Does Repeated Readings Using Expository Text and Word Overlap Lead to a Greater Gain in Fluency and Comprehension Than Non Word Overlap in Expository Text?

by

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Abstract

This study explored the effects of repeated readings with and without overlapping domain specific vocabulary words of expository text. The goal of the study was to test the automaticity theory, a defining component of reading fluency. The study was an experimental design with two treatment groups and a control. Twenty-five participants were randomly assigned to either the repeated reading with word overlap treatment, repeated reading without word overlap treatment, or the KWL control with a single read. A pretest was administered on the first and last day. During each reading session, participants would meet with the researcher through Zoom. Results found that participants built general fluency more quickly with the repeated reading method compared to the single read and KWL. Additionally, participants improved comprehension with the repeated reading method in both the word overlap and no word overlap treatment groups.

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I. Introduction

Background of the Problem

The National Reading Panel (2000) named fluency as one of the five pillars of effective reading instruction. Since the release of their meta-analysis, fluency has earned a salient focus in literacy instruction and assessment. The National Reading Panel (2000) defines fluency as the ability to read a text quickly, accurately, and with proper expression" (p. 3-5). Many researchers have grown concerned that the defining features of fluency-speed, accuracy, and prosody, are misconstrued, and the bridge to growing into a fluent reader is blurred within fluency instruction and assessment.

LaBerge & Samuels (1974) define fluency as automatic word recognition. Their view of fluency in reference to the automaticity theory posits that if readers can read words accurately and automatically, they have more cognitive resources to attend to the meaning of the text. Under this view, speed and prosody are results of well-developed automatic word recognition and the four features of fluency-speed, accuracy, and prosody are interdependent. This study seeks to define fluency in the terms of LaBerge & Samuels' (1974) automaticity theory as automatic word recognition, which when well developed leads to speed, prosody, and comprehension.

Statement of the Problem

This study sought to explore how repeating reading with expository text would lead to increased automatic word recognition. Fluency is a fundamental component of reading, though its defining features are often misunderstood. The National Reading Panel (2000) identified fluency as a critical competency test for reading proficiency in primary and secondary grades, but the most commonly used assessments of fluency in the classroom only measure reading

speed. This approach misses the comprehensive concept and views fluency as practiced through "skill and drill". Fluency practice and assessment has historically been applied with narrative passages. Students are timed while they orally read and the teacher calculates their correct words per minute score (CWPM). This approach overlooks the importance to prosody and comprehension, and students come to assume that fast reading equates to being a good reader.

In recent years the Common Core State Standards have called for more rigorous reading standards and a more interdisciplinary learning approach in K-12 education (Okhee, 2017). Students in K–5 are required to apply the reading standards to a variety of text types, with texts selected from a broad range of cultures and time periods (CCSSO, 2010, p. 31). Studies have shown that it is possible for fluency practice to be embedded in the reading curriculum in an authentic and purposeful way.

There are many approaches to authentic fluency instruction, but one of the most effective is repeated reading. The National Reading Panel (2000) concluded that guided oral reading procedures tended to improve word recognition, fluency, and comprehension with most groups of students. With a push to read more expository text in the K-12 classroom, it is imperative that educators view fluency in the context of the National Reading Panel and implement effective reading strategies and assessments to fluency. This study attempts to demonstrate that implementing repeating reading with expository text will lead to increased automatic word recognition and readers will show a gain in general fluency.

Purpose of the Study

The purpose of this study was to investigate the automaticity theory of fluency (LaBerge & Samuels, 1974) in relation to automatic word recognition of domain specific vocabulary words using expository text. This study was designed to expand on previous research by Rashotte and

Torgesen (1985) that found gains in fluency with repeated readings of passages with word overlap compared to no word overlap. Word overlap refers to text passages that contain content words deliberately rewritten to appear multiple times. Rashotte and Torgesen (1985) used passages with word overlap and to no word overlap with the repeated reading method. Rashotte and Torgesen's (1985) ground breaking study of repeated readings with word overlap used narrative text passages, and the participants were learning disabled.

The purpose of this current study was to use an experimental design approach to test the automaticity theory, specifically with expository text, which has unique features. This study attempts to answer whether students would gain fluency more quickly with repeated readings of expository text passages with overlapping words compared to repeating reading of expository text passages without overlapping words. The repeated readings method was chosen because it has been proven to be an effective strategy of fluency instruction. Expository text was chosen because an increased amount expository text is required in the K-12 classroom.

Research Question

There are two questions that frame this study: Does expository text engineered to have overlapping domain specific vocabulary words lead to a greater gain in general fluency than expository text with no word overlap? Does repeated readings using expository text without overlapping words lead to a greater gain in fluency than a single read of expository text without overlapping words? My hypothesis is that by increasing automatic word recognition with text engineered to have overlapping domain specific words using the repeated reading method, participants will show a measurable gain in general fluency and comprehension.

Significance of the Study

The finding from this study contributes to the growing literature on fluency and the repeated reading method. The current study considers the repeated readings method to build fluency and how repeated readings affect automatic word recognition. When teachers view automatic word recognition as a precursor to reading speed, then the components of effective fluency instruction and assessment become clearer. Additionally, teachers are working to integrate more expository text in the classroom. Students need to not only develop fluency through automatic word recognition of narrative text, but in the content areas with domain specific vocabulary as well.

Theory and Limitations

This study is an attempt to engineer expository text with overlapping domain specific vocabulary words to enhance word recognition through repeated readings. By targeting domain specific words, readers should build a sight vocabulary of these words needed to understand expository text and allow for more space in their lexicon for other cognitive resources, leading to increased comprehension and prosody.

Definitions of Terms

Comprehension: Constructing meaning from a text.

Decoding: Translating the spellings of words in text into speech through the use of phonological and orthographic cues

Decodable text: Text in which a high proportion of content words are restricted to a students' current vowel knowledge. It is used to provide practice with specific decoding skills.

Domain specific vocabulary: Low-frequency words that are limited to a specific subject.

Expository text: Text written to convey accurate information. Typically follows one of the five structures: cause and effect, compare and contrast, description, problem and solution, and sequence.

General fluency: Achieved when a reader has a sight vocabulary large enough to read the words in a wide range of text with automatic word recognition.

Fluent reading: Reading with automatic word recognition.

Narrative text: Text written to tell a story.

Prosody: An element of fluency. Expressive reading composed of timing, phrasing, and intonation, allowing a reader to convey meaning to words.

Sight words: Words that are recognized instantly and effortlessly.

Specific fluency: Gained through rereading the same text until most or all words in a text are in the sight vocabulary of the reader.

Speed: How fast a reader reads a passage. Measured by correct words per minute (CWPM).

Traditional repeated readings: Repeated readings with passages that do not contain overlapping content words.

