theories—because it is the process that has become automatic. The concept of transfer as it relates to the instance theory and the automaticity theory is illustrated in Figure 1.

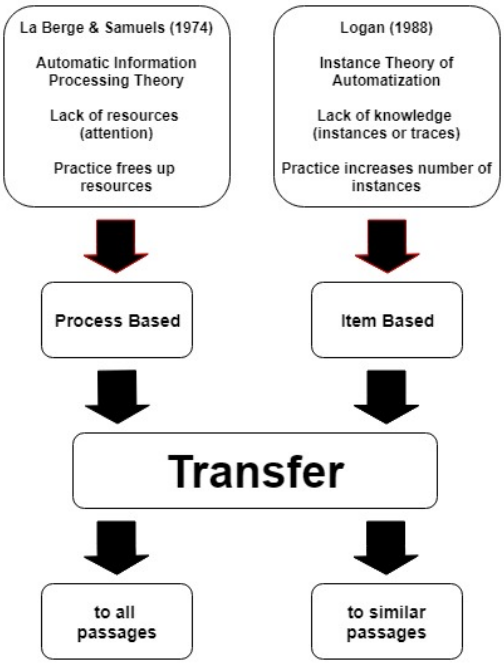

Figure 1. Transfer and Theories of Automaticity

Fluency and Its Components

Defining fluency. Although reading researchers agree that fluency is crucial in the development of skilled reading, it is a concept that is easily misunderstood; as a result, many misconceptions about fluency exist among educators. Even though many older students continue to struggle with fluency, secondary teachers generally have very little knowledge of the topic and are, therefore, not equipped to help these students (Goering & Baker, 2010; Kamil et al., 2008; Rasinski et al., 2005; Snow, 2010).

Kuhn et al. (2010) stressed the importance of teachers' definitions because the way they define fluency impacts how they teach and assess it. In addition, teachers' definitions strongly affect their students' understanding of reading and what it means to be a reader. In a classroom, for example, where there is a great deal of emphasis placed on speed, students might equate fast reading with fluent reading. Teachers often associate

fluency with speed, arguably, because reading rate is easy to measure and quantify. For the purpose of this study, the definition presented by Kuhn et al. (2010) was used:

> Fluency combines accuracy, automaticity, and oral reading prosody, which, taken together, facilitate the reader's construction of meaning. It is demonstrated during oral reading through the 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. (p. 240)

Components of fluency. Many researchers have described reading fluency as being composed of three indicators, or components, which interact to encourage comprehension: automaticity, word identification accuracy, and prosody (DeVries, 2015; Kuhn et al., 2010; Nichols et al., 2008; Paige, 2011; Paige & Magpuri-Lavell, 2014; Paige, Rasinski, & Magpuri-Lavell, 2012; Rasinski, 2012; Sample, 2005). Rasinski (2006) stressed the importance of these indicators when he refers to them as the "gateway to comprehension" (p. 704). Disfluent readers struggle with one or more of these indicators; the more indicators a reader struggles with, the more difficult it is for the reader to read efficiently with comprehension (Paige & Magpuri-Lavell, 2014).

***Automaticity and accuracy*.** Word recognition automaticity, or WRA, refers to the reader's ability to recognize words quickly and efficiently (Kuhn et al., 2010; Paige, 2011). According to the automaticity theory, automaticity frees up the reader to focus on meaning making (LaBerge & Samuels, 1974). Only by spending a great deal of time reading do readers develop automaticity (Samuels, 1994).

Reading rate is often used as a measure of WRA (Rasinski et al., 2016). Generally speaking, a good rate is one that is similar to natural conversation. This idea has been

referred to as “Goldilocks” pacing—neither too fast nor too slow, but just right (Paige & Magpuri-Lavell, 2014, p. 84).

As it relates to fluency instruction and assessment, rate must be carefully considered. Newkirk (2012) cautioned against what he refers to as the speed curriculum when he said, “When fluency is defined as speed, it tells a dangerous story about reading and learning to young children—that speed is key, that reading is a race, that the stopwatch rules” (p. 20). Rather than emphasizing fast reading, teachers should emphasize appropriate reading rates (DeVries, 2015). Although it should not be the only factor, neither can rate be ignored because when a student reads at an extremely slow rate, he or she must invest a much greater amount of both time and energy to the reading task. This typically results in less reading, and, for students who struggle, less is not more (Rasinski, 2000).

Rate is dependent on the text and the reading situation. Skilled readers adjust their rate according to the difficulty of the text (Fountas & Pinnell, 2006; Newkirk, 2012; Rasinski et al., 2016). If the text is difficult, they slow down; if the text is easily comprehended, they speed up. However, if a reader struggles with fluency, he or she will not have the mental attention available to monitor comprehension and make the appropriate adjustments to rate (Rasinski et al., 2016). Other times, it is not necessarily the difficulty of the text that causes a reader to modify his or her rate, but the effect one is trying to achieve. For example, certain oral reading situations, such as dramatic oral readings, call for adjustments to reading rate (Young & Nageldinger, 2014).

Accuracy is simply the ability to correctly pronounce words in the text (Rasinski et al., 2016). Accuracy is important and might even be considered essential to

understanding texts; however, it is not sufficient in and of itself—students may read accurately but not automatically, and both are required skills (Fountas & Pinnell, 2006; NRP, 2000; Samuels, 1994). Accuracy is measured by simply calculating the percentage of words read correctly. According to Hasbrouck and Glaser (2011), an accuracy rate of 95% or better is generally accepted by most reading researchers as a desirable goal.

To help teachers evaluate their students' oral reading fluency (ORF) performance, Hasbrouck and Tindal established ORF norms based on the number of words read correctly per minute or WCPM (Hasbrouck, 2018). These norms were originally published in 1992, updated in 2006, and updated once more in 2017 (Hasbrouck & Tindal, 2017). In general, researchers agree that an appropriate rate would be for a student to perform at the 50th percentile according to these norms, which tends to be aligned with the rate of natural conversation (Hasbrouck, 2018).

Prosody. The report of the National Reading Panel (NRP, 2000) addressed how the concept of fluency has changed over time from a limited definition that stressed automatic word recognition to a broader definition that recognized the role that prosody plays. Prosody, however, is still sometimes diminished or ignored altogether (Nageldinger, 2014; Paige et al., 2012; Rasinski, 2012; Rasinski, Rikli, & Johnston, 2009). One reason this component is often overlooked is because prosody is not as easily measured as accuracy or automaticity. However, as Kuhn et al. (2010) noted, because prosody is associated with skillful oral reading, it should be accounted for whenever oral reading fluency is assessed.

The term "prosody" is used by linguists, but many educators use the term "expression" (Dowhower, 1991; Kuhn & Stahl, 2003; Schwanenflugel, Hamilton,

Wisenbaker, Kuhn, & Stahl, 2004). Prosody is “the music of language” (Taguchi, Gorsuch, Lems, & Rosszell, 2016, p.103), and it is oftentimes described as having features which include pitch or intonation, stress or loudness, duration or timing, and chunking words into phrases according to syntax (Dowhower, 1991; Kuhn & Stahl, 2003; Kuhn et al., 2010; Schreiber, 1991; Schwanenflugel et al., 2004).

Children are very sensitive to prosodic cues in spoken language, and their babbling imitates the prosody of the language to which they are exposed (Schreiber, 1991). Schreiber and Read (1980) suggested that unlike the cues in spoken language, the prosodic cues in written language are often missing or unmarked. This absence of cues might create difficulty for students learning to read (Schreiber, 1980). Nonetheless, young readers must learn how to comprehend without prosodic cues (Schreiber & Read, 1980), and part of this involves learning parsing, or chunking, routines. Many children can read individual words, but when it comes to putting them together into meaningful phrases, they struggle. Repeated reading is one technique that helps with parsing because it helps to compensate for the lack of written cues (Schreiber, 1980).

Even though prosody is associated with oral reading, it can occur in silent reading as well, especially if the reader is proficient (Dowhower, 1991; Fountas & Pinnell, 2006; Paige et al., 2012; Paige et al., 2014; Young & Rasinski, 2017). Good readers experience what Newkirk (2012) described when he said, “even as I read ‘silently,’ I am still in a world of sound” (p. 2). Brain studies have shown that areas of the brain associated with oral language activate during silent reading as well, providing further evidence that this occurs (Rasinski & Young, 2014).

Many researchers agree that prosodic reading provides evidence that the reader is comprehending what he or she reads (DeVries, 2015; Kuhn, 2004; Kuhn & Stahl, 2003; Miller & Schwanenflugel, 2008; Paige et al., 2012; Paige & Magpuri-Lavell, 2014; Rasinski, 2012; Rasinski et al., 2016; Rasinski & Young, 2017; Samuels et al., 2005; Schreiber, 1991; Young & Rasinski, 2017). Through prosody, readers communicate what they think are the important ideas, as well as their understanding of texts (Samuels et al., 2005). Skilled readers will often self-correct when they recognize that there is a mismatch between their prosody and the meaning of the text. In this way, prosody can be viewed as a tool that helps readers monitor their own understanding (Kuhn & Schwanenflugel, 2019). These self-corrections, when recognized by teachers, can also provide beneficial information about students' reading skills.

Fluency's Relationship to Comprehension

Researchers describe the relationship between fluency and comprehension in various ways, but it is evident that they are intricately connected. The National Reading Panel (2000) determined fluency to be a critical factor needed for comprehension, and the tandem theory further explores this idea. The theory describes how the fluency components of accuracy, automaticity, and prosody work in tandem with comprehension to maximize understanding (Paige & Magpuri-Lavell, 2014; Paige et al., 2014; Rasinski et al., 2016). According to this theory, accuracy and prosody function on a maximization basis, meaning that reading with full prosody and accuracy encourages greater comprehension. Automaticity, however, works on an optimization basis, meaning that it can be increased or decreased by the reader according to his or her perceived level of comprehension. In other words, skilled readers are able to adjust their rate in either

direction in order to increase their comprehension. For example, skilled readers might speed up when reading something easy to understand or slow down when the text is difficult. Unskilled readers are not able to monitor comprehension as well and, as a result, may not adjust their rate accordingly.

Chard, Vaughn, and Tyler (2002) conducted a synthesis of fluency interventions published between 1975 and 2000 to determine which features of interventions were beneficial for elementary students with learning disabilities. They analyzed 24 studies and reported findings on features such as the inclusion of modeling, the number of repetitions, length of text, and text difficulty. Findings showed that repeated reading interventions aimed at developing fluency were associated not only with improvements in rate and accuracy but also with improvements in comprehension.

Rasinski et al. (2005) also conducted a study that supports the relationship between fluency and comprehension. The researchers' goal was to determine if, in fact, fluency was an area of concern for high school students. The study took place in an urban school that had historically performed poorly on the state graduation test. Ninth-grade students (n=303) were assessed on fluency (defined as rate), and results showed 186 of the 303 students (61.3%) read at a rate below the 25th percentile for eighth graders. Eighth-grade norms were used because ninth-grade norms did not exist. Additionally, 12% of students read below 100 words-correct-per-minute, which is a rate normally associated with elementary students. For these struggling eighth-grade readers, significantly more time was required to complete any reading assignment, which often leads to frustration and failure.

The researchers also attempted to determine a relationship between reading fluency and comprehension by running a correlation between fluency scores and scores on the high school graduation test. Results showed a moderately strong relationship between these two (r=.53). The researchers concluded that students' lack of fluency in reading could account for a significant portion of their overall reading performance, including comprehension. Therefore, some attention to reading fluency in high school is needed, at least for struggling readers.

Fluency is also related to overall reading achievement (Rasinski & Young, 2017; Young & Rasinski, 2017); Rasinski et al. (2016) demonstrated this relationship in their study of 81 college freshmen enrolled in first-year education courses. The researchers were interested in examining what college and career readiness means in terms of word recognition automaticity, a key component of fluency. Therefore, the study attempted to determine the word recognition accuracy and automaticity norms for incoming college students and to examine the relationship between oral reading rate and ACT scores. The students were given a fluency assessment, and scores were correlated with their ACT scores. Results showed that students who read with greater accuracy and/or automaticity tended to receive higher scores on the ACT reading and composite scores. The researchers also attempted to develop a prediction equation so that students' word recognition automaticity scores could be used to predict their ACT reading score.

Another important finding from the study was that the college students' automaticity scores were not much higher than Hasbrouck and Tindal's 2006 norms, which go only to the eighth grade. These students were considered successful readers, based on the fact that they scored a minimum of 21 on the ACT to gain admittance to the

university. Their scores suggest that paying too much attention to automaticity beyond established norms may not be fruitful. The researchers advised that once students have achieved adequate levels of fluency in terms of rate, that the focus be turned to prosody with the goal of aiding comprehension of complex texts.

Thus, research suggests that fluent readers have an advantage when it comes to comprehension and overall reading ability. Researchers have demonstrated this relationship with readers of all ages. As such, for struggling readers especially, fluency instruction should be a priority and should be implemented with comprehension as the goal.

Secondary Readers and Fluency

While it is expected that fluency should develop toward the end of first grade through third grade (Kuhn, 2004; Miller & Schwanenflugel, 2008), research has revealed that reading fluency is a concern for many adolescent readers (Paige, 2008; Rasinski et al., 2005; Rasinski & Young, 2017; Snow, 2010). Regardless of age, if a student has not yet "gained comfort with print" (Kuhn & Stahl, 2003, p.4), fluency instruction is imperative for the development of skilled reading. Paige et al. (2014) stressed that fluency "cannot be assumed to magically emerge…without explicit instruction, support, and encouragement across grades and text genres from knowledgeable teachers who focus on appropriate and consistent practice" (p. 147). Unfortunately, preservice teachers who plan to teach in the upper grades typically do not receive the training needed to adequately help students who have reading difficulties (Goering & Baker, 2010; Kamil et al., 2008; Rasinski et al., 2005; Snow, 2010).

Because reading is essential to all subjects, a lack of fluent reading may lead to failure across the board (Stover, O'Rear, & Morris, 2015). As students progress through the grades, not only does the amount of reading students are expected to do increase but the complexity of texts also increases (Kuhn & Schwanenflugel, 2019). Texts become longer and more difficult, graphic representations become more important, conceptual challenge increases, and texts vary greatly from content area to content area (Snow, 2010). For students who struggle with fluency in the secondary grades, reading assignments of 30 to 60 minutes turn into assignments that take much longer and ultimately become exercises in frustration (Rasinski, 2012). As a result of this frustration, many struggling students simply do not read.

Not only are adolescent struggling readers faced with a larger volume of reading and more difficult texts but the increasing skills required of all readers in today's information rich world also magnify reading deficits (Biancarosa & Snow, 2004; Kamil et al., 2008; Paige, 2008). Today's readers must be able to read critically, but this is a challenging goal for many students who struggle to read at all (Paige & Magpuri-Lavell, 2014; Snow & Moje, 2010).

The effect of poor reading skills is felt far beyond high school. Those who graduate with less than desirable reading skills also pay the price in postsecondary education and/or the workplace. Colleges offer remedial reading and writing courses for an alarmingly high number of students, which suggests students may be leaving high school without the necessary literacy skills (Biancarosa & Snow, 2004; Kamil et al., 2008; Paige, 2008; Snow, 2010; Snow & Moje, 2010). A report published by the National Endowment for the Arts (2007) revealed startling statistics on literacy in the workplace,

including the fact that employers rank reading and writing as top deficiencies of new employees. It makes sense, then, that good readers generally have more financially rewarding jobs, and less advanced readers report fewer opportunities for career growth (NEA, 2007; Snow, 2010). Good readers also tend to make good citizens because they are more likely to do things like volunteer and vote (NEA, 2007; Snow, 2010), while poor readers are more likely to drop out, be out of work, or reside in prison (Snow, 2010).

In spite of all of this, fluency instruction, and reading instruction in general, often gets very little attention in the middle and upper grade levels (Kamil et al., 2008; Nageldinger, 2014; Paige et al., 2012; Paige et al., 2014; Rasinski et al., 2005; Rasinski, 2012; Rasinski & Padak, 2005). When fluency instruction does occur with adolescents, it is usually associated with improving reading rate (Paige et al., 2014; Rasinski, 2006; Rasinski et al., 2005). This is not surprising because secondary teachers are typically not prepared to assist students who have reading difficulties (Goering & Baker, 2010; Kamil et al., 2008; Rasinski et al., 2005; Snow, 2010).

Rasinski et al. (2005) suggest that there is a "fundamental disconnect when secondary English teachers are asked to take over secondary reading situations. If the trend toward more secondary focus on literacy continues, English teacher preparation will need to change accordingly" (p. 75). Secondary teacher education programs often place a priority on content knowledge rather than the importance of literacy in the content areas (Snow, 2010). As a result, many times underprepared teachers make adjustments to assignments or methods rather than teaching students how to read content area texts (Kamil et al., 2008; Kuhn & Schwanenflugel, 2019).

Rasinski and Padak (2005) investigated whether secondary students' reading difficulties might result from a lack of fluent reading. The researchers examined the results of informal reading inventories administered to 76 ninth-grade students enrolled in low-performing, urban schools. Although accuracy scores were acceptable (94.5%), fluency scores, as measured by WCPM, were 109 on average and were on par with what could be expected of second- and third-grade students. Fourteen students read between 61 and 89 WCPM, and eight students read at less than 60 WCPM. In addition, the researchers evaluated the students' prosody and found that 44% of the 76 students received scores of 1 or 2 on the Fountas & Pinnell four-point scale, indicating inadequate expression and lack of meaningful reading.

Although limited in number, studies have shown that reading interventions can be effective with secondary students. Scammacca, Roberts, Vaughn, and Stuebing (2015) conducted a meta-analysis and synthesized the literature on interventions for struggling readers in Grades 4 through 12. Building upon a previous meta-analysis, they considered studies that provided any type of reading instruction, including word study, fluency, vocabulary, comprehension, and multiple components. Studies were limited to publication dates between 1980 and 2011. A total of 82 studies met the researchers' criteria for analysis. The researchers stated that there is clear evidence that reading interventions produce positive results for students in Grades 4 through 12. They also found that comprehension interventions for this age group were associated with significantly higher effect sizes than fluency interventions.

Overall, the researchers found that effect sizes in more recent studies (2005-2011) were significantly lower than effect sizes of older studies (1980-2004). They attributed

this to several things. First, they noted the increased use of standardized measures in more recent studies. Interventions which included standardized measures, as opposed to researcher-created measures, were associated with lower effect sizes. Second, recent studies include more rigorous and complex research designs as a result of changes in legislation and funding priorities. Third, as a result of the implementation of Response to Intervention (RtI) in many schools, recent studies include a much broader variety of participants and are not limited to students with learning disabilities, as many older studies were. Finally, also as a result of RtI implementation, comparison group instruction, often referred to as business-as-usual instruction, has improved to a great degree in recent years. In older studies, effect sizes typically reflected a comparison between intervention and no intervention, whereas in more recent studies, effect sizes compare one intervention to another.

In summary, the obstacles faced by secondary struggling readers and their educators are many. However, research has demonstrated that with effective instruction, these challenges can be met. The challenge to researchers is to continue to expand the knowledge base in this area by producing high quality empirical studies focused on fluency instruction and reading instruction in general at the secondary level.

Effective Fluency Instruction

Because of the lack of attention paid to fluency in the past, fluency instruction has been either nonexistent or poorly implemented, especially at the secondary level (Kuhn & Stahl, 2003; Kuhn et al., 2010; Rasinski et al., 2005; Rasinski, 2012). In 1983, Allington expressed concern that poor readers were often given instruction in letters, words, and sounds rather than larger units of text; on the other hand, good readers were more likely

to get “meaning-oriented” instruction (p. 558). More than thirty years later, Stover, O’Rear, and Morris (2015) voiced a similar concern: “All students, including struggling readers, need meaningful and purposeful opportunities to engage in authentic reading experiences. Yet, it is common to find struggling readers engaged in isolated skill and drill instruction and activities that perpetuate low literacy achievement” (p. 61).

DeVries (2015) listed guiding principles for fluency instruction. These include modeling of fluent reading, direct instruction in fluency along with feedback, support while reading, opportunities to repeat reading, instruction in phrasing skills, and practicing with easy materials or materials at the students’ independent levels. In addition, the author suggests that disfluent readers should not be forced to read in front of peers. In its report, the National Reading Panel (2000) suggested regular fluency practice and assessment, as well as explicit instruction in fluency. Rasinski and Young (2017) recommended instruction for struggling readers in fluency should be authentic, intentional, intensive, consistent, and synergistic. Rasinski (2010) explained the effect of synergy in this way: “Combining powerful elements of fluency instruction into an instructional routine delivered to students on a regular basis will result in instruction that is more effective than if the elements were presented separately” (p. 138).

Deep and wide reading. Readers develop word recognition automaticity, one of three components of fluency, in the same way that other automatic processes in life are developed—through both wide and deep practice (Kuhn, 2004; Kuhn et al., 2010; Paige et al., 2012; Pikulski & Chard, 2005; Rasinski, 2012; Rasinski & Padak, 2005; Samuels, 1979). Regardless of the type of reading students are doing, time spent practicing reading

is important. Unfortunately, time spent actually reading is limited in many classrooms (Kuhn et al., 2006; Paige, 2008).

Wide reading is the type of reading most adults do. This is also the type of reading that occurs in most secondary classrooms. Wide reading involves reading something once, teaching a skill or strategy in conjunction with the text, then moving on to a new text. Wide reading might also include having students read independently in programs such as Sustained Silent Reading (SSR). The purpose of wide reading is to increase the volume of reading (Paige et al., 2012; Rasinski, 2012). Like so many other skills, the development of reading skills requires practice, and wide reading involves a great deal of reading practice. In situations where students are reading independently, it is important that they are reading texts at their independent level in order to develop fluency (Rasinski et al., 2005). Typically, this type of practice, if it occurs at all, takes place in the English classroom; however, it should be supported by teachers in all content areas (Paige & Magpuri-Lavell, 2014).

Deep reading involves repeated reading with a focus on increasing fluency (Rasinski, 2012). For some readers, especially those who struggle, this type of reading is necessary (Paige et al., 2012). Rasinski, Homan, and Biggs (2009) explained that although skilled readers are often able to achieve and maintain fluency through wide and independent reading, for many young and struggling readers, repeated reading seems to be essential for achieving fluency. Repeated reading may, however, have drawbacks for secondary readers. It limits students' exposure to a variety of vocabulary, text genres, text structures, and concepts. The repetitive nature of this strategy could result in boredom for students who are already unmotivated in some cases. Finally, with the volume of reading

secondary students are expected to do, reading the same text repeatedly seems counter-productive. Research has shown, however, that what students learn from repeated reading of one passage may partially transfer to reading other passages (Chomsky, 1976; Dowhower, 1987; Kuhn et al., 2010; Morra & Tracey, 2006; Ortlieb & Young, 2016; Paige, 2008; Rasinski, 2012; Rasinski et al., 2005; Samuels, 1979; Taguchi et al., 2016).

Kuhn (2004) conducted a study in which she compared wide reading to deep reading. Participants included 24 second-grade students, and the intervention involved 18 sessions over a six-week period. There were three sessions per week, lasting 15 to 20 minutes each. Students were divided into four groups: a fluency-oriented oral reading (FOOR) group, which included repeated reading; a wide-reading group; a listening only group; and a control group. Results showed that both the repeated reading and wide-reading groups showed growth in terms of fluency; however, only the wide-reading group showed improvement in comprehension. Kuhn gave two possible explanations for this: one, the wide-reading group read more connected text, and two, the wide-reading group took cues from the intervention and instructor that comprehension, not automaticity, was the goal.

In their review of fluency studies, Kuhn and Stahl (2003) located 58 studies associated with repeated reading, assisted reading, or classroom interventions designed to improve fluency by integrating a variety of techniques. Fifteen of the 58 studies included both a treatment and a control. The researchers found that fluency instruction is generally effective and that both deep and wide methods result in equivalent gains. They also found that where there were gains in fluency, there were similar gains in comprehension in most

cases. Kuhn and Stahl concluded that it was likely the amount of time spent reading connected text, rather than the repetition, that was effective.

Wexler, Vaughn, Edmonds, and Reutebuch (2008) conducted a synthesis of fluency studies published between 1980 and 2005. These researchers were the first to publish a study of this kind that focused on research conducted with secondary struggling readers. They analyzed 19 studies, including 11 that incorporated a single-subject design, two with single groups of students, and six that included treatment and comparison groups. Like Kuhn and Stahl (2003), these researchers concluded that there may not be any differential effects between repeated reading interventions and the same amount of non-repetitive reading for struggling readers in Grades 6 through 12 in terms of increasing speed, word recognition, and comprehension. They also found that although repeated reading interventions increased rate, they had no direct effect on comprehension. As a result of this finding, the researchers recommended that practitioners couple repeated reading with comprehension instruction. The researchers also noted that a majority of the fluency studies did incorporate repeated reading and that narrative text was the most commonly used type of text. These researchers recommended that more high quality research in this area is needed to provide more convincing evidence regarding fluency interventions at the secondary level.

In summary, both deep and wide methods of reading practice are necessary for fluency development, and both methods have proven equally effective in fluency growth for readers of all ages. However, these studies show mixed results when it comes to the impact of repeated reading on comprehension, and, in some cases, show that wide reading has a larger impact. Therefore, if teachers incorporate deep-reading methods such

as repeated reading, they should also consider including instruction aimed at comprehension. When using repeated reading with secondary readers, teachers might also contemplate how to make the instruction engaging.

Repeated reading. Repeated reading is one of the procedures endorsed by the NRP (2000) as a viable tool for fluency instruction. It is also one of the best-known interventions designed to support fluency development (Kuhn & Stahl, 2003), and many other fluency interventions incorporate this method (DeVries, 2015; Samuels et al., 2005). Repeated reading was introduced by Samuels in 1979 as a practical application of the automatic information processing model. It is based on the simple premise that practice makes perfect and consists of reading the same text repeatedly until goals are met. Goals may be either a predetermined reading rate (as measured by words-per-minute) or a predetermined number of readings (NRP, 2000; Paige, 2008; Wexler et al., 2008). Samuels (1979) originally suggested that students reread until a target reading speed was reached.

How many times must a reader read a passage to show improvement? This is debatable. In a review of fluency studies, Wexler et al. (2008) determined the number of readings can range anywhere from one to seven times. Some researchers have suggested the best number is between three and five readings (Dowhower, 1991; Kuhn et al., 2010; Ortlieb & Young, 2016; Samuels et al., 2005). Samuels et al., (2005) said students should reread until they are able to read the passage with speed, accuracy, expression, and comprehension. Care should be taken, however, not to place too much emphasis on speed when using this procedure because prosody and comprehension will almost always suffer (Paige et al., 2012; Rasinski, 2000, 2012). One way to avoid this overemphasis on speed

is through the use of authentic repeated reading through rehearsal for a performance, such as poetry or reader's theater. In these reading situations, the focus shifts to conveying meaning through words and prosody.

Nageldinger (2014) considered the use of this method in a theater setting. He was interested in the effects repeated reading might have on the reading skills of theater students. He conducted a mixed-methods study in which he surveyed 184 theater majors from five universities on their experiences with reading and school activities. He then conducted in-depth interviews with five participants. Results indicated that theater activities have a definite perceived impact on struggling readers. Repeated reading and its impact on fluency and prosody were mentioned in participant interviews.

Several researchers have called attention to the impact repeated reading can have on prosodic reading (Allington, 1983; Dowhower, 1987, 1991; Logan, 1997; Ortlieb & Young, 2016; Schreiber 1980). Dowhower (1991) described the method as "the practicing of text until it is fluid, flowing, and facile" (p. 171) and compared it to the learning of a new song. She suggested that repeated reading assists students in decreasing the number of pausal intrusions and helps students as they learn to compensate for the absence of prosodic cues in text. Logan (1997) described repeated reading as a sort of problem-solving technique that allows the reader to break down the complexity of the task and master something new with each reading.

Blum and Koskinen (1991) pointed out that repeated reading also fosters a sense of expertise in students. According to these authors, students not only acquire content knowledge and increase strategy knowledge but they also gain motivation as they experience the success that comes with practice. The authors also described the

importance of variety in integrating this procedure in the classroom: variety in instructional setting, variety in setting purposes for rereading, variety in materials, and variety in modalities.

There are two types of repeated reading: assisted repeated reading and non-assisted or unassisted repeated reading (Dowhower, 1987; Kuhn & Stahl, 2003; Stahl & Kuhn, 2002; Taguchi et al., 2016). When there is modeling of fluent reading, either by a teacher, parent, peer, tape recording, or some other method, it is assisted. When no modeling occurs, it is unassisted. Although Samuels's original method used unassisted repeated reading, many researchers have claimed assisted repeated reading appears to be the more powerful approach (Kuhn & Stahl, 2003; Morra & Tracey, 2006; NRP, 2000; Rasinski, Homan, & Biggs, 2009; Stahl & Kuhn, 2002; Wexler et al., 2008).

Chomsky (1976), a contemporary of Samuels, experimented with students using assisted repeated reading. Chomsky's four-month long study took place in a middle class, suburban school in the Northeast. Participants included five third-grade students, three boys and two girls, who had normal IQs and had acquired phonetic skills, but were reading 1−2 years below grade level. The students "hated reading" (p. 288) and avoided it whenever possible.

Chomsky's approach was designed to capture the students' attention and radically increase the amount of reading they engaged in. Chomsky had the students memorize self-selected books by listening repeatedly to tape recordings while reading along with the hard copy of the text. Each day for about 15 minutes, students had to read along to the entire story at least once, then were instructed to go back and practice any part that gave them trouble. Chomsky carefully selected books that were attractive to the students and

ranged from second- to fifth-grade reading level. She directed students to choose a book that was “too hard to read straight off but not so hard as to be out of reach entirely” (p. 290).

According to Chomsky, pre- and posttest scores showed encouraging gains for this four-month long study. The Durrell Analysis of Reading Difficulty showed gains in oral reading of several months to a year. The Gates-McKillop subtest Phrases: Flash Presentation showed gains of .9 for two students and 1.1 for one student. On the Metropolitan Achievement Test, administered four months after the study, students showed gains of from .6 to 1.2 over scores from the previous year. Students’ rate of progress for third grade was substantially higher when compared with first and second grades. The researcher also noted students’ comments that listening to the text while looking at it was helpful. Furthermore, both parents and teachers reported that students wanted to read and showed interest in reading a variety of texts. Chomsky’s assessment of the overall impact of the intervention was that children had been given access to reading, and, with that, they experienced feelings of success and progress.

Carbo (1978), who also experimented with assisted repeated reading, used variations of what she called the “talking book method” (p. 267). Unlike Chomsky, who used commercially recorded books, Carbo’s method involved teacher-recorded books that incorporated special recording procedures to better enable the learning-disabled students she worked with to follow along and read successfully. These techniques included cues for the listener, such as added page numbers and pauses to allow time for page turns; reading with an emphasis on clarity, expression, and phrasing; and tactual reinforcement such as directing students to move their fingers under the words as they read.

Carbo (1978) experimented with three variations of the talking book method. The second method, in which she created individual recordings of text excerpts for eight learning-disabled students in second through sixth grade, proved to be the most successful. This method involved selecting texts suitable for the individual reader and modifying the reading rate and phrase length on the recording to suit the skills of the reader. Students listened to the recording three to four times, read it silently a time or two, then read it back to the researcher. Although time consuming, in three months, the average gain by students was eight months. The highest gains were with sixth-grade students who were able to successfully read texts at or near grade level even though their actual reading level was 3−4 years below grade level. Carbo also noted that after working with the tapes, students were able to discuss texts with interest and good comprehension. As a result, students realized that reading could be stimulating and enjoyable.

Dowhower (1987) studied the effects of two repeated reading procedures—an assisted, read-along procedure and an unassisted, independent practice type procedure—on second-grade transitional readers' oral reading performance. The 17 participants were randomly assigned to either the assisted or unassisted group and worked through five sequences of repeated reading. Each sequence consisted of reading a passage until a criterion speed of 100 words per minute was reached. Students met with the researcher four to six times per week for approximately 15 minutes per session until the sequences were completed. Results of this seven-week study showed transitional readers' rate, accuracy, comprehension, and prosodic reading were significantly improved by repeated reading practice, regardless of the procedure. However, students using the assisted, read-along procedure showed more growth in prosody.