Word overlap repeated readings: Repeated readings with passages that contain content words deliberately rewritten to appear multiple times.

II. Review of Literature

The National Reading Panel (2000) named fluency as one of the five pillars of effective reading instruction and defined fluency as the ability to read a text quickly, accurately, and with proper expression" (p. 3-5). Two major approaches to fluency instruction were discussed in the Reports of the National Reading Panel (2000). The first is to have students read passages orally with guidance and feedback. The second approach is to encourage students to read extensively on their own or with minimal guidance and feedback (NRP, 2000, p. 3-1). Despite the National Reading Panel's (2000) suggestions, fluency is generally taught as a separate area within the reading curriculum (Rasinski, 2012). The ability to read quickly, commonly when a teacher's stopwatch is used, has dominated fluency, while accuracy and proper expression have been ignored. This review of literature focuses on the National Reading Panel's (2000) first approach to fluency, where students read passages orally with guidance and feedback. Because expository text is a substantial focus in this study, this review or literature also explores the structure and characteristics of expository text, as well as studies that review the success of repeated readings as approaches to develop fluency with expository text.

Fluency

The purpose of reading is to comprehend the message that is encoded within a text. To accomplish this, multiple facets of reading are active simultaneously. Pikulski and Chard (2005) analogize fluency as a bridge that joins the two major components of reading, decoding and comprehension. On one end of the metaphorical bridge, fluency connects to accuracy and automaticity in decoding. On the other end of the bridge, fluency connects to comprehension through prosody.

The first end of the bridge, accuracy and automaticity in decoding, pertains to the automaticity theory (LaBerge & Samuels, 1974). Fluent readers decode text automatically and effortlessly. Because their awareness is not on decoding words, they have more cognitive resources to tend to the meaning of the text. Dysfluent readers are not automatic in word recognition, and because they devote so much of their cognitive resources to decoding, they have fewer resources to attend to meaning and therefore have low reading comprehension (Samuels & Farstrup, 2006, p. 95). On the second end of the bridge, fluency connects to comprehension through prosody. Prosody incorporates intonation, phrasing, and rhythm applied to words while reading. These features of prosody add meaning to text.

Harris & Hodges define reading comprehension in the *Literacy Dictionary* (1995) as the construction of the meaning of a written text through an interchange of ideas between the reader and the message of the text. As a reader attends to the elements of prosody, they are constructing the meaning conveyed through the text. Students that lack prosody are marked by their slow, laborious, and staccato reading of texts. Many readers lack comprehension while reading because they have used a significant amount of their cognitive resources decoding words. These same readers could understand a text if it were read aloud to them. If someone else took away the laborious task of decoding the words, they could use their cognitive resources to make meaning (Rasinski, 2012).

Measuring Fluency

One reason fluency may have lost its allure among reading educators is the way that it is generally measured in the classroom, using reading rate. A student's reading rate is the number of correct words they can read on a grade level text in one minute. This score has contributed to

fluency appearing to be more about speed than prosody and comprehension (Rasinski, 2012). For speed (reading rate) to increase, students must improve automatic word recognition.

Marie Clay (2000) developed running records as a formative assessment to measure a student's reading progress. They are quick to administer and allow teachers to analyze students' reading behaviors and estimate their reading level. Leslie and Caldwell (2011) use similar ways to assess fluency in the *Qualitative Reading Inventory*.

By asking students to read passages orally, teachers can measure their oral reading accuracy, miscues, self-corrections, and CWPM. The comprehension component of the *Qualitative Reading Inventory* requires students to interpret the text by answering implicit and explicit questions. In addition to narrative passages, expository passages are included in the *Qualitative Reading Inventory.* These passages are descriptive science and social studies materials on various topics on the third-through-fifth grade levels, modeled after or taken from representative textbooks. Leslie & Caldwell (2011) chose expository passages that include a range in familiarity "because research suggests that familiarity, which is measured by students' prior knowledge, is an important determinant of reading comprehension" (p.3).

Deep and Wide Reading

The elements of fluency-automaticity, accuracy, prosody, speed, and comprehension-are developed in the same way any other skill is, with practice. Wide reading is a term that relates to the common classroom practice of reading many different texts once, followed by discussion, response, and instruction targeting developing specific reading (Rasinski, 2012). Deep reading refers to students reading a single text more than once. This can involve of the process of close reading, where students pay close attention to words, syntax, and sentence structure to comprehend a short passage. It can also take place during repeated reading (Samuels, 1979),

where students read the passage more than one time to develop fluency with each reading. With deep reading, readers have more than one opportunity to read to reach a specified level of fluency.

Repeated Reading

Through their meta-analysis, the National Reading Panel (2000) confirmed that guided oral reading procedures tended to improve word recognition, fluency, and comprehension with most groups. Several reviews of research on fluency have shown that repeated reading improves word recognition, automaticity, comprehension, and attitude toward reading increased (Kuhn & Stahl, 2003; Rasinski et al., 2011).

There are a variety of approaches to guided oral repeated reading, but they share several key features. First, students are required to read and reread the same text multiple times. This reading of the text is usually done a specified number of times or until a specified level of proficiency has been reached. Second, many procedures include the use of one-to-one instruction, tutors, audio recordings, or peer guidance. Third, many procedures involve designated feedback routines for guiding the reader's performance (NRP, 2000, p. 3-11).

Various studies and meta-analyses have sought to identify the most effective key features of repeated reading including: a) the number of times the text is read, b) the instructional procedures, and c) the feedback routine. Additionally, studies have included participants with varying degrees of reading ability and the type of text used. The exact combination is still not agreed upon, but findings from empirical research have identified the most effective components.

Instructional Components

Lee and Yoon (2017) conducted a meta-analysis reviewing the effects of 34 repeated reading interventions on reading fluency for students with reading disabilities. Although their

meta-analysis intended to present instructional strategies for students with reading disabilities, studies with participants of varying ability groups and students without learning disabilities were included. Findings from the analysis with consistent previous conclusions from the National Reading Panel (2000) that the repeated reading method was more beneficial to average readers than to poor readers.

A meta-analysis conducted by (Therrien, 2004) considered the instructional components of repeated reading and the effect of repeated reading on reading fluency and comprehension with general and specific fluency. The meta-analysis suggests that transfer results, the measures of students' fluency and comprehension of later passages after previously rereading other material, imply that repeated reading may also improve students' general fluency and comprehension of new passages. These conclusions suggest that gains in specific reading fluency can lead to general fluency.

Therrien's (2004) analysis concluded that comprehension gains between reading the passage three times and four times was minimal. Four additional studies, (DiStefano, Noe, & Valencia, 1981; O'Shea et al., 1985, 1987; Stoddard, Valcante, Sindelar, O'Shea, & Algoz-zine, 1993) investigated the number of readings repeated and found that gains in comprehension ceased to be significant after students read the text the third time. This suggests that reading the passage three times is ideal.

Therrien's (2004) analysis suggests that repeated reading methods should be implemented with an adult instead of a peer. He found that fluency and comprehension effect sizes for the adult-implemented interventions were more than three times larger than peer implemented interventions. Therrien's (2004) also examined non-transfer interventions, which measured students' ability to fluently read or comprehend the same passage after reading it

multiple times. Although all non-transfer interventions had students read passages aloud to an adult, three instructional components varied among studies and were analyzed further: cued reading, corrective feedback, and performance criteria.

Therrien's (2004) analysis found that interventions that used a reading criterion such as reading until a specified number of correct words per minute (CWPM) is reached or reading a passage within a predetermined time obtained an increase in mean fluency effect sizes more than four times larger than interventions that used a fixed number of readings. Prior to reading the text, the teacher cued the students to focus on speed or comprehension. His analysis yielded unclear results and recommended that until additional research is conducted on which type of cue to provide, the combined speed and comprehension cue is used. Corrective feedback consisted of correcting mispronunciations or omissions while students were reading or after they had read a passage. The teacher either provided students with the correct pronunciation or prompted the student to sound out or reread the words. Studies with a corrective feedback component obtained higher mean fluency and mean comprehension scores than studies that did not include corrective feedback (Therrien, 2004).

An effective method of corrective feedback is scaffolding. Kuhn et al. (2006) determined that if scaffolding techniques that provide immediate corrective feedback and modeling are used during oral reading practice, children can read text passages that are above their instructional level. While it might be possible for scaffolding and modeling during oral reading to allow children to read above their instructional level, the level at which a reader can read words with 95-98% accuracy, Therrien (2004) concluded in his meta-analysis that using instructional level texts instead of difficult grade level text, text based on the standards and skills that students should master by the end of a grade, lead to faster and larger gains in fluency.

Word Overlap

Using a text with overlapping words has been proven to be an effective use of text type to increase reading fluency. Rashotte and Torgeson (1985) pioneered the use of text that is engineered to consist of overlapping words. Their study found that over short periods of time, reading fluency gains are dependent on overlapping words in a given text, which is considered specific fluency. Their study, using children with a learning disability, revealed that repeated readings with stories using overlapping words improved fluency, and that if stories have few words that repeat, repeated readings are not more effective than no repeated reading. Their study was strong validation for the automaticity theory (LaBerge & Samuels, 1974), supporting the view that automatic word recognition positively affects fluency.

A study by Reitsma (1983) involving full alphabetic first grader readers, discovered that a minimum of four decoding trials was sufficient for children to store a new word in their sight word vocabulary. This finding suggests that if text is engineered to have overlapping words so that students are exposed to the same word at least four times through repeated reading, they will increase reading fluency.

In relation to the automaticity theory (LaBerge & Samuels, 1974), fluency can be classified as general or specific fluency. Specific fluency refers to fluency gains reading a specific text. Through the use of repeated readings, if students decode an unfamiliar word at least four times (Reitsma,1983), these words are stored in their lexicon as sight words. Once those unfamiliar words have become sight words, students can redeploy their cognitive resources to make meaning from the text. This might develop in additional reads of the same text or transfer to new passages (general fluency).

Expository Text

Narrative and expository text have different purposes for reading. Narrative texts are written to tell a story. Expository texts are written to convey accurate information using timeless verbs and generic nouns (Kletzien & Dreher, 2017). For well more than a decade, educators have been calling for more expository text to be incorporated into the primary-grade classrooms, and educational standards have increased the need for children to read and comprehend expository text (Kletzien & Dreher, 2017). Students in K–5 are required to apply the reading standards to a variety of text types, with texts selected from a broad range of cultures and time periods. In the K-5 grades, expository text includes "biographies and autobiographies; books about history, social studies, science, and the arts; technical texts, including directions, forms, and information displayed in graphs, charts, or maps; and digital sources on a range of topics" (CCSSO, 2010, p. 31).

Expository texts typically follow one of the five structures: cause and effect, compare and contrast, description, problem and solution, and sequence. Additionally, these structures widely vary between content areas. Expository texts are often written using devices to present and organize information in ways that help readers understand the information (Herbert et al., 2016). Not only is the text structure of expository text more complex and implicit than narrative text, the graphics included in expository text typically present essential information the reader needs to fully comprehend the information (Shanahan et al., 2013).

It is important to note that the present study does not use a text with graphs, and therefore the component of graphics features is not germane to this review.

Another distinguishing characteristic of expository text is the greater extent of domain specific vocabulary (Kostewicz & Kubina, 2011). In science text, the vocabulary is precise and has narrower parameters of meaning (Rupley & Slough, 2010). Social studies texts are more

similar to narrative texts, but still follow one of the five expository text structures. Furthermore, science and social studies textbooks interchange these text structures throughout units and chapters to convey information, making content-area reading more difficult.

Teaching orthographic patterns allows readers to apply this knowledge to decode new words when they encounter words containing the same orthographic pattern (Adams,1990; Ehri, 2005). This explicit, systematic approach to phonics is typically taught with vowel-consonant combinations in lower grades and practiced with narrative text. However, orthographic patterns can take a variety of forms including prefixes, suffixes, and Latin and Greek roots (Rasinski et al., 2016). Domain specific vocabulary in expository text tends to incorporate more forms of prefixes, suffixes, and Latin and Greek roots than narrative text. Because expository texts are more likely to have words that are interrelated thematically, they are ideal for teaching words in semantically related groups (Kletzien & Dreher, 2017).

Teachers should prepare students to read complex expository texts in the early elementary school grades. Domain specific expository text can be infused across all grade levels during the English language arts block by using rich, age-appropriate content knowledge and vocabulary in social studies, science, and the arts (CCSSO, 2010). A study using seven- and eight-year-olds by Elley (1989) found that read alouds are a significant source of vocabulary acquisition, regardless of whether the teacher explains word meaning. He concluded that the best predictors of word learning were the frequency of the word in the text, depiction of the word in illustrations, and the redundancy of the word in the surrounding context, such as the pictural representations.

Knowing how authors structure a text may provide readers information about how to approach the text and assist them in identifying important information as they read (Herbert et

al., 2016). Without exposure to expository text structure and vocabulary, students will struggle to fluently read expository text when it dominates the curriculum requirements of higher grades.

Conclusion

In conclusion, previous research has taught us what fluency is, and the most effective ways to teach students. Research provides us with the information about effective direct fluency assessments and ways to use data to drive future fluency instruction. Repeated reading is the most effective direct approach to fluency instruction (National Reading Panel, 2000). Additional components of fluency instruction are important when implementing a repeated reading intervention.