Rasinski (2001) also experimented with both assisted and unassisted repeated reading. He compared the effects of a repeated reading condition with a listening-while-reading condition on fluency in third-grade students. Twenty students were selected for the study. Subjects were paired with another student of similar reading ability. The treatment consisted of two four-day cycles, and each pair received both treatments, one per cycle. The repeated reading condition involved one student from the pair reading aloud in the presence of the teacher. The listening-while-reading condition required the student to listen and follow along silently while the teacher read aloud. Rasinski found that both methods were equally effective in improving fluency, and significant gains were made for rate, $F(1,19) = 28.71$, $p < .0001$, and accuracy, $F(1,19) = 10.83$, $p < .01$.

The social context of middle and high school makes fluency interventions in secondary settings even more complex. Because of their interest in these dynamics, Goering and Baker (2010) conducted a mixed-methods study that examined the effects of dramatic oral reading on both fluency and comprehension and how the social context of high school affected the intervention. The study took place in newly formed 10th-grade reading intervention classrooms, taught by a first-year teacher. The study involved 17 participants, including seven English Language Learners and three students receiving Special Education services.

The intervention consisted of six, four-day performance-based cycles utilizing cooperative repeated reading in which students read with and received feedback from peers. The intervention was highly structured and included a performance on the fourth day of each cycle. Students were pre- and posttested using the GORT-4. Results showed significant differences in comprehension ($t(16) = -3.65$, $p<.05$) with an effect size of

r=.67. There were also significant differences in fluency (t (16) = -4.44, p<.05) with an effect size of r=.74. The study included follow up interviews with students; this qualitative component suggested that the positive conditions of an intervention must outweigh the negative conditions in order for the activities to have their desired effect. The researchers concluded by recommending further studies that incorporate a control group and include larger populations.

Like most fluency activities, repeated reading is commonly associated with students in the elementary grades (Morra & Tracey, 2006; Paige, 2011). Although research on repeated reading at the secondary level looks encouraging, it is limited and more studies are needed (Paige et al., 2012; Wexler et al., 2008). Both methods, assisted or unassisted, have been found effective according to the studies cited here. Additionally, the social context should be carefully considered when repeated reading is used in secondary settings.

Choral reading. Choral reading has appeared in the literature as early as the 1930s, when it was defined as "a balanced group of voices speaking poetry and other rhythmic literature together with a unity and beauty born of thinking and feeling as one" (Robinson & Thurston, 1936, p. 23). The practice was also called choral speaking. The text most often used was poetry, and the purposes of the activity were to promote the enjoyment of literature, artistic expression, and the development of a communication skill (Fennimore, 1971). In fact, there were performing choral reading groups or verse choirs with as many as 100 members (Stassen, 1969). These groups were much like singing choirs in that a variety of groupings were used, including solos, duets, trios, and whole group. Additionally, the vocal quality of the speakers was used to create effect and

meaning (Cullen, 1968). Some of these performances included imaginative staging and musical accompaniment as well. Originally, choral reading was used with students of all ages (Cullen, 1968; Fennimore, 1971; Stassen, 1969).

Today, choral reading has been defined as students reading a selected passage in unison, with the teacher's voice taking the lead (Rasinski, 1989). Whole-class choral reading (WCCR) is choral reading in which the whole class reads together in unison with the teacher (Paige & Magpuri-Lavell, 2014). It is reading "with one voice, like a choir" (p. 88), which takes practice and may require several restarts. The teacher is like the choir director, setting the pace and ensuring that everyone stays together (Cullen, 1968; Paige, 2008). Cullen (1968), in his introduction to choral reading for novice directors, cautioned that "there may be some initial floundering, but enjoyment will come quickly" (p. 395).

Because everyone is reading together, this strategy provides readers with a "tent of anonymity" (Paige, 2011, p. 13) and the opportunity to practice and take risks without fear of being ridiculed (Nageldinger, 2014). This is especially appealing to struggling readers and English Learners (McCauley & McCauley, 1987). Choral reading also provides the support that is critical for fluency development (Rasinski, 1989). Paige (2011) considered the irony in the fact that reading aloud in class, a task that struggling readers avoid, seems to be "well tolerated" (p. 15) when this method is used.

Choral reading involves several steps, and these steps can be modified according to the situation. A structured method was suggested by Paige et al. (2012), who experimented with the method in secondary settings: First, select a text that is fun, interesting, and part of the curriculum. Next, provide copies to all students and introduce

the text including unknown vocabulary, interesting text features, etc. Then read the text to the students expressively. Read it again, this time having the students echo read, which involves a teacher reading a short phrase or sentence and the student echoing the phrase back, using the same rate and intonation. Finally, perform a choral reading. Listen for areas that need improvement, give students feedback, and repeat the choral reading, several times if necessary.

There are several ways to vary this strategy. One is to use antiphonal reading, which is when the class is divided into groups, and each group is assigned a part of the text to read (Paige, 2011). The groups take turns reading their part chorally until the passage is complete. Echo reading is another variation. Echo reading occurs when one person reads a line or section, then the group repeats the line or section in unison. Choral reading can be used in a deep-reading format or a wide-reading format. In a deep-reading format, the same text is read day after day for several days. In a wide-reading format, the text is read once, then followed up with a different text the next day (Paige & Magpuri-Lavell, 2014).

There are many benefits to using choral reading. One benefit of this technique is that it is highly efficient because all students practice at the same time (Paige & Magpuri-Lavell, 2014). Contrary to the practice of round robin reading, which is commonly found in many classrooms and involves one person reading at a time, in choral reading, everyone is practicing (McCauley & McCauley, 1987). Choral reading is also flexible because it can be used with many different grouping dynamics and with readers at different levels. It can help to develop a sense of community in the classroom because students are united in a common purpose (Hall, 1987; Rasinski, 2010). Choral reading

might also help build the confidence necessary for students to read independently (Hall, 1987; McCauley & McCauley, 1987).

Choral reading can be used with older students in the content areas to scaffold the reading of complex expository texts that students are required to read (Paige, 2008). One way to incorporate choral reading into a content area classroom is to use texts taken from the curriculum that will be taught in the near future so that students will become familiar with important words, gain background knowledge, and improve reading skills, all at the same time (Paige & Magpuri-Lavell, 2014). Another benefit of using this strategy in the upper grades is that it provides teachers who are not experienced in teaching reading a strategy that is easy to implement and can support their struggling readers.

Lauritzen (1982) experimented with choral reading as an instructional tool for use with large groups of children to provide fluency practice. Lauritzen's method involved having second-grade students practice poems for 15 minutes a day for two weeks; she reported that students were able to master difficult material, reading it "fluently, errorlessly, and joyfully" (p. 456). Lauritzen modified Samuels (1979) method of repeated reading because she felt it required too much record keeping and was difficult to use with a whole group because it had children select their own stories based on personal interests.

In her modification, Lauritzen suggested that the teacher select the text; she recommended selections with a definite rhyme, strong rhythm, a compelling sequence, and oral literature patterns, such as repeated syntax. She also used the method with a whole group and incorporated modeling, echo reading, choral reading, performance, and gradual release of responsibility.

Bradley and Thalgott (1987) used a choral, repeated reading approach with a fifth-grade student, Charles, whom they identified as a dyslexic child with reading anxiety. They described their approach as "success-oriented reading instruction" (p. 349) designed to break the vicious cycle of reading anxiety. The method included the following steps: (1) teacher selects a book of interest, (2) teacher models by reading the first paragraph as the student listens and follows along, (3) student rereads the paragraph silently, (4) teacher and student read the paragraph chorally, (5) student reads the paragraph aloud to the teacher, (6) teacher and student discuss the paragraph, (7) teacher proceeds to the next paragraph, and (8) teacher repeats steps 2 through 6. The researchers reported that this approach doubled Charles's reading rate, greatly improved his fluency, and reduced his miscues to one in fifty words. He seemed more relaxed and engaged and even requested to read again.

More recently, Paige (2011) conducted a quasi-experimental study in which WCCR was implemented on a daily basis for six weeks in language arts classrooms. The researcher investigated the effects of the intervention on word reading and oral reading fluency (ORF). He also explored student and teacher perceptions of the intervention. Participants included four teachers and 112 sixth-grade students in a large, urban district in the southeastern United States. Two-thirds of the students were struggling readers, 89% were African American, 7% were Hispanic, 2% were European, and 2% were Asian.

Each week of the six-week intervention period, a new 300-word passage was introduced and the passage was read repeatedly through the week using a gradual release of responsibility method. Narrative texts were selected from the district literature

textbook for sixth grade, with the expectation that students should be able to read fluently from the textbook. The method suggested by Paige incorporates prereading, during reading, and after reading activities that occurred over the course of one week. These activities included discussion, modeling, repeated reading, choral reading, and some direct instruction in fluency. Overall, results suggested all readers, whether struggling or proficient, benefited from the treatment and made gains in fluency, with the largest effect sizes occurring with the struggling readers.

Paige (2008) also conducted a study in which he used WCCR in a different context. Participants included 115 seventh-grade students and three science teachers. He used 30 science passages, 306 words each, that covered content currently being taught in a wide-reading format (five passages for each week of the six-week intervention). There were also 43 targeted vocabulary words incorporated into the passages, which were pulled from grade-level science texts. In this context, Paige found that choral reading did not have an effect. He attributed the result to several things: too little time exposed to the intervention daily, which he refers to as “dosing”; the wide-reading format; or simply that whole-class choral reading was not a viable strategy to use in this context.

In an action research study, DiSalle & Rasinski (2017) implemented the Fluency Development Lesson (FDL), an intensive fluency routine that incorporates choral reading, with six low-achieving fourth-grade students. The FDL is a daily lesson in which students achieve fluency of a new 100−200 word text each day. In this case, the researchers added reciprocal teaching and comprehension activities to add a more intense focus on comprehension. They also incorporated performances and homework, which consisted of reading to family members at home. The technique was implemented for 20

minutes a day, 4−5 days per week over the course of three months. Poetry was used for the daily text. In 12 weeks, students made, on average, slightly over a year's growth in reading comprehension. Oral reading fluency increased from 69.2 WCPM to 96.8 WCPM.

In summary, the research on choral reading is limited at best. In its infancy, the method was used with students of all ages and for purposes beyond the development of reading skills. As an instructional technique aimed at improving reading skills, it has been primarily used in elementary settings and has not been the focus of research until recent years. In the past decade, it has shown promise with students in the upper grades (Paige et al., 2012), but there is still a need for research in this area. According to the literature, choral reading is a good instructional choice for struggling readers in that it offers a safe place to practice developing reading skills.

Performance. Performance can be effective when incorporated into fluency instruction because it encourages the development of prosody and creates an authentic reason for fluency activities such as repeated reading and choral reading (Rasinski, 2012; Rasinski & Hoffmann, 2003; Rasinski & Young, 2017). Because of prosody's important role in fluency, Young and Nageldinger (2014) recommend that fluency activities should include both a practice component that builds automaticity and a prosodic component that encourages expression. Performance activities include both.

Some examples of performance activities include reader's theater, poetry readings, and speeches. Choral reading also includes a performance aspect (Paige, 2011). Other possibilities include incorporating song lyrics, open mike days, and reading aloud to younger students (Sample, 2005). Typically, performance activities such as this are

used in a very limited way (Worthy & Broaddus, 2002), and when they are incorporated, struggling readers are rarely given speaking parts, reinforcing their already low self-confidence. When performance is regularly integrated into the classroom, all students have an opportunity to participate. Performance activities also tend to be motivational, and for older struggling readers, motivation is essential (Rasinski, 2006; Sample, 2005). In addition, when readers know they will perform, they recognize an authenticity to the act of reading (Rasinski, 2012; Rasinski & Hoffmann, 2003; Rasinski & Young, 2017).

Rehearsing for a performance is a form of repeated reading that does just that, and it is one in which the focus is not on speed, but on conveying meaning through words and prosody (Nageldinger, 2014; Paige et al., 2012; Rasinski, 2006; Rasinski et al., 2005). Many struggling readers hate the thought of reading something once, much less repeatedly. But by making it authentic in preparation for a performance, many of these students will happily read a text multiple times (Paige, 2011; Rasinski & Padak, 2005).

Young, Valadez, and Gandara (2016) studied the effects of two fluency-building activities that included performance components. Their study, which included 51 second-graders in a Title 1 school in the rural southern United States, compared three conditions: Rock and Read, Rock and Read plus Reader's Theater, and a comparison group. Rock and Read includes repeated reading, choral reading, sing-along, and performance using song lyrics as the text. One classroom received this treatment for 15 minutes per day for four days per week. The Rock and Read plus Reader's Theater classroom spent 10 minutes a day for four days a week on Rock and Read plus five minutes a day for two days a week on Reader's Theater using poetry as scripts. The activities lasted four weeks.

The researchers measured expression and volume, phrasing, pace, smoothness, and word recognition automaticity. Results showed statistically significant interaction effects on three of five measures: expression and volume, phrasing, and pace (not to be confused with word recognition automaticity). The researchers concluded that both Rock and Read and Rock and Read plus Reader's Theater were powerful fluency-building activities, and that the performance aspect in both might have contributed to the gains made because students were practicing with a purpose. In speculating as to why the gains in the Rock and Read were slightly larger, researchers suggested that it may have been the difficulty of the texts used. The poems used during the Reader's Theater activities were relatively easy, but the songs used for the Rock and Read activities were more difficult. Previous research has shown that the use of more difficult texts with scaffolding provided might be more effective than texts that are too easy (Kuhn et al., 2006; Stahl & Kuhn, 2002).

Nageldinger (2014) surveyed and interviewed college theater arts majors and found that involvement in theater activities was perceived to have been responsible for increased engagement, improved prosody, more close reading, improved comprehension, and more overall reading among other things. He also found the safety of the theater community to be a theme among the students he interviewed: "Several of the participants thought back fondly on tossing ideas back and forth in a safe space in search for meaning. This is in stark contrast to the horror several of them expressed having felt at the prospect of having to read aloud before their peers in class" (p. 199). This is similar to the tent of anonymity that choral reading provides to struggling readers (Paige, 2011). Because of

the many benefits theater offers, Nageldinger recommended that teachers of all grades may want to include theater production as part of their curriculum.

Simply put, performance might be thought of as the icing on the cake, so to speak. When added to already sound fluency instruction, the impact can be significant for readers of all ages. Rasinski (2012) made a convincing argument for these types of activities, which he considers to be a combination of "scientific principles and artistic approaches" (p. 521). He stated that powerful approaches such as these impact not only reading achievement but also reading dispositions.

Text selection. When the goal is fluency development, text selection is very important. Texts should be carefully chosen with the reader and the goal in mind. Factors that should be considered include text difficulty or level, length of the text, text genre, and appeal of the text. Also, texts that lend themselves to being read aloud are appropriate for fluency instruction.

One of the first things to be considered is the difficulty of the text. Allington (1983) said that in many classrooms, successful readers are often reading texts that are easy for them, which facilitates fluency development; struggling readers, on the other hand, are given materials that are too difficult, which may inhibit fluency development. However, materials that are too easy might also inhibit growth (Stahl & Kuhn, 2002). When teachers make decisions on text difficulty, they must keep in mind the instructional technique that will be used, as well as the amount of support that will be offered to readers (Allington, McCuiston, & Billen, 2015). The idea of providing scaffolding to students as they grapple with difficult texts is consistent with Vygotsky's Zone of Proximal Development (Vygotsky, 1978). According to this construct, the teacher

scaffolds the reading of the text more or less according to the needs of the student, eventually releasing responsibility of the reading over to the student entirely.

Kuhn et al. (2006) examined the effects of two instructional approaches designed to improve the reading fluency of second graders and concluded that children can benefit from reading texts beyond their instructional level if appropriate scaffolding, including modeling and immediate feedback, is provided. This year-long study was conducted in eight moderate- to high-poverty schools in Georgia and New Jersey; 24 classrooms participated. Each of the schools was randomly assigned to one of three conditions: (1) an intervention based on fluency-oriented reading instruction (FORI) that involved scaffolded, repeated reading of one text per week; (2) a wide-reading approach that involved scaffolded instruction and limited repeated reading of three texts per week; and (3) control classrooms. Results indicated that there were no significant differences between the FORI method and the wide-reading method. When they were compared to the control classrooms, both interventions resulted in significant effects in sight word efficiency and comprehension; however, only the wide-reading condition resulted in significant improvement over the control classrooms in fluency growth. As a result, the researchers concluded that both methods were successful and recommended either one for classroom use, depending on available resources.