These finding from the literature guided the methods of this research study. The suggestions from the literature are as follows: (a) repeated reading is most effective when implemented with an adult instead of a peer; (b) interventions that used a reading criterion such as reading until a specified number of correct words per minute are more effective; (c) reading instructional level texts, instead of difficult grade level text leads to faster and larger gains in fluency; (d) gains between reading the passage three times and four times is minimal; (e) corrective feedback is imperative and scaffolding is essential (Therrien, 2004). In the next chapter, the findings from the literature review will be used in developing the research study and reading intervention.

III. Methods

The purpose of this research study was to determine if students would gain fluency more quickly with repeated readings of passages using an expository text with word overlap compared to an expository text without word overlap. This study aimed to extend findings from previous research that found gains in fluency with repeated readings of passages with word overlap compared to no word overlap using narrative text. There are two questions that frame this study: Does expository text engineered to have overlapping domain specific vocabulary words lead to a greater gain in general fluency than expository text with no word overlap? Does repeated readings using expository text without overlapping words lead to a greater gain in general fluency than a single read of expository text without overlapping words? My hypothesis is that by increasing automatic word recognition with text engineered to have overlapping domain specific words using the repeated reading method, participants will show a measurable gain in general fluency and comprehension scores.

This chapter will present the research objectives, the research design, participants, instrumentation, procedures for each group, and materials used.

Research Objectives

This study was inspired by Rashotte and Torgesen (1985) and was an attempt to replicate their use of text with overlapping words. Their study using overlapping words with a narrative passage pioneered the way for similar studies. None of these studies used expository text with overlapping words. Rashotte and Torgesen (1985) used their participants as their own controls. This study uses two different treatments and a control group. The study by Rashotte and Torgesen (1985) used participants that were readers with a learning disability; this research study uses participants that are normally developing.

The researcher chose an experimental design to isolate the effect of reading overlapping words and the effect of repeated reading. By using a control that is not repeated reading and does not have overlapping text, the effect of both the repeated reading method and the repeating reading method with overlapping words will be isolated.

The researcher randomly assigned 25 participants to one of two treatment groups or to the control group. The experimental treatment groups were the repeated reading method with overlapping words, and the repeated reading method without overlapping words. The control group read the same text as the no-overlap group but did not take part in the repeated reading method. The control group read the text only once and completed a KWL graphic organizer before and after the reading.

The word overlapped chapters were rewritten for domain specific vocabulary words to overlap at least once and no more than four times more than the original chapter. With all five chapters combined, the original text included 43 domain specific vocabulary words. Each chapter had a specific selection of domain specific words engineered to overlap, because these were important to comprehend the book as a whole, some words repeated in more than one chapter. See figures 4 and 5 in the Appendix for samples of texts with and without engineered word overlap.

Research Design

This study used an experimental research design. Treatment group one followed the repeated readings method with the text engineered to have overlapping words. Treatment group two followed the same repeated readings method using the original text without overlapping words. The control group did not receive the repeated reading treatment. They read the same text without overlapping words as treatment group two but read the text only once and completed a

KWL chart with the researcher. Having a control group provides data to compare the relationship between the independent and dependent variables.

Ogle (1986) first suggested the Know-Want-Learn (KWL) strategy as an instructional reading strategy. Before reading a text, students access their prior knowledge by discussing what they know about the topic. They then determine what they want to know about the topic. After they have read the passage, they recall what they learned from reading the text. The KWL control group answered the same comprehension questions as both treatment groups.

The reading materials were equated in readability and I examined the text to assure a sufficient number of overlapping words appeared in the word overlap version. Each session was done in one sitting and lasted for 10-15 minutes so that repeated-reading participants had time to read the passage three times in order to meet or exceed the goal of reading 100 CWPM.

Participants

Participants were 25 normally developing readers. Because this study was conducted in August and many children had not been in school since March due to social distancing restrictions, the study was open to students entering or exiting the third grade. To qualify for the study, participants had to be able to read between 80-100 CWPM on a level 3 passage from the *Qualitative Reading Inventory* (Leslie & Caldwell, 2011). Thirty-two participants applied for the study. Three participants did not qualify for the study because they read less than 80 CWPM. Four students were unable to participate due to scheduling conflicts. Participants were randomly assigned to one of the two treatment groups or the control group when they qualified for the study.

Because the study was conducted virtually, the regional population of the students was broad and included participants from the Northeast, Southeast, Southwest, and West regions of

the United States. Participants completed one reading session a day that lasted between 10-15 minutes for seven days. The sessions were held at various times of the day, depending on the families' availability. Some participants were participating in their school's virtual learning program and were able to meet during normal school hours. Not all sessions were consecutive because of scheduling conflicts, but all participants completed the seven sessions in less than two weeks.

The sample included 10 males and 15 females. The word overlap treatment consisted of 5 males and 4 females, of whom 7 were white and 2 Hispanic. The repeated reading without word overlap treatment consisted of 2 males and 6 females of whom 7 were white and 1 Hispanic. The control group consisted of 5 males and 3 females, of whom 7 were white and 1 African-American. Through random assignment, 9 participants were in the word overlap treatment, 8 participants were in the no word overlap treatment, and 8 participants were in the control. All 25 participants remained throughout the entire study. The small sample size is owed to having to conduct this study virtually during the COVID-19 pandemic.

The sample is not very diverse; 84% of the participants are white. There were no Asian participants. The population of genders are not represented equally, with 40% male and 60% female. Participants represent 4 of the 5 regions of the United States. Geographically, 1 participant was from the Northeast, 20 from the Southeast, 3 from the Southwest, and 1 from the West. The demographics for the sample are displayed in Table 1.

Table 1

Demographics of Participants

Baseline characteristic	Word Overlap		No Word Overlap		KWL		Full sample	
	n	%	*n*	%	*n*	%	*n*	%
Gender								
Female	4	44%	6	75%	3	38%	15	60%
Male	5	55%	2	25%	5	62%	10	40%
Race/Ethnicity								
White	7	78%	7	87.5%	7	87.5%	21	84%
Black/African American	0	0%	0	0%	1	12.5%	1	4%
Hispanic	2	22%	1	12.5%	0	0%	3	12%
Region								
Northeast	1	11%	0	0%	0	0%	1	4%
Southeast	6	67%	6	75%	8	100%	20	80%
Southwest	2	22%	1	12.5%	0	0%	3	12%
West	0	0%	1	12.5%	0	0%	1	4%

Instrumentation

General fluency, miscues, and comprehension were measured at pretest and posttest using level 3 expository text passages from the *Qualitative Reading Inventory* (Leslie & Caldwell, 2011). The passage chosen for the pretest is titled “Cats: Lions and Tigers in your House” and contains 261 words. The passage chosen as the posttest is titled “Where do People Live?” and contains 279 words. General fluency was measured through comparison of correct words per minute (CWPM) from pretest and posttests passages from the *Qualitative Reading Inventory* (Leslie & Caldwell, 2011).

The CWPM were calculated by subtracting the total number of miscues (substitutions, reversals, and omissions when not self-corrected) from the total words in the passage. That difference was then multiplied by 60, and then divided by the number of seconds it took to read the passage. The researcher used a timer that recorded in minutes and seconds and then

converted the total time to seconds. The miscues recorded were subtracted from the total word count and were not counted as correctly read words.

Comprehension questions were asked immediately following the reading of the passage. The examiner asks the participant two types of questions: explicit questions, questions with answers stated explicitly in the text, and implicit questions, questions with answers that the participant must infer from information. Answers to text-implicit questions must be tied to information in the story and not simply derived from prior knowledge. A rubric is provided for examiners. Independent, instructional, and frustration levels for comprehension are derived from scores on this measure (Leslie & Caldwell, 2011). To control for the effects of instrumentation, all assessments were administered by the researcher to ensure all directions and calculations were administered and scored the same way (Campbell & Stanley, 1963).

Procedures

Due to the COVID-19 pandemic and social distancing restrictions, recruiting participants was uniquely difficult. The recruitment process took place through an email flyer using the Auburn University Listserv for faculty and staff. The email asked for help to recruit third graders for the study. As the email was shared, parents contacted the researcher to learn more about the study and discuss the Zoom process. Participants received no compensation for participation in the study. Participants were randomly assigned to one of two treatment groups or the control group when they qualified for the study. All treatments were administered simultaneously during the same block of time to control for the effect of history (Campbell & Stanley, 1963).

Intervention Design

Repeated Readings Treatment

Both experimental treatment groups, repeated reading without word overlap and repeated reading with word overlap, followed a modified version of Samuels's (1979) method of repeated readings. They read one chapter three separate times during a session. Each chapter ranged from 176-244 words. This text range was influenced by Samuels (1979) method of repeated readings, which used texts with approximately 250 words.

On the first day of the treatment, the researcher introduced the method of repeated readings and explained to the participant that they had three trials that day to reach the goal of 100 CWPM. If they reached their goal before the third trial, we would see if they could read more than 100 CWPM. The determination of the CWPM goal was influenced by the Hasbrouck & Tindal (2017) oral reading fluency norms. The researcher's selection of three trials of repeated reading, despite the participant reaching the goal of 100 CWPM, is because the oral reading fluency norms are on a percentile range scale. The CWPM for third grade readers in the fall are 40-111 CWPM rather than a specific number. Readers in the 50th-90th percentile range from 83-111 CWPM (Hasbrouck & Tindal, 2017).

The following procedural steps guided activities for the experimental groups using the method of repeated readings.

1. Before each chapter was read, the researcher gave an introductory booktalk to provide background knowledge about what the participant would be reading in that chapter. The booktalk was carefully prepared so that it would not contain any of the new domain specific vocabulary words in that session's chapter.

2. As the participant read, the researcher took a running record (Marie Clay, 2000). The researcher marked any miscues and self-corrections, and then calculated the CWPM.

3. The participant's progress was tracked after each trial during each session. First, the CWPM were tracked on a fluency timeline. A timeline marked 0 to 150 was displayed to the participant on a slide. A clip-art picture of a tiger was used to mark the participant's CWPM.

4. The participant was then shown the Likert-type Garfield Reading Attitude Survey (McKenna & Kear, 1990). It is called the Garfield Survey because there are four pictures of the cartoon character, Garfield. In each picture, Garfield's attitude ranges from very happy to negative. This was explained to participants as "the reading version of the smiley face scale at the doctor's office." They were asked to rate how they felt about their fluency after each reading trial by identifying which Garfield picture they related to the most.

5. Each time the participant read the chapter, the researcher asked two comprehension questions, one explicit and one implicit. These questions were modeled after the comprehension questions for expository text in the *Qualitative Reading Inventory* (Leslie & Caldwell, 2011).

6. Before the second and third trial, the researcher reviewed any miscues the participants missed in the previous reading. To review miscues, after the reading trial, the researcher showed the participant the miscue in the sentence. The researcher prompted the participant to decode the word, crosscheck for understanding by finishing the sentence, and then reread the sentence. This scaffolding was done by using the pointer feature on Zoom while the researcher's screen was shared to the participant.

For example, a few participants misread to word *wire*. To review this miscue, the researcher showed the participant the word *wire* in the sentence and prompted the participant to decode the word by pointing to it with the laser pointer. The researcher then prompted the participant to crosscheck for understanding by finishing the sentence to make sure that the word *wire* made sense in the sentence. Learning the word *wire* as a sight word requires readers to

examine the spelling to mentally mark that the letter *e* on the end of the word is silent and signals that the *i* is a long vowel. Lastly, the researcher would prompt the participant to reread the sentence. The participant would read, “How many coils of wire should the toy have?”, to secure his or her understanding of the word.

Order of Materials. For the repeated reading with and without word overlap experimental treatments, the slides were in the same order as follows: (a) title slide, (b) booktalk, (c) chapter passage, (d) fluency tracker, (e) Garfield survey, (f) comprehension check. The slides for the booktalk and comprehension did not have the words for the student. They were simply slides to indicate the step of the lesson, marking the place where the researcher orally presented the booktalk and asked the comprehension questions.

Control Treatment - KWL

The control group read the same text without overlapping words as treatment group two but did not follow the repeated readings method. The control group read the text once and completed a KWL chart. On the first day of the control treatment, the researcher introduced the KWL chart and explained that before they read the chapter, they would discuss what they know about the topic in the K column and what they want to know in the W column. They were told that after they read the chapter, they would discuss what they learned in the L column. Before each chapter was read, the researcher gave an introductory booktalk to provide background knowledge of what the participant would be reading in that chapter. The booktalk was carefully prepared so that it would not contain any of the new domain specific vocabulary words in that session’s chapter and the same as the booktalk for the repeated reading treatment groups.

After the participant read the chapter, they were asked six comprehension questions, three implicit and three explicit. The comprehension questions were the same questions that were

asked to the treatment groups, modeled after the comprehension questions for expository text passages in the *Qualitative Reading Inventory* (Leslie & Caldwell, 2011). The treatment groups were asked two questions after each trial, while the KWL group was asked all six questions after their single trial.

In order for the KWL control group, the slides were in order as follows: (a) title slide, (b) booktalk, (c) KWL chart with three question marks in each column, (d) KWL chart with question marks in the know and want to know columns, (e) chapter passage, (f) KWL chart with question mark in the learned column, (g) comprehension slide. The slides for the booktalk, comprehension, and KWL charts did not have the words for the participant. They were simply slides to indicate the step of the lesson. Student's responses were discussed orally but not written down on the KWL chart. The researcher orally presented the booktalk and asked the comprehension questions.