The researchers suggested that the benefits of both methods of fluency instruction could be attributed to three features of the instruction. First, challenging texts were used. Second, appropriate scaffolding was provided to support students as they read the texts. Third, students spent more time reading in both treatment conditions as compared to control classrooms. As for the texts used, grade level texts were selected because the

researchers determined that the amount of scaffolding provided would allow children, even struggling readers, to successfully read the text by the end of the week. As is commonly found in other studies on fluency interventions (Edmonds et al., 2009; Wexler et al, 2007), narrative texts were used predominantly.

There are other factors to consider, aside from difficulty, in selecting texts for fluency instruction, including the length. Recommendations vary in this area, but Dowhower (1987) suggested short texts, especially initially. Samuels (1994) claimed it depended on the skill of the reader, and texts could be as short as 50 words or as long as 500 words. The length of text might also be determined by the type of fluency instruction and the amount of time available for the instruction.

The possibilities of appropriate genres for fluency instruction are endless. Suggestions include poetry, song lyrics, chants, rhymes, plays, monologues, dialogues, articles, and letters. By using a variety of texts, teachers are exposing students to a multitude of genres (Rasinski, 2006). Because a student's fluency may vary according to the type of text he or she is reading, Kuhn and Schwanenflugel (2019) stress the importance of assisting students in their reading of "a range of texts across subjects" (p. 365). Poetry is a good choice for children who struggle because it is typically short. It is also ideal for prosody instruction because of the rhythm, rhyme, and phrasing (Rasinski, 2000; Rasinski & Young, 2017). Narrative texts seem to be the most commonly used in fluency instruction (Wexler et al., 2007); however, providing scaffolding to students as they attain fluency across a broad range of texts may be more beneficial to secondary students, who are expected to read a wide variety of texts (Kuhn & Schwanenflugel, 2019).

In summary, the selection of texts in fluency instruction should not be an afterthought. As Allington (2013) pointed out, "Struggling readers just participate in too little high-success reading activity every day. This is one reason so few struggling readers ever become achieving readers" (p. 525). By incorporating carefully selected texts into research-based fluency instruction, teachers can create these high-success situations for their struggling readers.

The teacher. The teacher's role in fluency instruction should be that of a reading coach. Not only is a great deal of practice in reading required but a good coach is also necessary for fluency development, especially for struggling readers (Nichols et al., 2008; Rasinski et al., 2009; Sample, 2005; Taguchi et al., 2016; Worthy & Broaddus, 2002). Rasinski et al. (2009) describe the importance of a good reading coach:

> Although on the surface it may seem that the reader develops fluency simply by finding a quiet spot and practicing a text several times through, the reality is that there needs to be a coach to model, guide, and encourage in order to make that practice as valuable as possible. (p. 194)

Ideally, the teacher, acting as a coach, incorporates what is known as the gradual release of responsibility in which the learner first observes a skilled model, then practices with assistance, then performs independently. In fluency instruction, a model is beneficial for many reasons. A good model can demonstrate correct pronunciation, appropriate rate, prosody, and even correct pausing and parsing (Allington, 1983; Kuhn & Stahl, 2003; Paige, 2011; Paige & Magpuri-Lavell, 2014; Rasinski, 1989; Rasinski, 2000; Samuels et al., 2005; Taguchi et al., 2016; Worthy & Broaddus, 2002). A good practice might be to share fluent models as well as disfluent models and then discuss each with students

(Rasinski et al., 2009). Teaching students to recognize what made each reading meaningful or not helps them to recognize those traits in their own reading. To illustrate the power of modeling, Allington (1983) described what he calls “memory reading” (p. 558), in which prereaders are able to “read” a story that has been read to them repeatedly as they turn the pages of a book.

According to Rasinski and Young (2014), the most important part of the gradual release process is the guided practice portion. Throughout the gradual release process, teachers acting as fluency coaches also provide feedback to their readers (Rasinski, 1989; Rasinski & Hoffman, 2003; Samuels et al., 2005). Samuels et al., suggest effective feedback is that which is “selective, delayed, and contextually oriented” (2005, p.6).

Effective fluency instruction is that which is meaning oriented, authentic, intentional, intensive, and synergistic. It includes direct instruction, modeling, feedback, and support and provides students with opportunities to repeat reading. Both wide and deep methods of implementation are effective, and with appropriate support, difficult texts can become accessible for students. Strategies such as repeated reading and choral reading have proven successful, and when performance is incorporated, it lends authenticity to these techniques. A good teacher, who takes on the role of a reading coach, is key.

Present Study

Much of the research that has focused on the area of fluency has been conducted in elementary settings. However, many students in the secondary grades continue to struggle in this area. Poor reading skills may affect older students tremendously in high

school and beyond. Compounding the problem is the lack of understanding among secondary teachers about fluency and fluency instruction.

The present study seeks to fill a critical gap in the literature on secondary literacy interventions by providing additional insights into what elements of fluency instruction are effective with older struggling readers.

Specifically, this study seeks to answer the following questions:

1. What effect does the implementation of the Secondary Fluency Routine have on reading fluency in struggling middle school readers?

2. What effect does the implementation of the Secondary Fluency Routine have on reading comprehension in struggling middle school readers?

CHAPTER III

Methodology

The purpose of this chapter is to describe the procedures used in this quantitative study. The study was designed to examine the effects of the Secondary Fluency Routine (SFR) on the oral reading fluency and comprehension of middle school students enrolled in reading intervention classes. A quantitative study was appropriate because the questions sought to identify cause-and-effect relationships (Johnson & Christensen, 2014); in addition, quantitative data allowed the researcher to draw inferences about the effectiveness of the SFR intervention when it is implemented with struggling middle school readers.

Research Questions

The following research questions guided the study:

1. What effect does the implementation of the Secondary Fluency Routine have on reading fluency in struggling middle school readers?

2. What effect does the implementation of the Secondary Fluency Routine have on reading comprehension in struggling middle school readers?

Study Design

This study used a quasi-experimental design, which is defined as "an experimental research design that does not provide for full control of potential confounding variables, primarily because it does not randomly assign participants to comparison groups" (Johnson & Christensen, 2014, p. 357). Random assignment was not possible because the participants came from classes that were already formed. More specifically, the design was a nonequivalent comparison-group design (see Table 1),

which is “a design consisting of an experimental group and a nonequivalent untreated comparison group, both of which are administered pretest and posttest measures” (p. 358).

Table 1

Nonequivalent Comparison-Group Design

Group	Pretest Measure	Treatment	Posttest Measure
Treatment	0_1	X_1	O_2
Comparison	0_1	X_2	0_2

Note. Adapted from Johnson, R.B. & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Los Angeles, CA: Sage.

Research Site/Context

This research was conducted in a 4A school district located in a rural area in the southeast United States. Due to the effects of Hurricane Harvey on the school district in August of 2017, the district received a “Not Rated: Harvey Provision” for an overall rating by the Texas Education Agency (TEA) for the 2017−2018 school year. In addition, the district was assigned a B rating in each domain of the accountability system, including Student Achievement, School Progress, and Closing the Gaps.

District enrollment for the 2018−2019 school year was approximately 1909 students in grades pre-kindergarten through Grade 12. Table 2 provides a breakdown of district demographics according to beginning of year enrollment data.

Table 2

Demographic Data for District

African American	Hispanic	White	American Indian	Asian/Pacific Islander	Economically Disadvantaged	Limited English Proficient	At-Risk
9.09%	38.17%	49.50%	.31%	.36%	55.56%	13.37%	40.05%

The district was comprised of three campuses; the study was conducted at the middle school campus, which consisted of seventh and eighth grades. Enrollment on this campus at the time of the study was 303. Table 3 provides a breakdown of campus demographics according to beginning of the year enrollment data.

Table 3

Demographic Data for Campus

African American	Hispanic	White	American Indian	Asian/Pacific Islander	Economically Disadvantaged	Limited English Proficient	At-Risk
7.59%	38.28%	50.50%	.00%	.66%	56.44%	13.53%	46.20%

For TEA accountability purposes, the campus received a rating of Met Standard, and Distinction Designations earned included the following: Academic Achievement in Mathematics; Academic Achievement in Social Studies; Top 25 Percent: Comparative Academic Growth; Top 25 Percent: Comparative Closing the Gaps; Postsecondary Readiness.

Table 4 includes information on the State of Texas Assessments of Academic Readiness (STAAR) passing rates for the campus for the 2017−2018 school year.

Table 4

Campus STAAR Passing Rates, 2017-2018

Subject	Campus	State
7th Math	62%	71%
8th Math	97%	78%
7th Reading	69%	72%
8th Reading	81%	76%
7th Writing	63%	67%
8th Science	69%	74%
8th Social Studies	64%	64%

Participants

Selection. While it is ideal to use random sampling for experimental research so that findings can be generalized to the population, this is not always possible, especially when research is conducted at the classroom level. In this study, purposive sampling was used, a nonrandom sampling technique whereby a researcher selects participants with specific characteristics (Johnson & Christensen, 2014; Mertler, 2016). Because the researcher was seeking to determine the effect of the SFR on struggling readers, all students enrolled in the six reading intervention classes were selected to participate in the study.

Students were placed in the reading intervention classes primarily because they had failed the state mandated reading assessment the previous year. The Texas Education Agency initiated the State of Texas Assessments of Academic Readiness (STAAR) in 2012. It is administered to students in third through eighth grades and to students taking Algebra I, English I and II, U.S. History, and Biology. The test places an emphasis on readiness standards, which are the skills that are essential for success in the current grade level and important for the next grade level. These standards also support college and career readiness. Students are given a time limit of four to five hours to complete each STAAR assessment (Texas Education Agency, n.d.). Other factors considered for placing students in the reading intervention classes were English Learner status and student scores on I-Station, the program used as the Universal Screener for the campus.

Power analysis. Prior to conducting the study, the researcher determined the number of participants needed by conducting an a priori power analysis. Conducting this analysis is important so that the sample size is large enough to allow the researcher to detect effects and draw accurate conclusions. For full power (100%), the required sample size was 54; however, to achieve adequate power (>80%), the analysis indicated that 20 subjects were needed to detect a medium-sized effect for the traditional .05 criterion of statistical significance.

Description. Due to attrition, at the time of posttesting, 39 participants had completed the entire study. The attrition rate was approximately 81%. Students ranged in age from 12 years, three months to 15 years, two months. The sample consisted of .03% African American, 72% Hispanic, 23% White, .03% Other, 77% Economically

Disadvantaged, and 51% LEP. Table 5 includes a description of treatment and comparison groups by grade level, LEP status, and gender.

Table 5

Demographic Data for Sample

	Grade		LEP Status		Gender	
	7	8	No LEP	LEP	Female	Male
Treatment (n=22)	45.5% (n=10)	54.5% (n=12)	36.4% (n=8)	63.6% (n=14)	27.3% (n=6)	72.7% (n=16)
Comparison (n=17)	5.9% (n=1)	94.1% (n=16)	64.7% (n=11)	35.3% (n=6)	41.2% (n=7)	58.8% (n=10)

Intervention teacher. At the time of the study, all reading intervention classes were taught by the same teacher, who was carefully selected by the principal. The teacher, who was beginning her fourteenth year as a classroom teacher, graduated with a Bachelor of Science degree. Her teaching certifications included ECE-4 Generalist and 4−8 English Language Arts and Reading (ELAR). Her first eight years were spent teaching fourth-grade ELAR and Texas History. She also spent four years teaching sixth-grade ELAR. At the time of the study, she was beginning her second year as a middle school teacher. Although she had no former experience as an intervention teacher, she did have experience teaching reading to younger students and some knowledge of fluency. In addition, she had experience with some of the techniques used in the SFR, including repeated reading and choral reading.

The principal, who was beginning her second year in this role at the time of the study, restructured the reading intervention program as a result of a goal listed in the

2018−2019 Campus Improvement Plan. The goal, which was focused on student achievement, specified that reading intervention classes would be restructured and would utilize a research-based program. The goal also stated that data would be utilized for placement in the intervention classes. Prior to the 2018−2019 school year, there were four intervention classes. Each class was taught by a different teacher, and there was no set curriculum, leaving teachers to create their own.

Ethical Issues

Prior to conducting the study, the researcher contacted appropriate school personnel to obtain permission. After permission was granted from the school, the researcher sought and received approval through the university's Institutional Review Board (Appendix A).

There were minimal risks involved with the study, including the possibility of test anxiety on the part of some individuals. However, this was not anything different from what they would experience as a regular part of the curriculum. The intervention was delivered to the intervention group during the first semester of the school year, and so that the comparison group might also receive any benefits from the intervention, the teacher implemented the SFR with the comparison group during the second semester of the school year.

Although there is always a possibility of breaching confidentiality, attempts were made to preserve anonymity. Students were assigned numbers for data reporting. Data were stored either electronically in an encrypted environment or in a locked file cabinet that was accessible only to the researcher. Individual data were not shared with others

except in this dissertation, and because numbers were used, rather than names, confidentiality was maintained.

Instrumentation

The researcher collected data for both treatment and comparison groups to assess student growth in the reading domains of fluency and comprehension by administering pre- and posttests. Pretest assessments were conducted in August, and posttest assessments were conducted in December. The pretests were conducted immediately before the intervention, and the posttests were conducted immediately after.

Both pretests and posttests were administered by the teacher, who was trained by the researcher in the use of the instrument prior to administration. Each student was assessed individually, and the teacher recorded students as they read so she could listen to the reading again if necessary. The recordings were also used to establish inter-rater reliability. To accomplish this, the researcher randomly selected 20% of the students and assessed them using the recordings. Chronbach's alpha (*a*) was calculated using the teacher's and researcher's scores; results are displayed in Table 6. The statistics suggested excellent inter-rater reliability for all measures except pre-comprehension, which was still considered good (Koo & Li, 2016).

Table 6

Intraclass Correlation Coefficients for Outcome Measures

Measure	Intraclass Correlation Coefficient
Prerate	.91
Postrate	1.00
Precomprehension	.89
Postcomprehension	.97
Preaccuracy	.97
Postaccuracy	1.00
Prefluency	.98
Postfluency	1.00
PreORI	.95
PostORI	1.00
Preprosody	.99
Postprosody	.99

Note. Intraclass Correlation Coefficient as measured by Chronbach's Alpha, <0.50 = poor; 0.50-0.75 = moderate; 0.75-0.90 = good; >0.90 = excellent

The Gray Oral Reading Test, Fifth-Edition (GORT-5), was used to measure the dependent variables of fluency and comprehension (Wiederholt & Bryant, 2012). The GORT-5 is designed to assess individuals age six to 23 years and takes anywhere from 15

to 45 minutes to administer, depending on the skill of the reader. This test yields five scores: rate, accuracy, fluency, comprehension, and an Oral Reading Index (ORI). The student is also given a prosody score ranging from 1 to 4. The prosody score is based on expression, volume, phrasing, smoothness, and pacing. The GORT-5 includes two equivalent forms, Form A and Form B, each of which consists of a series of passages of increasing difficulty with five comprehension questions. Form A was used as the pretest measure, and Form B was used as the posttest measure.

According to the *Examiner's Manual* (Wiederholt & Bryant, 2012), the alternate forms procedure was used to determine whether Form A and Form B are equivalent. The alternate forms correlation coefficient for rate, accuracy, fluency, and comprehension was averaged across all age intervals; the average exceeds .85, which is considered strong. The alternate forms correlation coefficient for the ORI was .93, which is also very strong, indicating that the testing forms for pre- and posttest were reliable.

Hall and Tannebaum (2012) reviewed the GORT-5 and concluded that reliability and validity of the instrument are strong, and that evidence is provided "across varying samples in 33 states, two different forms, and over time" (p. 519). In the Examiner's Manual, Wiederholt and Bryant (2012) describe five types of correlation coefficients that were calculated to measure reliability. These include coefficient alpha, alternate forms (immediate administration), test-retest, alternate forms (delayed administration), and inter-scorer reliability. Reliability indexes ranged from .82 to .99, indicating that users of this test can be confident in the scores obtained.