Materials

All participants read an electronic version of *Slinky Innovators: The James Family* (Slater, 2015). This book is an expository chapter book written using a sequential text structure. The biography introduces the inventors of the Slinky, the James family. The story follows Richard James's childhood, his engineering education, his naval engineering career, and the process of manufacturing the Slinky.

The Lexile Framework for Reading (MetaMetrics, 2020) measure was chosen to gauge the difficulty of the book because the measure falls within a range of levels as compared to a more traditional leveling system that assigns a specific number. The benefit of using a text leveling system that provided a range versus an exact text level allowed for each chapter to slightly vary depending on the individual chapters' text features. Lexile Framework for Reading

(MetaMetrics, 2020) rates this book's Lexile text measure as 680L. According to MetaMetrics (2020), the company that created the Lexile Framework for Reading, a third grade Lexile reader level range, is 520L to 820L.

Because a large part of this study included the integration of expository text with repeated reading and word overlap, it was important to select a text leveling system that considers the features of expository text beyond quantitative measures. The text measurement of *Slinky Innovators: The James Family* (Slater, 2015), consists of quantitative and qualitative components. Quantitative components of assessing text include the features that can be calculated with a computer such as sentence length, number of syllables, word length, and word frequency. Qualitative components measure expository text structure organization, relation among ideas, language features of vocabulary, and how much and what kind of background knowledge a reader needs to comprehend the text (MetaMetrics, 2020). These qualitative components of expository text set it apart from narrative text and affect the demands on a reader's cognitive resources.

To consider the qualitative components, the book was compared to the Fountas and Pinnell Text Level Gradient (2017) which evaluates genre/form, text structure, content, themes and ideas, language and literary, features, sentence complexity, vocabulary, words, illustrations, and book and print features. The Fountas and Pinnell Text Level Gradient classify the book as a level O, which corresponds to the book's Lexile level. The qualitative features of the text do not vary between chapters, which allowed the researcher to focus on the analysis of the quantitative components of the text within each chapter of the overlap and word overlap texts.

The text from the chapters of the original book were analyzed separately using the Lexile Analysis Tool (MetaMetrics, 2020), which is available for free to all teachers in the state of

Alabama. This ensured that each chapter was leveled appropriately. The tool showed each chapter's Lexile level based on two factors: word frequency and sentence length. The analysis states that these factors have been shown to be reliable predictors of how difficult a text is to comprehend.

The researcher then engineered the text with overlapping domain specific words. The Lexile Analysis Tool identified vocabulary words within the text of each chapter that have significant consequence or relevance and can be used to help inform instruction. The identified words and domain specific vocabulary words identified in the book's glossary were chosen as the overlapping words.

The word overlapped chapters were rewritten for domain specific vocabulary words to overlap at least once and no more than four times more than the original chapter. With all five chapters combined, the original text included 43 domain specific vocabulary words. Each chapter had a specific selection of domain specific words engineered to overlap. Some words repeated in more than one chapter. Table 2 shows the domain specific vocabulary words and the frequency in which they appear in each reading treatment group.

Table 2

Frequency of Domain Specific Vocabulary Words in Treatment Groups

Word	KWL	RR	Word Overlap
wire	8	24	21
spring	7	21	24
Philadelphia	4	12	15
engineer/engineering	4	12	12
invent/invention/inventor	4	12	21
ships	4	12	15

Pennsylvania	3	9	24
instruments	3	9	15
coil	3	9	9
United States	2	6	12
submarines	2	6	6
market research	2	6	6
economic	1	3	6
depression	1	3	6
essential	1	3	6
Quaker	1	3	6
mechanical	1	3	6
naval	1	3	6
Altoona	1	3	6
Word War II	1	3	6
armed forces	1	3	9
tanks	1	3	6
airplane	1	3	6
factories	1	3	6
tugboats	1	3	3
nautical	1	3	6
enemies	1	3	6
navigate	1	3	6
stabilize	1	3	6
machine	1	3	3
manufacture	1	3	3
mass produced	1	3	6
dictionary	1	3	6
Gimbels	1	3	9
ramp	1	3	6
demonstration/demonstrated	1	3	6

contribute	1	3	6
communicate	1	3	6
locate	1	3	6
ammunition	1	3	6
introduce	1	3	6
enthusiasm	1	3	6
tension	1	3	6

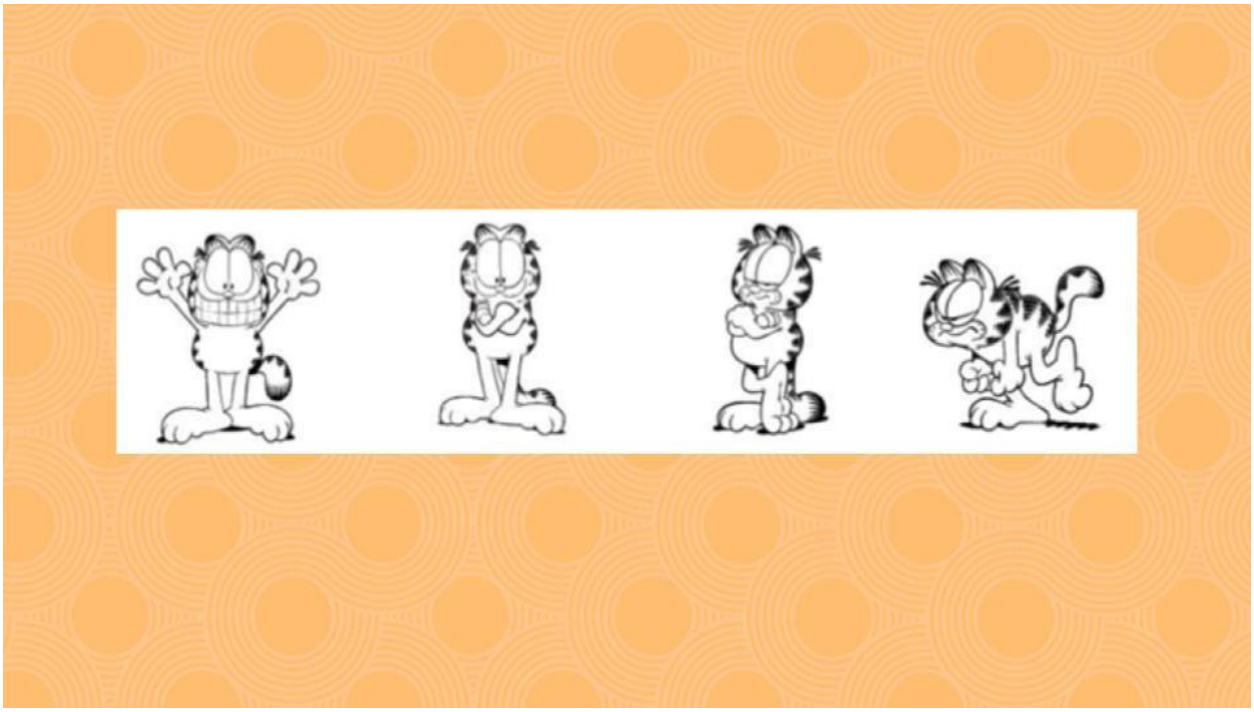
The Qualitative Reading Inventory (QRI; Leslie & Caldwell, 2011) was chosen as a pretest and posttest measure of CWPM, miscues, and comprehension for the same reason. Both selected *QRI* passages are expository texts and have an associated Lexile text measure that falls within a third grade reader's expected Lexile range.