As for validity, the manual provides evidence for content validity, construct-related validity, and criterion-related validity. The content validity section describes the

rationale for story selection and scoring methods and compares these to other leading reading tests that include passages. An item analysis was conducted to examine item difficulty, discrimination, and bias. The acceptable range for item difficulty is between 15% and 85% for all ages, and scores fell within this range.

Entry points for testing are determined by the student's grade level. Students in Grades 6 through Grade 9 begin with Story 4. As the student reads each passage aloud, the administrator records the amount of time in seconds it takes to read the entire passage. If the administrator would like a more in-depth analysis of student reading errors, there is an optional section on the Examiner Record Booklet in which to mark the student's miscues, referred to as Deviations from Print. For the purposes of this study, the researcher did not require the teacher to complete this section.

The administrator then removes the passage and reads the five questions and multiple-choice answers to the student and records the student's choices. When a basal and ceiling have been reached (based on the fluency score), the administrator concludes the testing. Raw scores are recorded for rate, accuracy, fluency, and comprehension. The raw scores are then converted and summed to determine the student's ORI. Normative scores include grade and age equivalents, percentile ranks, scaled scores, and the ORI.

Materials needed for administration include one copy of the Examiner's Manual, one copy of the Student Book, and one copy per student of the Examiner Record Booklet, Form A and Form B. In addition, a timer was utilized to time students as they read, and a voice-recording device was utilized to record students as they read.

Procedure

The researcher and teacher met prior to the start of the intervention and used the school calendar to plan dates for pretesting, posttesting, beginning and ending dates for the intervention, and fidelity check visits. The timeline for the study is presented in Figure 2.

Activity	Date
Meet with teacher	July 26, August 4, August 17
Administer Pretest (GORT Form A)	August 20th-24th, 2018
Begin Intervention (Week 1 assist teacher)	August 27th, 2018
Fidelity Check 1/Observation of Comparison Classrooms	September 17th, 2018
Fidelity Check 2/Observation of Comparison Classrooms	October 30th, 2018
Fidelity Check 3/Observation of Comparison Classrooms	November 27th, 2018
Fidelity Check 4/Observation of Comparison Classrooms	December 4th, 2018
End Intervention	December 7th, 2018
Final Performances at Elementary campus	December 11th, 2018
Administer Posttest (GORT Form B)	December 10th-14th, 2018

Figure 2. Study Timeline

The secondary fluency routine (SFR). The SFR was designed by the researcher and derived from research-based practices described in other fluency studies. It was designed to be synergistic (Rasinski, 2010); the primary components included repeated reading (Samuels, 1979), choral reading (Lauritzen, 1982), and performance (Young, Valadez, & Gandara, 2016) delivered in a five-day format. The primary focus of the SFR was reading as a means of acquiring and communicating meaning. Table 7 describes the teacher's actions, the students' actions, and options for each day of the five-day routine.

Table 7

5-Day Format for Secondary Fluency Routine

Day	Teacher Actions	Student Actions	Options/Tips
1	Present two texts and read aloud to students, modeling effective oral reading	Listen as teacher models a reading of both texts; Select a text to focus on for the week	In time, teacher might also model poor reading and have students discuss; teacher might also record students reading on Day 1, then again on Day 5 and share with students to demonstrate growth
2	Guide students in marking up script and dividing into parts, labeling parts as As and Bs; lead class in a word/text study; lead class in an echo/choral reading (teacher reads, class echoes)	Mark up script, divide into two parts, and label; participate in word/text study; participate in an echo/choral reading (all students read entire poem)	Reading chorally takes practice and may require several restarts. For secondary students there may be some apprehension at first. The teacher will also have to monitor to ensure that every student is participating.
3	Divide class into two groups; lead class in an antiphonal/ choral reading; (group A reads part, group B reads part; teacher reads with both groups, leading the "chorus")	Participate in an antiphonal/choral reading, reading designated part, and follow along as the teacher leads	Use teacher recorded read-alongs on power points

(continued)

Day	Teacher Actions	Student Actions	Options/Tips
4	Repeat antiphonal/choral reading; critique/discuss reading, then repeat reading	Participate in antiphonal/choral reading; listen to and apply comments from critique in second reading	Have students switch parts; have students read with a partner or a group of four; at some point, the teacher should gradually release responsibility of the critique over to students
5	Lead the class in a final reading; (Prepare some type of concluding activity (mini-performance, self-evaluation, etc.)	Participate in final reading (and concluding activity)	On Day 5, the selection will be added to the students' practice folders. At the end of each-six weeks, the class will prepare a performance of some sort created from the practiced texts.

The researcher designed the SFR to be efficient in terms of both time and money so that teachers and administrators would find it to be a practical tool. The only cost associated with the intervention was for materials, which primarily consisted of copies of the weekly texts. The preparation time for the teacher was minimal and included making copies of the selected text and previewing the text to determine what to focus on in terms of direct instruction.

As for class time, the intervention was meant to take anywhere from five to 15 minutes per day. To determine whether this goal was met, the researcher created a form (Appendix B) that asked the classroom teacher to document the number of minutes spent per day on the procedure. On average, 9:38 minutes were spent with the least amount of time on a given day being 3:35 (a Thursday, Day 4) and the most amount of time on a given day being 16:47 (a Monday, Day 1). In general, more time was spent on Day 1 and Day 2 since these were the days the students selected the text and were becoming familiar

with it. The time allotted also depended on the difficulty of the text and the features the teacher selected to focus on. Day 2 consisted of "text study," but the researcher cautioned the teacher against too much analysis and suggested that she select one or two items to focus on in terms of instruction. Examples included a tricky phrase, difficult vocabulary, or anything she wanted to draw students' attention to or thought might cause them difficulty when reading the text aloud.

The SFR was designed to be authentic and engaging and provide for instruction with a focus on meaning—the type that is absent in much of the instruction aimed at struggling readers (Allington, 1983; Stover et al., 2015). It was also designed with DeVries's (2015) guiding principles for fluency instruction in mind, including modeling of fluent reading, direct instruction in fluency along with feedback, support while reading, opportunities to repeat reading, and instruction in phrasing skills. Finally, the researcher designed the SFR to be practical: easy to implement and integrate into the secondary classroom regardless of the teacher's background in reading, as well as cost effective.

Because the intervention was planned for 18 weeks, the researcher added a few components, including choice, to ensure students remained engaged. For example, on Day 1 of the 5-day routine, the teacher presented two texts to the class, read both aloud, modeling good oral reading techniques, and allowed the class to choose which text to focus on for the week.

Another component was the inclusion of performance. Day 5 always concluded with a mini-performance before an audience of some kind, including parents, other classes, or middle school staff. As a final concluding activity, the students took a field

trip to the elementary campus. Each class selected its two favorite texts to perform for first- and second-grade students. Performance was included to lend authenticity to and encourage engagement in the daily fluency work. It was also included as a means of building self-confidence (McCauley & McCauley, 1992), which struggling readers often lack .

Finally, the teacher was given a few specific options she could use to alter the five-day format slightly if students seemed to be losing interest; however, the primary methods of repeated reading and choral reading did not change. These options were communicated during the training sessions and included modifications such as reading with a partner or small group and the use of technology. Technology options included students reading along with teacher-recorded texts on PowerPoint and the use of audio and video recordings of students practicing the text.

Prior to the study, the researcher conducted an unpublished pilot of the intervention in a high school setting with two small reading intervention classes. The pilot lasted a total of 11 weeks with two weeks primarily being spent on pretesting and posttesting, and one week conducting a midpoint data collection. All students were pre- and posttested on three fluency measures: automaticity, accuracy, and prosody. Preliminary results were as follows: The first paired-samples t-test measured increase in automaticity. The pretest (M=89.92; SD=32.7) to posttest (M=104.23; SD=40.27) increase on words read correct per minute was statistically significant (p=.02). The second paired-samples t-test measured increase in accuracy. This test also showed a significant difference. The pretest (M=93.46; SD=4.37) to posttest (M=97; SD=2.58) increase in accuracy was statistically significant (p=.008). The third paired samples t-test

measured increase in prosody. The pretest (M=10.46; SD=3.57) to posttest (M=12. 77; SD=3.09) increase in prosody was statistically significant (p=.001).

The results indicated that the intervention had a significant effect on all three components of students' oral reading fluency: automaticity, accuracy, and prosody. According to Cohen's *d*, the intervention had a moderate (approaching large) effect on automaticity (*d*=.73), a large effect on accuracy (*d*=.87), and a very large effect on prosody (*d*=1.17). Indeed, there are numerous limitations associated with a one-group pre/posttest design; however, the pilot study did help inform the present study.

Intervention materials. The researcher provided the teacher with a binder of 49 texts to use with the intervention. The teacher selected two texts from the binder for each week of the 18-week implementation. This allowed the teacher some flexibility and choice in terms of matching the SFR text to the existing curriculum and to student interests and needs. When selecting texts for the binder, the researcher gave primary consideration to difficulty of the text (Kuhn et al., 2006), length of text (Samuels, 1994), and type of text (Rasinski, 2006). The researcher also tried to find texts that would be engaging for middle school students. A heading was typed on the top left-hand corner of each text which included the following information: text number, genre, title, ATOS level, Lexile level, and word count. Each text was typed directly below the heading in Times New Roman font, 12 point, and double spaced (Appendix C).

When considering the type of texts to include, the researcher sought a variety to keep students engaged, but also to expose students to different types of texts. Genres included blog posts, short stories, non-fiction articles, letters, poems, collections of quotes and proverbs, and excerpts from speeches, novels, and non-fiction books.

In terms of difficulty, the researcher used an online ATOS calculator to determine the grade level of each text. The ATOS level is determined by quantitative features of text including average sentence length, average word length, and word difficulty. The average ATOS level of the passages was 7.8 and ranged from 4.8 to 12.0. Because Lexile levels are used at this campus, the Lexile level of each passage was also determined using an online Lexile calculator. The Lexile level is determined through the use of an algorithm and takes into account sentence length and word frequency. On average, Lexile levels were 1077, which represents Grade 5 through Grade 9. Lexile levels ranged from 650 to 1500.

As for length, short texts or text excerpts were selected to meet the time constraints of the intervention, keeping in mind the goal of the researcher to create an intervention that was practical and efficient. In addition, short texts are not overwhelming for students who struggle with reading. The texts were 152 total words on average and ranged from 57 words to 305 words.

Comparison classrooms. Although the classrooms were purposively selected, the researcher randomly assigned the intact classrooms to treatment and comparison groups. Three of the six classrooms were assigned to the treatment condition, while the other three served as the comparison group. Aside from the SFR intervention, which was incorporated into the beginning of the period in the treatment classes for approximately 10 minutes daily, there were no other instructional differences. In the comparison classrooms, this time was spent on independent reading (IR), in which students were allowed to self-select books to read. Students also had to complete a brief written response tied to their independent reading each week.

For the remainder of the 55-minute period, instruction included different activities depending on the day of the week. On Mondays, the teacher typically taught a whole group lesson then allowed time for guided and independent practice. She also used Mondays to introduce the classes to new stations. On Tuesdays, Wednesdays, and Thursdays after SFR or IR, students rotated through stations consisting of Fountas and Pinnell Leveled Literacy Intervention (LLI), a computer station, and a literacy station. In the computer station, students spent time on computer-based literacy activities. The technology integrationist on the campus worked closely with the teacher to locate appropriate activities that connected to the curriculum and engaged the students. The literacy stations consisted of a variety of activities including connections to what was being learned in other content area classes, author study, word work, and hands-on activities. Fridays were typically spent conferencing with students, checking in with them about their grades in other classes, and assisting students with assignments for their other classes, including makeup work, late work, or corrections. Table 8 includes a summary of the curriculum for the reading intervention classes.

The researcher observed the comparison classrooms once a month throughout the intervention period to review the curriculum and to ensure that no instructional differences, aside from the intervention, existed.

Table 8

Curriculum for Treatment and Comparison Classrooms

Treatment Classrooms	Comparison Classrooms
Secondary Fluency Routine (approximately 10 minutes daily)	Independent Reading (approximately 10 minutes daily)
M: whole group work; introduction to new stations	M: whole group work; introduction to new stations
T, W, Th: Stations including Leveled Literacy Intervention, a computer station, and a literacy station	T, W, Th: Stations including Leveled Literacy Intervention, a computer station, and a literacy station
F: Teacher/student conferences, grade checks, assistance with assignments for other classes (approximately 45 minutes daily)	F: Teacher/student conferences, grade checks, assistance with assignments for other classes (approximately 45 minutes daily)

Teacher training and treatment fidelity. Training consisted of two sessions. The first session consisted of an in-depth presentation in which the researcher defined fluency and its components according to current research and described the various strategies that would be used as part of the intervention, including repeated reading, whole-class choral reading, echo reading, and antiphonal reading. This session also included an explanation of the five-day format that would be used including the options available to the teacher for adapting the format. During the second session, the five-day format was demonstrated using materials similar to those that would be used during the intervention. During this training session, the researcher also shared a fidelity instrument with the teacher, which is discussed below.

For the first five days of implementation, the researcher modeled the intervention daily for the teacher during the first treatment class. During the second treatment class,

the researcher observed the teacher. The teacher and researcher then consulted to review the results of the implementation and adjust as needed. Thereafter, the teacher conducted the intervention, and the researcher observed once a month, for a total of four times, in each of the treatment classrooms to ensure fidelity.

Because the validity of an experiment can be compromised through poor treatment fidelity, the use of a fidelity check is very important. The researcher designed a classroom observation checklist for this purpose (Appendix D). The instrument included both teacher and student behaviors regarding specific elements of the intervention. The fidelity checklist included a total of nine teacher behaviors, including items such as "provided direct instruction in fluency (pronunciation, rate, pausing, prosody, phrasing, etc.)," "instruction was focused on meaning," and "allowed students choice of text." There were also seven student behaviors on the list, including items such as "marked and labeled the script" and "read at the appropriate volume and pace following the lead of the teacher." The researcher checked if an item was observed and noted an n/a if an activity was not observed because it was not expected to be observed on that particular day of the 5-day format. There was also space to write comments and note specific examples of observed behaviors. Table 9 includes examples of comments recorded by the researcher next to the behavior being observed.

Table 9

Examples of Comments Noted During Fidelity Checks

Teacher Behavior	Comment Noted by Researcher
Provided feedback to students	Practiced a long sentence several times and discussed how to read using punctuation appropriately
Provided feedback to students	Complimented a student for self-correcting
Instruction focused on meaning	Discussed comprehension as the goal of reading
Provided direct instruction in fluency	Before the day's reading, brought student's attention to the bulletin board/word wall and reviewed these previously taught words: comprehension, fluency, expression, volume, phrasing, rate
Provided direct instruction in fluency	"This week we are going to focus on volume, but remember to use expression as well."
Guided students in marking text and labeling parts	Teacher made notes on her copy, which was projected, so that students could make notes on their individual texts
Led class in repeated reading, choral reading, echo reading, and antiphonal reading, setting the pace for students (circle types)	Tough passage—had to repeat a few sentences multiple times until students were able to read in unison
Participated in word/text study or discussion	Student said "like a tattoo" when class was discussing the meaning of "inscribed
Participated in selection of text	All students voted—"Out of this World, New Mexico, USA" – an excerpt from a NF text was selected

The fidelity visits were scheduled with the teacher in advance. Because the SFR involves slightly different activities each day of the 5-day routine, the scheduled visits occurred on different days to ensure fidelity of the entire routine. When fidelity was less

than 100%, the researcher met with the teacher and provided feedback in an effort to achieve full treatment fidelity.

In addition to the four fidelity visits, on three occasions, the researcher observed Day 5, which was "performance day." This included the final performance at the conclusion of the intervention, which involved the teacher taking the treatment classes on a field trip to first- and second-grade classrooms on the elementary campus where the students selected several of their favorite texts to perform. In one classroom, the second-grade students also shared their fluency folders and read aloud to the middle school students.

Throughout the 18-week intervention period, the researcher visited the treatment classrooms informally to check in at least bi-weekly and was available to address any questions the teacher had. The researcher and teacher also communicated regularly via email or by phone call. The completed fidelity checklists indicate that all expected teacher and student behaviors were observed and that the teacher implemented the intervention with fidelity.

Data Analysis

The two research questions were addressed through an analysis of scores on the quantitative measures. Pre- and posttest data for measures of fluency and comprehension were examined for change in individual subjects and were analyzed using Statistical Package for the Social Sciences (SPSS) software, a statistical analysis package that assists researchers in analyzing data using both descriptive and inferential techniques. The researcher first checked the assumptions associated with analyses of variance. A series of preliminary analyses was also conducted to examine potential differences

between groups based on some demographic variables. The researcher then employed a repeated measures analysis of variance (ANOVA) on all outcome measures, including rate, accuracy, fluency, ORI, prosody, and comprehension to examine main and interaction effects.

CHAPTER IV

Results & Data Analysis

The purpose of this chapter is to report the results of this study and to highlight the effects of the Secondary Fluency Routine (SFR) on two dependent variables, fluency and comprehension. The chapter includes information on data collection, group equivalence, and data analysis and results.

This quasi-experimental study was conducted to examine the effects of the SFR on the oral reading fluency and comprehension in struggling middle school readers. Thirty-nine seventh- and eighth-grade students enrolled in reading intervention classes qualified for the study. Students in the treatment classrooms were provided the intervention for approximately 10 minutes daily for a period of 18 weeks. Time spent pre- and posttesting and time lost to school holidays resulted in an approximate total intervention time of 700 minutes.

Research Questions

The following questions were addressed through the study:

1. What effect does the implementation of the Secondary Fluency Routine have on reading fluency in struggling middle school readers?

2. What effect does the implementation of the Secondary Fluency Routine have on reading comprehension in struggling middle school readers?

Data Collection

Students were pre- and posttested by a trained teacher using the Gray Oral Reading Test, Fifth Edition (GORT-5). Raw scores were recorded for rate, accuracy, fluency, and comprehension. These scores were then converted to scaled scores using

conversion tables in the GORT-5 Examiner's Manual. In addition, a sum of scaled scores was used to determine the students Oral Reading Index (ORI).

The score for rate was determined by the amount of time in seconds it took the student to read the passage orally. The accuracy score was determined from the number of words pronounced correctly during the oral reading. The sum of the rate and accuracy scores resulted in the fluency score. The number of correct responses to the questions about the passages was used to render the comprehension score. Scale scores for fluency and comprehension were combined to arrive at the ORI. For the prosody score, the examiner assigned a value from 1 to 4 for each of the following components of expressive reading: expression, volume, phrasing, smoothness, and pacing. These values were then summed to arrive at the prosody score.

Data were compiled into a spreadsheet by the teacher, anonymized, and delivered to the researcher at the conclusion of data collection. The researcher then imported the spreadsheet into Statistical Package for the Social Sciences (SPSS) to run statistical tests. In addition to the GORT-5 data, the following types of demographic data were collected: grade level, number of absences, gender, ethnicity, 504 status, socio-economic status, English Learner status, Special Education status, and Dyslexia status.

Data Analysis

The results are organized into the five main sections. The first section describes preliminary analyses that were used to examine the normality of the data and ensure that assumptions for analyses of variance were met. The second section presents preliminary analyses that were conducted to examine potential differences between groups based on demographic variables. The third section includes descriptive statistics for all outcome

measures. The fourth section consists of the results of a series of repeated measures analyses of variance (ANOVA) that were employed to determine main and interaction effects on all outcome measures. The last section presents pretest to posttest mean difference effect sizes for all outcome measures.

Assumptions. For statistical tests to yield valid results, the researcher must ensure that assumptions are met. If these assumptions are violated, the results of a statistical analysis can be misleading. Therefore, the researcher began by analyzing the appropriate assumptions, including normality and homogeneity of variance.

Normality. First, the assumption of normality was analyzed. One method of assessing the assumption of normality, which is a normal or symmetrical distribution of scores, is to analyze skewness and kurtosis. However, sample size has a great impact on these, and with smaller samples, this analysis can give very misleading results. Therefore, the researcher decided to examine Q-Q Plots, or quantile-quantile plots, as an alternate method of analyzing normality. If scores are normally distributed, the points on the plot should fit with the trend line. Q-Q plots were visually inspected for each outcome measure, including rate, comprehension, accuracy, fluency, ORI, and prosody. Data points only slightly deviated from the trend line; as a result, data were considered normally distributed.

Homogeneity of variance. The assumption for homogeneity of variance was tested using the Levene's Test for Equality of Variances. Levene's test measures the variance between groups to determine if a significant difference between their means exists. The alpha was set at .05 and the results indicated that there were no statistically

significant differences between the treatment and comparison groups. Results are presented in Table 10.

Table 10

Levene's F Test for Equality of Variances

Measure	F	Sig
Prerate	.01	.91
Postrate	.03	.86
Precomprehension	1.22	.28
Postcomprehension	3.65	.06
Preaccuracy	.49	.49
Postaccuracy	.09	.77
Prefluency	.12	.74
Postfluency	.07	.79
PreORI	.17	.68
PostORI	.19	.67
Preprosody	.24	.63
Postprosody	1.66	.21

Outlier assessment. Because outliers can distort the results of a statistical analysis, they are typically removed prior to running statistical tests; however, in this

case, the researcher made the decision to leave any outliers in the data set for two reasons: (1) to reflect the true nature of the participants, and (2) the sample was small enough that by removing data, the power of the statistical tests would be reduced.

Group Equivalence

To determine whether there were any significant differences on pretest measures between subgroups within the treatment and comparison, a series of one-way Analysis of Variances (ANOVAs) were analyzed. Subgroup factors examined were grade, English Learner (EL) status, and gender. Other grouping factors such as Dyslexia, Special Education, and 504 were not examined because of the small numbers in those subgroups. Results are described below.

Grade equivalence at pretest. The first one-way ANOVA examined differences in pretest scores between subjects with grade as the grouping factor. The sample included 11 seventh-grade students and 28 eighth-grade students. Scaled scores from the GORT-5 were used for each outcome measure. Means and standard deviations are presented in Table 11. Results of the one-way ANOVA comparing the two groups revealed no statistically significant differences between seventh and eighth graders at pretest on any of the outcome measures including (a) rate, $F(1, 37) = .65$, $p = .43$; (b) comprehension, $F(1, 37) = .40$, $p = .53$; (c) accuracy, $F(1, 37) = .13$, $p = .72$; (d) fluency, $F(1, 37) = .03$, $p = .87$; (e) ORI, $F(1, 37) = .14$, $p = .71$; or (f) prosody, $F(1, 37) = .68$, $p = .42$.

Table 11

Pretest Mean Scores and Standard Deviations by Grade

Measure	Grade	M	N	SD
Rate	7	7.64	11	.67
	8	7.32	28	1.22
Comprehension	7	6.36	11	.50
	8	6.57	28	1.03
Accuracy	7	8.73	11	.90
	8	8.93	28	1.74
Fluency	7	8.00	11	.63
	8	8.07	28	1.36
ORI	7	84.73	11	1.01
	8	85.36	28	5.44
Prosody	7	9.18	11	2.96
	8	10.11	28	3.24

Gender equivalence at pretest. The second one-way ANOVA examined differences in pretest scores between subjects with gender as the grouping factor. The sample included 26 male students and 13 female students. Means and standard deviations are presented in Table 12. Results of the one-way ANOVA comparing the two groups

revealed no statistically significant differences between males and females at pretest on any of the outcome measures, including (a) rate, $F(1, 37) = .68$, $p = .42$; (b) comprehension, $F(1, 37) = .60$, $p = .81$; (c) accuracy, $F(1, 37) = 1.58$, $p = .22$; (d) fluency, $F(1, 37) = 2.40$, $p = .13$; (e) ORI, $F(1, 37) = .61$, $p = .44$; and (f) prosody, $F(1, 37) = 1.42$, $p = .24$.

Table 12

Pretest Mean Scores and Standard Deviations by Gender

Measure	Gender	M	N	SD
Rate	M	7.31	26	1.16
	F	7.62	13	.96
Comprehension	M	6.54	26	.90
	F	6.46	13	.97
Fluency	M	7.85	26	1.12
	F	8.46	13	1.27
ORI	M	84.77	26	4.46
	F	86.00	13	5.02
Prosody	M	10.27	26	3.01
	F	9.00	13	3.37

English learner status equivalence at pretest. A third one-way ANOVA examined differences in pretest scores between subjects with English Learner status as the grouping factor. There were 20 English Learners and 19 non-English Learners in the sample. Means and standard deviations are presented in Table 13. Results of the one-way ANOVA comparing the two groups revealed no statistically significant differences between Els and non-ELs at pretest on the following outcome measures: (a) rate, $F(1, 37) = .12$, $p = .73$; (b) comprehension, $F(1, 37) = 2.30$, $p = .14$; (c) accuracy, $F(1, 37) = 2.48$, $p = .12$; (d) fluency, $F(1, 37) = 1.87$, $p = .18$; and (e) ORI, $F(1, 37) = 3.06$, $p = .09$. There were, however, statistically significant differences detected at pretest for the prosody measure, $F(1, 37) = 9.97$, $p = .003$.

Table 13

Pretest Mean Scores and Standard Deviations by EL Status

Measure	EL Status	M	N	SD
Rate	EL	7.35	20	1.27
	Not EL	7.47	19	.90
Comprehension	EL	6.30	20	.80
	Not EL	6.74	19	.99
Accuracy	EL	8.50	20	1.64
	Not EL	9.26	19	1.37
Fluency	EL	7.80	20	1.32

(continued)

Measure	EL Status	M	N	SD
	Not EL	8.32	19	1.00
ORI	EL	83.95	20	4.56
	Not EL	86.47	19	4.44
Prosody	EL	8.45	20	2.70
	Not EL	11.32	19	2.96

Pairwise comparison for english learner status. To explore the nature of the significant differences in the prosody measure, a pairwise comparison was analyzed. The mean difference between the groups was 2.87 with non-English Learners significantly outperforming English Learners on the pretest ($p<.05$). Therefore, these results should be interpreted with caution. Aside from the significant finding in prosody when considering English Learner status, there were no other statistically significant differences among the subgroups on the basis of the pretest measures; as a result, for the most part, equivalence was assumed and preexperimental conditions were met.

Descriptive Statistics

Descriptive statistics were produced for all outcome measures including rate, comprehension, accuracy, fluency, ORI, and prosody. Means and standard deviations for the treatment and comparison group for each measure are reported in Table 14.

On the GORT-5, the score for rate was determined by the amount of time it took in seconds for students to read the passage orally. The mean score for rate at pretest for the total sample was 7.41 with scores ranging from 4 to 8. The mean score for rate at

pretest for the treatment group was 7.27 with scores ranging from 4 to 8, and the mean score for rate at pretest for the comparison group was 7.59 with scores ranging from 6 to 8. The mean score for rate at posttest for the total sample was 7.62 with scores ranging from 5 to 10. The mean score for rate at posttest for the treatment group was 7.41 with scores ranging from 5 to 10, and the mean score for rate at posttest for the comparison group was 7.88 with scores ranging from 6 to 9.

The comprehension score was determined by the total number of comprehension questions answered correctly for each passage. The mean score for comprehension at pretest for the total sample was 6.51 with scores ranging from 5 to 8. The mean score for comprehension at pretest for the treatment group was 6.41 with scores ranging from 5 to 8, and the mean score for comprehension at pretest for the comparison group was 6.65 with scores ranging from 5 to 8. The mean score for comprehension at posttest for the total sample was 7.05 with scores ranging from 4 to 9. The mean score for comprehension at posttest for the treatment group was 7.05 with scores ranging from 5 to 8, and the mean score for rate at posttest for the comparison group was 7.06 with scores ranging from 5 to 8.

The accuracy score is determined from the number of words pronounced correctly during the oral reading. The mean score for accuracy at pretest for the total sample was 8.87 with scores ranging from 5 to 13. The mean score for accuracy at pretest for the treatment group was 8.32 with scores ranging from 5 to 10, and the mean score for accuracy at pretest for the comparison group was 9.59 with scores ranging from 7 to 13. The mean score for accuracy at posttest for the total sample was 8.78 with scores ranging from 5 to 13. The mean score for accuracy at posttest for the treatment group was 8.55

with scores ranging from 5 to 11, and the mean score for accuracy at posttest for the comparison group was 9.12 with scores ranging from 7 to 13.

The fluency score is determined by sum of the rate and accuracy scores. The mean score for fluency at pretest for the total sample was 8.05 with scores ranging from 5 to 10. The mean score for fluency at pretest for the treatment group was 7.73 with scores ranging from 5 to 9, and the mean score for fluency at pretest for the comparison group was 8.47 with scores ranging from 6 to 10. The mean score for fluency at posttest for the total sample was 8.15 with scores ranging from 5 to 12. The mean score for fluency at posttest for the treatment group was 7.91 with scores ranging from 5 to 10, and the mean score for fluency at posttest for the comparison group was 8.47 with scores ranging from 7 to 12.

Scale scores for fluency and comprehension were combined to arrive at the ORI. The mean score for ORI at pretest for the total sample was 85.18 with scores ranging from 65 to 92. The mean score for ORI at pretest for the treatment group was 84.09 with scores ranging from 65 to 92, and the mean score for ORI at pretest for the comparison group was 86.59 with scores ranging from 78 to 92. The mean score for ORI at posttest for the total sample was 86.87 with scores ranging from 76 to 97. The mean score for ORI at posttest for the treatment group was 86.18 with scores ranging from 76 to 92, and the mean score for ORI at posttest for the comparison group was 87.77 with scores ranging from 81 to 97.

For the prosody score, the examiner assigned a value from 1 to 4 for each of the following components of expressive reading: expression, volume, phrasing, smoothness, and pacing. These values were then summed to arrive at the prosody score. The mean

score for prosody at pretest for the total sample was 9.85 with scores ranging from 5 to 16. The mean score for prosody at pretest for the treatment group was 9.73 with scores ranging from 5 to 15, and the mean score for prosody at pretest for the comparison group was 10.00 with scores ranging from 5 to 16. The mean score for prosody at posttest for the total sample was 10.97 with scores ranging from 5 to 17. The mean score for prosody at posttest for the treatment group was 10.59 with scores ranging from 5 to 17, and the mean score for prosody at posttest for the comparison group was 11.47 with scores ranging from 5 to 16.

Table 14

Means and Standard Deviations for all Outcome Measures

		Pretest		Posttest		
Measure	Condition	M	SD	M	SD	N
Rate	Treatment	7.27	1.12	7.41	1.01	22
	Comparison	7.59	1.06	7.88	1.17	17
Comprehension	Treatment	6.41	.80	7.05	1.25	22
	Comparison	6.65	1.06	7.06	.75	17
Accuracy	Treatment	8.32	1.32	8.55	1.50	22
	Comparison	9.59	1.54	9.12	1.50	17
Fluency	Treatment	7.73	1.12	7.91	1.11	22

(continued)

		Pretest		Posttest		
	Comparison	8.47	1.18	8.47	1.12	17
ORI	Treatment	84.09	4.35	86.18	5.02	22
	Comparison	86.59	4.70	87.77	3.95	17
Prosody	Treatment	9.73	3.06	10.59	4.14	22
	Comparison	10.00	3.35	11.47	3.39	17

Repeated Measures Multivariate Analysis of Variance (MANOVA)

After examining subgroup equivalence at pretest and determining that preexperimental conditions were met, a Repeated Measures Multivariate Analysis of Variance (MANOVA) was performed to determine overall main and interaction effects of the Secondary Fluency Routine on fluency and comprehension. Main effects between subjects were detected, $F(6,32) = 28$, $p = .000$, $\eta^2 = 1.00$, and main effects within subjects were detected, $F(6,32) = 3.78$, $p = .006$, $\eta^2 = .42$; however, these were not qualified by interaction effects, $F(6,32) = 1.14$, $p = .36$, $\eta^2 = .18$.

Repeated Measures Analysis of Variance (ANOVA)

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed main effects on students' rate scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 15.

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Table 15

Repeated Measures ANOVA Summary Table for Rate

Source	SS	df	MS	F	*p*	np^2
Time	.89	1	.89	4.08	.05	.10
Time x Group	.12	1	.12	.55	.46	.02
Error	8.06	37	.22			

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed statistically significant main effects on students' comprehension scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 16.

Table 16

Repeated Measures ANOVA Summary Table for Comprehension

Source	SS	df	MS	F	*p*	np^2
Time	5.27	1	5.27	12.49	.001	.25
Time x Group	.24	1	.24	.57	.45	.02
Error	15.60	37	.42			

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed main effects on students' accuracy scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 17.