Google Slides were used to present the information to the participants. This research study was conducted during the COVID-19 global pandemic, and meeting with participants in person posed more than a minimal potential risk of harm. The researcher used Zoom to virtually meet with the participants. While in the Zoom meeting, the researcher shared the computer screen to display the materials on Google Slides. Each chapter is written on a single slide. Each chapter ranges from 176-244 words. This text range was influenced by Samuels (1979) method of repeated readings, which used texts with approximately 250 words.

Students also viewed a slide with the Garfield Reading Attitude Survey (McKenna & Kear, 1990), shown in Figure 1, and a fluency tracker. The Garfield Reading Attitude Survey (McKenna & Kear, 1990) is a Likert-type scale survey that consists of four pictures of the cartoon character, Garfield. In each picture, Garfield's attitude ranges from very happy to negative. This was explained to participants as "the reading version of the smiley face scale at the doctor's office." They were asked to rate how they felt about their fluency after each reading trial by identifying which Garfield picture they related to most.

Figure 1

Google Slide of Garfield Reading Attitude Survey



The fluency tracker slide, shown in Figure 2, was used to track the students' progress after each trial during each session. The timeline was marked 0 to 150 and a picture of a jungle was at the end range of the tracker. A clip-art picture of a tiger was used to mark the participant's CWPM. At the beginning of a session the tiger started on 0. After each trial, the researcher moved the tiger to reflect the number of CWPM he/she read that trial.

Figure 2

Google Slide of Fluency Tracker

Fluency Tracker

0-----10-----20-----30-----40-----50-----60-----70-----80-----90-----100-----110-----120-----130-----140----150

IV. Results

The purpose of this research study was to examine automatic word recognition as a defining feature of fluency. I hypothesized that increasing automatic word recognition with text engineered to have overlapping domain specific words using the repeated reading method would show a measurable gain in general fluency and comprehension scores. Results of the analyses are presented in this chapter to address the following research questions: Does expository text engineered to have overlapping domain specific vocabulary words lead to a greater gain in general fluency than expository text with no word overlap? Does repeated readings using expository text without overlapping words lead to a greater gain in fluency than a single read of expository text without overlapping words? This chapter will present the research objectives, the research design, participants, instrumentation, procedures for each group, and materials used.

Comparison Between Groups

A pretest, a level 3 passage from the Qualitative Reading Inventory, was administered to participants to determine qualification for the study. If participants read between 80-100 CWPM on the level 3 passage, then they qualified for the study because the participants demonstrated their readiness for gaining reading fluency and would be able to read the leveled expository text passages. Pretest data derived from the Qualitative Reading Inventory were examined for the equality of group on three measures: (a) general fluency (b) miscues and (c) comprehension.

A one-way ANOVA was used to compare the participants' pretest scores between groups on the measures of general fluency, miscues, and comprehension. As Table 3 shows, there was no significant difference between the pretest scores for general fluency, $F(2, 22)= .346$, $p =.711$), miscues, $F(2, 22)= .301$, $p =.743$), and comprehension, $F(2, 22)=.001$, $p =.711$). This result shows that all three groups are equivalent at baseline.

Table 3

One-Way ANOVA for Pretest Scores

		Sum of Squares	df	Mean Square	F	*p*	Eta Squared
General Fluency	Between Groups	49.32	2	24.66	.346	.711	.031
	Within Groups	1566.431	22	71.20			
	Total	1615.76	24				
Miscues	Between Groups	.319	2	.159	.301	.743	.027
	Within Groups	11.638	22	.529			
	Total	11.957	24				
Comprehension	Between Groups	.001	2	.001	.001	.999	< .001
	Within Groups	12.639	22	.574			
	Total	12.640	24				

A second level 3 passage from the *Qualitative Reading Inventory*, was administered to participants to as a posttest. Posttest data derived from the *Qualitative Reading Inventory* were examined for the equality of group on three measures: (a) general fluency (b) miscues and (c) comprehension. Table 4 shows descriptive statistics for pretest and posttest results for both treatment groups and the control.

Table 4

Descriptive Statistics for Pretest and Posttest Scores

		Word Overlap (*n*=9)		No Word Overlap (*n*=8)		KWL (*n*=8)		Overall (*n*=25)	
		M	SD	M	SD	M	SD	M	SD
General Fluency	Pretest	86.77	8.01	89.88	9.44	89.50	7.89	88.64	8.20
	Posttest	100.55	8.64	94.87	6.33	88.875	7.68	95.0	8.82
Miscues	Pretest	98.89	.77	98.89	.66	99.19	.73	98.96	.70
	Posttest	99.38	.50	99.32	.48	99.50	.63	99.40	.52
Comprehension	Pretest	7.11	.78	7.12	.83	7.13	.64	7.12	.72
	Posttest	7.78	.441	7.75	.46	7.25	.88	7.60	.64

A one-way ANOVA was used to compare the participants' posttest scores between groups on the measures of general fluency, miscues, and comprehension. As Table 5 shows, there was significant difference between groups in general fluency with large effect size, $F(2, 22)= 4.921$, $p=.017$, $\eta^2=.309$. No statistical differences were found between groups on measures of miscues, $F(2,22) =.232$, $p=.795$, or comprehension, $F(2,22) =1.857$, $p=.180$. The effect size ($\eta^2=.309$) indicates 30.9% of the variance in general fluency posttest scores can be explained by type of reading treatment. To evaluate which groups were significantly different, a Tukey HSD post-hoc test was examined. Post-hoc results showed significant difference between the KWL control and repeated reading with word overlap treatment, $p =.013$. The repeated reading with word overlap treatment had a higher gain in general fluency than the KWL treatment.