Table 17

Repeated Measures ANOVA Summary Table for Accuracy

Source	SS	df	MS	F	*p*	np^2
Time	.28	1	.28	.37	.54	.01
Time x Group	2.34	1	2.34	3.08	.09	.08
Error	28.05	37	.76			

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed main effects on students' fluency scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 18.

Table 18

Repeated Measures ANOVA Summary Table for Fluency

Source	SS	df	MS	F	*p*	np^2
Time	.16	1	.16	.46	.50	.01
Time x Group	.16	1	.16	.46	.50	.01
Error	12.64	37	.34			

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed statistically significant main effects on students' Oral Reading Index (ORI) scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 19.

Table 19

Repeated Measures ANOVA Summary Table for Oral Reading Index

Source	SS	df	MS	F	*p*	np^2
Time	51.19	1	51.19	7.89	.01	.18
Time x Group	4.01	1	4.01	.62	.44	.02
Error	240.14	37	6.49			

A 2 (treatment) x 2 (time) Repeated Measures ANOVA revealed main effects on students' prosody scores. These main effects were not qualified by an interaction effect. Results are summarized in Table 20.

Table 20

Repeated Measures ANOVA Summary Table for Prosody

Source	SS	df	MS	F	*p*	np^2
Time	26.13	1	26.13	6.98	.01	.16
Time x Group	1.77	1	1.77	.47	.50	.01
Error	138.41	37	3.74			

Effect Sizes

To further explore the nature of the effects and for practical significance, pre- and posttest data from the GORT-5 were analyzed in six separate paired-samples *t*-tests, and mean difference effect sizes (Cohen's *d*) were calculated. Cohen's *d* helps illustrate the

magnitude of treatment effects. According to Cohen (1988), mean difference effect sizes greater than .20 are considered small; those that exceed .50 are considered moderate, and effect sizes that are greater than .8 are large. As significance testing was not the primary purpose of the *t*-tests, the results of those tests are not reported. The pooled mean and standard deviations for each outcome measure were used to compute Cohen's *d* and a post hoc analysis of mean difference effect sizes was conducted to analyze the magnitude of the effects in the different conditions. Results are summarized in Table 21.

Table 21

Pretest to Posttest Mean Difference Effect Sizes

	Treatment	Comparison
Rate	+.19	+.50
Comprehension*	+.75	+.41
Accuracy	+.21	-.33
Fluency	+.25	+0
Oral Reading Index*	+.76	+.26
Prosody	+.33	+.52

Note. Effect size as measured by Cohen's d, .2 = small effect, .5 = medium effect, .8 = large effect; + indicates positive increase; - indicates negative increase; *main effect, $p<.01$

In summary, main effects were detected on all measures, indicating there were changes in mean scores in both groups. To further understand the nature of the main effects, mean difference effect sizes were computed and compared. Most notably, the

mean difference effect sizes in the treatment group for the comprehension and ORI measures were moderate (approaching large), which were greater than the effects in the comparison group. Still, both groups made gains on most of the outcome measures, a desirable effect when comparing interventions.

CHAPTER V

Discussion

The purpose of this chapter is to present a summary of the study as well as discuss important findings drawn from the data presented in Chapter IV. Each question and the findings that relate to it are addressed separately. Finally, the chapter provides a discussion of the limitations, implications for action, and recommendations for future research.

Summary of the Study

Without question, successful readers are those who are fluent, and thus able to cross the bridge to comprehension, motivation, and engagement in reading. Developmentally, fluency should be accomplished during the elementary grades (Chall, 1996; Kuhn, 2004; Miller & Schwanenflugel, 2008); however, many struggling readers at the secondary level are challenged by a lack of fluency (Paige, 2008; Rasinski et al., 2005). As students progress through the grades, they are faced with more complex texts (Kuhn & Schwanenflugel, 2019; Snow, 2010), longer reading assignments, and less support from teachers who, in most cases, do not have the background to help struggling readers overcome reading difficulties (Goering & Baker, 2010; Kuhn & Schwanenflugel, 2019; Rasinski et al., 2005). The result: students who struggle fall further and further behind and face steep, sometimes long-term, consequences, both academic and social (Biancarosa & Snow, 2004; Kamil et al., 2008; Snow, 2010; Snow & Moje, 2010). Because there is limited research on fluency interventions in secondary settings, more research in this area is warranted (Wexler et al., 2008).

For these reasons, the present study set out to determine the effect of the Secondary Fluency Routine (SFR) on both fluency and comprehension in middle school students enrolled in reading intervention classes. The following questions were addressed through the study:

1. What effect does the implementation of the Secondary Fluency Routine have on reading fluency in struggling middle school readers?

2. What effect does the implementation of the Secondary Fluency Routine have on reading comprehension in struggling middle school readers?

The researcher-designed intervention was derived from research-based practice described in other fluency studies (Lauritzen, 1982; Samuels, 1979; Young, Valadez, & Gandara, 2016), most of which were conducted with elementary students. It was intended to be a user-friendly intervention and was designed with older struggling readers in mind. The SFR was created to be authentic and engaging with the primary focus being on reading as a means of acquiring and communicating meaning. Direct instruction in fluency, modeling of fluent reading, and multiple opportunities to practice reading with feedback were key components of the intervention. The SFR consisted primarily of repeated reading, whole-class choral reading, and performance delivered in a 5-day format. A variety of texts, written at or above grade level, were carefully selected by the researcher for use during the intervention.

This 18-week quasi-experimental study took place in a 4A middle school, located in a rural area of the southeast United States. Purposive sampling was used, and 7^{th-} and 8th-grade students enrolled in reading intervention classes were selected to participate. Because the class schedule was in place prior to the start of the intervention, the

researcher was not able to randomly assign students to groups. Instead, the six intervention classes were randomly assigned to either the treatment or the comparison condition. One teacher taught all six of the classes, and, with the exception of the SFR, the curriculum was exactly the same. The SFR was implemented during the first 10 minutes of the period in the three treatment classes; meanwhile, in the three comparison classes, students were engaged in independent reading (IR) for the same 10 minutes.

The Gray Oral Reading Test, 5th edition (GORT-5), a highly reliable and valid instrument (Hall & Tannenbaum, 2012; Wiederholt & Bryant, 2012), was used to measure the following outcome measures: rate, accuracy, fluency, prosody, comprehension, and Oral Reading Index (ORI). Form A of the GORT-5 was utilized for the pretest measure, and Form B was utilized for the posttest measure.

Pre- and posttest data for measures of fluency and comprehension were examined for change in individual subjects and were analyzed using Statistical Package for the Social Sciences (SPSS) software. The researcher began by checking assumptions associated with analyses of variance. Preliminary analyses were also conducted to examine potential differences between groups based on several demographic variables, including grade, gender, and English Learner (EL) status. Finally, the researcher employed a repeated measures analysis of variance (ANOVA) on all outcome measures, including rate, accuracy, fluency, ORI, prosody, and comprehension to examine main and interaction effects. To further explore the nature of the effects and for practical purposes, data were analyzed in six paired samples *t*-tests, and mean difference effect sizes were then calculated.

Findings Linked to Research Questions

Research question 1. The first research question asked whether the SFR had an effect on the fluency of struggling middle school readers. In order to answer this question, the outcome measures of rate, accuracy, fluency, and prosody were considered, and each is discussed in the following section separately.

Rate. The score for rate was determined by the amount of time in seconds it took the student to read the passages orally. An analysis of this measure on the GORT-5 indicated main effects on students' rate scores; however, these were not qualified by an interaction effect. Effect sizes (according to Cohen's *d*) favored the comparison group, which had a moderate effect (*d*=.50) over the treatment group, which had a small effect (*d*=.19). On the surface, these effect sizes are surprising in that one might expect the treatment group to have larger gains in rate after receiving an intervention aimed at fluency; however, there are several likely explanations for these results.

It is possible that the disparity between the rate scores of the treatment and comparison groups is a result of several features of the SFR and the instruction provided as part of the intervention. First, the teacher in this study defined fluency in a way that put comprehension at the center, whereas many teachers focus more on rate (Paige et al., 2014; Rasinski, 2006). The way teachers define fluency has a direct impact on the way they instruct and assess it (Kuhn et al., 2010). Teachers' definitions also impact the way students understand reading and what it means to be a good reader. In this case, the teacher did not place undue emphasis on speed during fluency instruction. Outside of pre- and posttesting, there were no stopwatches or other indications that reading fast was a priority.

Second, the SFR included direct instruction, and during this time the teacher taught students about all the components of fluency and clearly articulated that good readers were not necessarily speed readers (Newkirk, 2012). Instead, she talked to the students in the treatment classes about reading at an appropriate rate. It is possible, that as a result of the explicit instruction from a teacher who had an understanding of fluency as it is defined in current literature, students in the treatment group focused on gaining meaning rather than speed and that impacted their scores for rate on the posttest. The comparison group did not receive the benefit of this instruction and outperformed the treatment group considerably on this outcome measure.

Also relevant to this discussion is the tandem theory, which describes how accuracy, automaticity, and prosody work in tandem with comprehension to maximize understanding (Paige & Magpuri-Lavell, 2014; Paige et al., 2014; Rasinski et al., 2016). According to this theory, accuracy and prosody function on a maximization basis, meaning that reading with full prosody and accuracy encourages greater comprehension. On the other hand, automaticity works on an optimization basis, meaning that it can be adjusted by the reader according to his or her level of comprehension. This means that skilled readers are able to adjust their rate in either direction in order to increase their comprehension. In the present study, where there was a very small effect size in rate in the treatment group but a moderate (approaching large) effect size in comprehension, it is possible that the tandem theory was at work and that students in the treatment group, due to the direct instruction and focus on comprehension provided by the teacher, made adjustments to their rate in order to enhance their comprehension.

Accuracy. The accuracy score was determined from the number of words pronounced correctly during the oral reading of the passages. An analysis of the accuracy measure on the GORT-5 indicated main effects on students' accuracy scores; however, these were not qualified by an interaction effect. Effect sizes favored the treatment group, which had a small effect (*d*=.21) over the comparison group, which had a small negative effect (*d*=-.33).

The small effect in the treatment group could be explained by the raised level of word consciousness these students experienced during the SFR. This occurred during direct instruction and through the ongoing feedback provided by the teacher during the repeated readings. During fidelity check observations, the researcher noted on several occasions that the teacher had the students read a phrase or sentence repeatedly focusing on accurate reading of the text. As Hasbrouck (2018) suggested, the teacher did not allow for "sloppy" reading (p. 33). This emphasis on reading accurately during the SFR might have carried over into the posttest, thus explaining the difference in scores between the treatment and comparison groups. Furthermore, accurate reading promotes comprehension, and this is also illuminated in the scores. The treatment group had higher scores in both accuracy and comprehension, whereas the comparison group had lower scores in both accuracy and comprehension.

Also when the researcher considers both rate and accuracy, the age of the students must be kept in mind. According to some researchers, for secondary students, other factors such as vocabulary and background knowledge, become more important in the development of skilled reading (Edmonds et al., 2009; Hasbrouck & Glaser, 2011). Furthermore, according to the power law (Logan, 1997), when one practices a skill, gains

will be largest early on then decrease with practice. Fluency norms also reflect this idea because as students get older, gains in this area are expected to be smaller (Hasbrouck and Tindal, 2017; Kuhn et al., 2010; Rasinski et al., 2016).

Prosody. In determining the prosody score, the examiner assigned a value from 1 to 4 for each of the following components of expressive reading: expression, volume, phrasing, smoothness, and pacing. These values were then summed to arrive at the prosody score. An analysis of the prosody measure on the GORT-5 indicated main effects on students' prosody scores; however, these were not qualified by an interaction effect. Effect sizes favored the comparison group, which had a moderate effect (d=.52) over the treatment group, which had a small effect (d=.33).

The fact that the comparison group outperformed the treatment group on this outcome measure was surprising because of the amount of modeling involved in the SFR; however, one likely explanation of the scores is the makeup of the treatment group. The treatment group included 22 participants, with 63% (n=14) identified as English Learners. The comparison group included 17 participants, with 35% (n=6) identified as English Learners. Prior to conducting the main analysis in this experiment, the researcher conducted a series of one-way analysis of variance (ANOVA) to determine whether there were any significant differences on pretest measures between subgroups within the treatment and comparison groups. No significant differences were detected among the subgroups on the basis of the pretest measures except for a significant finding in prosody when considering English Learner status. Results of a pairwise comparison showed that non-English Learners significantly outperformed English Learners on the pretest for the prosody outcome measure ($p<.05$).

While the present study did include a significant number of English Learners (more than half), this is not the case in similar studies, and more research is warranted with this population (Wexler et al., 2007). Reed et al. (2012) identified this population as a gap in the research in the area of reading interventions for adolescents. In fact, in their examination of the ecological and population validity of studies in this area, the researchers identified 26 studies that fit their criteria, and only three of those included English Learners. Other gaps identified by these authors include students in suburban and rural schools, students in high school, African American and Native American students, interventions delivered by regular classroom teachers, and interventions in large groups and in general education classrooms. Rural schools, such as the one in the present study, are faced with a lack of resources for assisting their struggling readers, as well as English Learners, and would benefit greatly from future studies that focus on these groups.

Another possible explanation for the prosody scores is that the passages on the GORT-5 do not necessarily lend themselves to prosodic reading. This may have had a twofold effect. One, it is possible that the students did not attempt to read the passages on the GORT-5 with prosody as they did with the intervention texts, which were carefully selected to be engaging read-alouds. Two, it is possible that the teacher, after having listened to the students read the intervention texts prosodically during the 18-week intervention period, could have scored students lower on the posttest because students did not demonstrate prosodic reading on the GORT-5 passages as they had on the intervention texts.

This idea also substantiates the claim made by Scammacca et al. (2016) in their systematic review of reading intervention studies that included students in grades 4-12. In

their consideration of declining effect sizes, these authors noted that as researchers increasingly used standardized measures, effect sizes tended to decrease. This occurred because researcher-designed measures typically align more closely to the intervention, while standardized measures do not. Thus, standardized measures, such as the GORT-5 used in the present study, require some transfer of learning to new content.

Fluency. The sum of the rate and the accuracy scores resulted in the fluency score. An analysis of the results of the fluency measure on the GORT-5 indicated main effects on students' fluency scores; however, these were not qualified by an interaction effect. Effect sizes favored the treatment group, which had a small effect (*d*=.25) over the comparison group, which appeared to have no effect (*d*=.00).

Like the present research, Paige (2011) conducted a study in which whole-class choral reading was implemented in a repeated reading format. Participants included sixth-grade struggling readers in ELAR classes in an urban district. Paige used the GORT-4 to assess the students' oral reading fluency and found that students in the treatment group made significant gains on this measure, and that the effect size was moderate (*d*=.64). The students in Paige's study experienced greater gains than those in the present study; however, as is commonly found in fluency interventions (Edmonds et al., 2009; Wexler et al., 2007), Paige used grade-level narrative texts which are typically easier to read with fluency, while the present study incorporated a wide variety of texts, including expository texts, at or above grade level. Additionally, the demographics of the sample in the two studies were significantly different, and Paige did not report whether or not his sample included English Learners.

In another study, Paige (2008) explored the use of whole-class choral reading in a wide-reading format. In this study, he implemented the strategy with seventh-grade students in science classes and incorporated science texts at grade level. In this case, Paige found that whole-class choral reading had no effect on struggling readers; he attributed this finding to the wide-reading format, inadequate dosing, or a strategy that simply did not work. Paige's results differ from those of the present study, which could be attributed to the wide-reading format he utilized. Additionally, unlike the present study, Paige did not measure comprehension.

In regard to effect size, Wexler et al. (2007) published a synthesis of fluency interventions for secondary struggling readers published between 1980 and 2005 and found that out of 19 studies that fit their criteria, only six included a treatment comparison design similar to the one in the present study, and the largest group of studies employed a single-subject design. Among the six treatment comparison design studies, the researchers found that effect sizes from standardized tests were very small. This idea has been presented by other researchers (Edmonds et al., 2009; Scammacca et al., 2015) and should be acknowledged when considering the effect sizes in the present study because a standardized test, the GORT-5, was utilized.

Research question 2. The second research question asked whether the SFR had an effect on the comprehension of struggling middle school readers. In order to answer this question, the outcome measure of comprehension was considered. Also discussed in this section, will be the ORI measure, which includes both fluency and comprehension.

Comprehension. The score for comprehension is derived from the number of correct responses to the questions about the passages. An analysis of the results of the

comprehension measure on the GORT-5 indicated statistically significant main effects on students' comprehension scores; however, these were not qualified by an interaction effect. Effect sizes favored the treatment group, which had a moderate (approaching large) effect (*d*=.75) over the comparison group, which had a moderate effect (*d*=.41). As hypothesized, the SFR did impact students' comprehension, which is the main goal of reading, and there are several likely reasons for this encouraging finding.

Although the name of this intervention places an emphasis on fluency, there were several components of the SFR that appear to have had an impact on comprehension as well. First, the SFR includes repeated reading, which could be described as a type of problem-solving technique (Logan, 1997), in which with each reading, an additional problem is solved, allowing the reader to gain a greater understanding of the text. Repeated Reading is a practical application of LaBerge and Samuels's (1974) automaticity theory which presumes that with practice, a reader's attention can be freed from decoding and conserved for comprehension.

Furthermore, the inclusion of whole-class choral reading allowed these struggling readers a safe place to practice their reading skills—what Paige (2011) refers to as a "tent of anonymity" (p.13). As a result, students were able to focus more on comprehension and less on the fact that they had to read out loud in front of their peers.

The Wexler et al. (2007) synthesis previously mentioned found that in the case of older struggling readers, gains from repeated reading interventions do not necessarily generalize to other reading tasks, such as comprehension or transfer to the reading of unpracticed passages. The present study contradicted these findings in that students demonstrated growth in comprehension on the GORT-5 posttest, which included

passages that were very different from those used during the intervention. The growth demonstrated could be a result of the added features of the SFR, such as direct instruction and the emphasis placed on comprehension by the teacher. However, in order to produce a convergence of research, more studies are needed to determine the best combination of components to include in interventions such as this.

Edmonds et al. (2009) also found that even as older students improved their oral reading fluency, comprehension did not always improve. As a result, they suggested that educators not abandon instruction in fluency, but that they include instruction targeting comprehension, such as modeling and think alouds. Techniques such as these were included in the SFR and may have contributed to the comprehension gains made in the treatment group.

The SFR included a focus on meaning making as the primary goal of reading and reading fluency. The growth in comprehension is likely a result of this focus. A similar conclusion was noted by Kuhn (2004), who found that when she compared three conditions—a repeated reading condition, a wide -reading condition, and a listening condition—that the only group to show growth in comprehension was the wide-reading group. The researcher determined this was because of what students considered to be the implicit focus of the various interventions, and that learners look to implicit and explicit cues to determine where to focus their attention.

The results of the present study also provide support for LaBerge and Samuels's (1974) theory of automaticity in that students experienced growth in both fluency and comprehension as a result of practice. Through repeated reading, a practical application

of the theory of automaticity, students were able to improve rate and accuracy, which ultimately freed up resources and allowed for improved comprehension.

Similarly, Chard, Vaughn, and Tyler (2002), in their meta-analysis of fluency studies with learning-disabled elementary students, concluded that even though comprehension was not typically the focus of the intervention, fluency growth was often associated with growth in comprehension. Gains in comprehension are encouraging because at the secondary level, the expectations and demands placed on students in terms of reading comprehension are steadily increasing.

Oral reading index. Scale scores for fluency and comprehension were combined to arrive at the ORI. An analysis of the results of the ORI measure on the GORT-5 indicated statistically significant main effects on ORI; however, these were not qualified by an interaction effect. Effect sizes favored the treatment group, which had a moderate (approaching large) effect (d=.76) over the comparison group, which had a small effect (d=.26).

The statistically significant finding on this measure was encouraging as this score is the normative score for the composite and is considered to be the most clinically useful and reliable score on the GORT-5 (Wiederhold & Bryant, 2012). The gains made by the treatment group on this measure demonstrate overall gains. These results confirm the findings of Scammacca et al. (2015) who stated that there is clear evidence that reading interventions produce positive results for students in Grade 4 through Grade 12.

Implications for Action

Based on the results of this study, several suggestions emerged that can be used to inform classroom practice when educators work with struggling readers at the secondary level to develop fluency and comprehension.

First, the SFR is recommended for use with struggling readers at the middle school level when growth in fluency and comprehension are the goals. Results of the present study show the intervention to be generally effective; additionally, it is a user-friendly intervention that can be easily implemented into the existing curriculum. It is efficient in that it is very cost effective and does not take much time to prepare for or to implement. Additionally, it requires a minimal amount of professional learning for the teacher. It is adaptable to any material or content and a viable alternative to worksheets, computer-based programs, and other reading substitutes commonly found in classrooms. When incorporating the SFR, it is very important that the teacher have a clear understanding of fluency and each of its components and that he or she explicitly communicates this definition to students. Additionally, comprehension must always be the focal point, used as a compass to guide instruction throughout implementation.

One component of the SFR, the repeated reading technique, is suggested for use because not only does it impact students' fluency but it also is a lifelong reading skill—a strategy that good readers use to aid comprehension. In the present study, during one of the fidelity checks, the researcher observed a discussion in a treatment class in which the teacher pointed out to the students how their understanding of the selected text changed throughout the week as a result of repeatedly reading the text. What one might call "a light bulb" moment occurred when this was brought to the students' attention and they

recognized the value of the strategy. Another implication here is that teachers need to take the time for this type of conversation and instruction to occur, especially with struggling readers.

Another implication is that for struggling readers both deep and wide reading is necessary; many researchers have previously made this claim (Kuhn, 2004; Kuhn et al., 2010; Paige et al., 2012; Pikulski & Chard, 2005; Rasinski, 2012; Rasinski & Padak, 2005; Samuels, 1979). Kuhn and Stahl (2003) compared deep and wide-reading techniques and found both to be effective. These researchers suggested that gains made were more than likely not an effect of the method utilized, but, instead, the result of the amount of time spent reading connected texts. In the present study, the treatment group outperformed the comparison group on most outcome measures, providing evidence that the deep reading utilized during the SFR was necessary for the struggling readers in these particular classrooms. The comparison classrooms were not exposed to deep reading at all during the 18-week long intervention.

Wide reading is necessary to increase the volume of reading and in doing so, to expose students to a wide variety of texts and many different words, while deep reading is needed to develop fluency. Students who are exposed to both types of reading learn to be flexible readers and come to understand that both types of reading are utilized by skilled readers depending on the reading situation.

Limitations

There are several limitations to the present study that must be considered as well. First, the small sample size (n=39), although large enough to detect effects and draw accurate conclusions according to an a priori power analysis, might be considered a

limitation because a larger sample might have yielded different results. Another limitation, leaving open the possibility of violations to internal validity, is the lack of random assignment of students to treatment or comparison classrooms. Because the students were scheduled into intervention classes prior to the start of the study, random assignment was not possible. However, the researcher did randomly assign the six intervention classes to either the treatment or the comparison condition. Furthermore, the sample was not randomly selected and so the generalizability of the results is limited to the sample group used in this study.

The brief amount of time dedicated to the intervention (approximately 10 minutes daily), could have limited the results. It is possible that for these students, a more intense intervention is necessary. The intervention was, however, designed to be time-efficient so that teachers and administrators might find room for it in an already packed curriculum.

The fact that this research took place in a classroom with a teacher delivering the intervention might also be considered a limitation because the influence of extraneous variables cannot be completely controlled in a classroom setting; however, the classroom setting might also be considered a strength because the teacher dealt with student behavior, classroom interruptions such as announcements and fire drills, students who were absent or arrived to class late, and all the other distractions that naturally occur in a classroom.

Recommendations for Future Research

Further research in the area of secondary reading is needed before researchers and practitioners can know with certainty what instructional practices are most effective with older struggling readers.

The present study took place in a rural middle school in reading intervention classes with a teacher who had some background teaching reading at the elementary level. Future research should examine the extent to which the Secondary Fluency Routine can be generalized to other settings, such as high school classrooms, content area classrooms, or even adult literacy courses. It would also be beneficial to focus on other types of participants, including teachers with little or no background in teaching reading, English Learners, or boys, who tend be overrepresented in reading intervention classrooms. In the present study, 67% of the students enrolled in the intervention classes were male.

It might also be valuable to explore the degree to which the benefits of the SFR are maintained over time. In other words, will any resulting gains in reading fluency and comprehension continue to be present weeks or even months after the intervention has concluded, or was the growth temporary?

Finally, to be successfully implemented at the secondary level, an intervention must have social validity, or "buy in," on the part of everyone involved. This includes students, teachers, administrators, and parents. The present study did not capture student, teacher, or administrator perspectives and future research should explore participants' attitudes towards the intervention and its implementation. According to Hasbrouck (2018), many times existing research does not ever "trickle down" to schools because of a lack of social validity. By achieving social validity in interventions such as this, there is a better opportunity to bridge this research to practice gap.

Concluding Remarks

This study extended research in the area of secondary reading fluency interventions by measuring the effects of the Secondary Fluency Routine, an easy-to-implement, daily intervention, on the oral reading fluency and comprehension of struggling middle school readers. The results indicated that students made gains in both fluency and comprehension as a result of their participation in the SFR. Given these results and the fact that the SFR incorporates research-based principles of effective literacy instruction, it is hoped that others will consider implementing this technique in their own instructional settings, and, in doing so, will discover a user-friendly tool to help struggling readers become successful readers.

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APPENDIX A

Institutional Review Board
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Sam Houston STATE UNIVERSITY
A Member of The Texas State University System

DATE:	May 24, 2018
TO:	Shelly Landreth [Faculty Sponsor: Dr. Chase Young]
FROM:	Sam Houston State University (SHSU) IRB
PROJECT TITLE:	*The Effects of the Secondary Fluency Routine Intervention [T/D]*
PROTOCOL #:	2018-05-40673
SUBMISSION TYPE:	INITIAL REVIEW
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	May 24, 2018
EXEMPT REVIEW CATEGORY:	**Category 1**—Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Thank you for your submission of Initial Review materials for this project. The Sam Houston State University (SHSU) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

*** What should investigators do when considering changes to an exempt study that could make it nonexempt?**

It is the PI's responsibility to consult with the IRB whenever questions arise about whether planned changes to an exempt study might make that study nonexempt human subjects research. In this case, please make available sufficient information to the IRB so it can make a correct determination.

If you have any questions, please contact the IRB Office at 936-294-4875 or irb@shsu.edu. Please include your project title and protocol number in all correspondence with this committee.

Sincerely,

Donna Desforges
IRB Chair, PHSC

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Sam Houston State University IRB's records

APPENDIX B

Secondary Fluency Routine Time Log

Please document how much time was spent on the Intervention each day.

Date	Time Treatment Class 1	Time Treatment Class 2	Time Treatment Class 3

APPENDIX C

Fluency Passage 3
Genre: NF Article
From *How Video Games are Getting Inside Your Head and Wallet* by Steve Henn
ATOS: 8.3
Lexile: 1200-1300
Word Count: 198

Max Kelmon, 13, has his own little version of a man cave in Palo Alto, Calif. Behind the family kitchen in a converted garage, he has an Xbox, a big-screen TV, headphones and a microphone. There's an old couch covered in a sheet. And that couch where he parks himself, surrounded by boxes and Christmas lights, is one of Max's favorite places on the planet.

From that couch, he connects to friends all over the globe — and he spends hours, pretty much every day, honing his skills in Call of Duty.

The first commercially successful video game, Pong, invaded Americans' living rooms 38 years ago. Since then, the industry has evolved from a simple bouncing ball in the Atari original to games with astounding graphics and sound, most of them connected to the Internet.

That means that kids like Max can play with people spread across the globe. It also means that gaming companies can analyze how gamers play — each and every decision they make.

So when kids sit down with a game, they are actually sitting across a screen from adults who are studying them — and, in some cases, trying to influence their behavior in powerful ways.

APPENDIX D

Secondary Fluency Routine
Treatment Fidelity Checklist

Intervention Month: September October November December

Day of Week: M T W Th F

Class Period: _____ Grade Level: 7 8 SFR time in minutes: _____

Title of Text: _____

Teacher Behavior	Check if Observed	Comments
Allowed students choice of text (M)		
Modeled effective oral reading		
Guided students in marking up text and labelling parts (T)		
Assigned students parts to read (W)		
Led class in repeated reading, choral reading, echo reading, or antiphonal reading, setting the pace for students (circle type/s)		
Provided feedback/critique to students		
Provided direct instruction in fluency (pronunciation, rate, prosody, pausing, parsing, etc.)		
Instruction was focused on meaning		
Prepared a concluding activity or performance (F)		
OTHER:		
Student Behavior	**Check if Observed**	**Comments**
Listened as teacher modeled		
Participated in selection of text (M)		

Participated in word/text study and or discussion		
Marked and labelled script		
Participated in repeated reading, choral reading, echo reading, or antiphonal reading (circle type/s)		
Read at the appropriate volume and pace following the lead of the teacher		
Listened to and applied teacher feedback		
OTHER:		

VITA

SHELLY LANDRETH

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Ed.D. Literacy Sam Houston State University	2019
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The University of Texas Permian Basin Assistant Professor of Reading	2019-present
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La Grange ISD	
Director of Curriculum and Instruction	2017-2019
High School Teacher/Librarian	2005-2017
Middle School Teacher	2002-2005
Giddings ISD High School Teacher	2000-2002
Fayetteville High School High School Teacher/K-12 Librarian	1997-2000
La Grange ISD Middle School Teacher	1995-1997

PUBLICATIONS

Landreth, S. (2018). 3,2,1…read! An engaging reading routine that builds fluency and morale in secondary readers. *Texas Journal of Literacy Education*, *6*(2), 108-111.

Young, C., Mohr, K., & Landreth, S. *Improving second grade boys' reading comprehension with readers theater.* Manuscript under review (revision submitted).

PRESENTATIONS

National/International

Landreth, S. & Young, C. (2018, November). *Fluency for all: Effective and engaging interventions for readers of all ages*. Session presented at the annual meeting of the Association of Literacy Educators & Researchers, Louisville, Kentucky.

Landreth, S. (2017, November). *Put me in coach! Using choral reading to motivate and build confidence in struggling readers at the secondary level*. Session presented at the annual meeting of the Association of Literacy Educators & Researchers, St. Petersburg, Florida.

Young, C. & Landreth, S. (2019, November). *Differential effects of readers theater on second-grade boys' reading comprehension.* Session to be presented at the annual meeting of the Association of Literacy Educators & Researchers, Corpus Christi, Texas.

Landreth, S. & Wilson, T. (2019, November). *Building a bridge to comprehension using the secondary fluency routine*. Session to be presented at the annual meeting of the Association of Literacy Educators & Researchers, Corpus Christi, Texas.

State

Landreth, S., Kleiber, K., & Otto, S. (2019, March). *Growing fluency and confidence in middle school readers using the Secondary Fluency Routine.* Roundtable Discussion presented at the annual meeting of the Texas Association for Literacy Education, Waco, Texas.

Landreth, S. (2018, February). *Fun with fluency: An engaging fluency intervention for struggling readers at the secondary level.* Poster presented at the annual meeting of the Texas Association for Literacy Education, Canyon, Texas.

Landreth, S. (2016, April). *La Grange High School book club: Creating a community of readers.* Poster presented at the annual meeting of the Texas Library Association, Houston, Texas.

Local

Landreth, S. (2017, August). *Fluency instruction for secondary readers*. Session presented at Professional Learning Mini-Conference, La Grange ISD.

Landreth, S. (2016, August). *Warning: This research project could be fun!* Session presented at Professional Learning Mini-Conference, La Grange ISD.

PROFESSIONAL ORGANIZATION MEMBERSHIPS

Association of Literacy Educators and Researchers
International Literacy Association
National Council of Teachers of English
Texas Association for Literacy Education
Texas Council of Teachers of English Language Arts
Texas Library Association

SERVICE

Professional

Treasurer, Texas Association for Literacy Education	2019-2021
Editorial Review Board, *SAGE Open*	2018-present
Councilor, TLA Young Adult Round Table	2014-2016
Reviewer, *English in Texas*	2015-2016

Community

Adult Leader, Young Neighbors in Action youth group	2012-2018