Table 5

One-Way ANOVA for Skills Gained (Post-Pre)

		Sum of Squares	df	Mean Square	F	*p*	Eta Squared
General Fluency	Between Groups	578.028	2	289.014	4.921	.017	.30
	Within Groups	1291.972	22	58.776			
	Total	1870.00	24				
Miscues	Between Groups	.137	2	.069	.232	.795	.021
	Within Groups	6.519	22	.296			
	Total	6.657	24				
Comprehension	Between Groups	1.44	2	.722	1.857	.180	.144
	Within Groups	8.556	22	.389			
	Total	10.00	24				

Comparison Within Groups

Paired samples *t*-tests, listed in Table 6, indicate significant differences in pretest and posttest scores for the repeated reading with word overlap treatment in general fluency with large effect size, $t(8) = 9.89$, $p < .001$, Cohen's $d = 3.2$, and comprehension with large effect size, $t(8) = 2.82$, $p = .022$, Cohen's $d = .94$. There were no significant differences for miscues $t(8) = 1.66$, $p = .134$. These results show that participants in the repeated reading with word overlap treatment group increased their general fluency score 3.2 standard deviation units from pretest to posttest for general fluency and 0.94 standard deviation units from pretest to posttest for comprehension.

Table 6

Paired Samples t-tests for Repeated Reading with Word Overlap

Paired Differences						
Measures	*M*	*SD*	*t*	df	*p*	Cohen's *d* effect size
General Fluency	13.77	4.17	9.89	8	< .001	3.2
Miscues	.504	.90	1.66	8	.134	.55
Comprehension	.667	.70	2.82	8	.022	.94

Paired samples *t*-tests, listed in Table 7, indicate significant differences in pretest and posttest scores for the repeated reading without word overlap treatment in general fluency with large effect size, $t(7) = 2.64$, $p < .033$, Cohen's $d = .93$, and comprehension with large effect size, $t(7) = 2.37$, $p = .049$, Cohen's $d = .84$. There were no significant differences for miscues $t(7) = 1.51$, $p = .173$. These results show that participants in the repeated reading without word overlap treatment group increased their general fluency score 0.93 standard deviation units from pretest to posttest for general fluency and 0.84 standard deviation units from pretest to posttest for comprehension.

Table 7

Paired Samples t-tests for Repeated Reading without Word Overlap

Paired Differences						
Measures	*M*	*SD*	*t*	df	*p*	Cohen's *d* effect size
General Fluency	5.00	5.34	2.64	7	.033	.93
Miscues	.42	.79	1.51	7	.173	.53
Comprehension	.62	.74	2.37	7	.049	.84

Paired samples *t*-tests, listed in Table 8, indicate no significant differences in pretest and posttest scores for the KWL treatment in general fluency, $t(7) = -.72$, $p = .493$, miscues, $t(7) = 1.54$, $p = .166$ and comprehension, $t(7) = .42$, $p = .685$. These results show that participants in the KWL did not increase their general fluency, miscues, or comprehension.

Table 8

Paired Samples t-tests for KWL

	Paired Differences					
Measures	*M*	*SD*	*t*	df	*p*	Cohen's *d* effect size
General Fluency	-0.62	2.44	-.72	7	.493	-.25
Miscues	.36	.67	1.54	7	.166	.54
Comprehension	.12	.83	.42	7	.685	.15

Summary

As was hypothesized, participants built general fluency more quickly with the repeated reading method compared to the single read and KWL. Additionally, participants improved comprehension with the repeated reading method in both the word overlap and no word overlap treatment groups. I hypothesized that participants would build general fluency more quickly with the repeated reading method using word overlap compared to no word overlap. Results from a one-way ANOVA comparing the participants' posttest scores between groups showed that there were no statistically significant differences between the repeated reading with word overlap treatment and repeated reading without word overlap treatment.

V. Summary of Results

This study aimed to answer two questions: Does expository text engineered to have overlapping domain specific vocabulary words lead to a greater gain in general fluency than expository text with no word overlap? Does repeated readings using expository text without overlapping words lead to a greater gain in fluency than a single read of expository text without overlapping words? My hypothesis was that by increasing automatic word recognition with text engineered to have overlapping domain specific words using the repeated reading method, participants would show a measurable gain in general fluency and comprehension scores.

This chapter discusses the results of the study, its theoretical implications, its classroom implications, and its limitations. Recommendations for further research on fluency and expository text, and online learning is also provided.

The purpose of this study was to examine automatic word recognition as a defining feature of fluency. I hoped to replicate the findings on word overlap of Rashotte and Torgesen (1985) using an expository text passages and normally developing students as participants. Fluency instruction is more intentional when it is constructed to practice and assess the defining features of fluency, which are the causal factors for improving fluency. Through automatic word recognition, as defined by LaBerge and Samuels (1974), if readers can read words accurately and automatically, they have more cognitive resources to attend to the meaning of the text.

This study used an experimental design to compare the pretest to posttest scores of the repeated reading treatment without word overlap and the repeated readings with word overlap treatment on three measures: (a) miscues, (b) words correct per minute, and (c) comprehension. It also compared the pretest to posttest scores of the repeated reading treatment without word

overlap to the control group-participants that read the text one time and completed a KWL chart. Expository text was used for the pretest, posttest, and reading intervention.

The findings from the literature guided the methods of this research study and the structure of the reading intervention. The suggestions from the literature are as follows: (a) repeated reading is most effective when implemented with an adult instead of a peer; (b) interventions that used a reading criterion such as reading until a specified number of correct words per minute are more effective; (c) reading instructional level texts, instead of difficult grade level text leads to faster and larger gains in fluency; (d) gains between reading the passage three times and four times is minimal; (e) corrective feedback is imperative and scaffolding is essential (Therrien, 2004).

The researcher met with each participant one-on-one. The criterion goal was for participants to read 100 CWPM and they read the text three times in each session. Participants received corrective feedback after each reading. Before the second and third trial, the researcher reviewed any miscues the participants missed in the previous reading. To review miscues, after the reading trial, the researcher showed the participant the miscue in the sentence. The researcher prompted the participant to decode the word, crosscheck for understanding by finishing the sentence, and then reread the sentence. This scaffolding helped participants read words accurately and automatically, leading them to have more cognitive resources to attend to the meaning of the text.

The expository text for the pretest, posttest, and intervention were carefully selected to measure an accurate reading level of the text's qualitative and quantitative components. The researcher engineered each of the five chapters of the text with overlapping domain specific words identified by the Lexile Analysis Tool to have significant consequence or relevance and

can be used to help inform instruction. Additional domain specific words were identified in the book's glossary. The researcher also strategically chose a topic that students would most likely not have any background knowledge of, the man that invented the slinky.

Results from a one-way ANOVA comparing the participants' posttest scores between groups on the measures of general fluency, miscues, and comprehension showed significant difference between groups in general fluency with large effect size. A Tukey HSD post-hoc test revealed that the repeated reading with word overlap treatment had a higher gain in general fluency than the KWL control. No statistical differences were found between groups on measures of miscues or comprehension.

Paired samples *t*-tests revealed significant pretest to posttest gains on the measure of general fluency and comprehension for the repeated reading with word overlap and repeated reading without word overlap treatment groups. There were no significant pretest to posttest gains on the measure of miscues. Results showed no significant pretest to posttest gains on the measures of comprehension, miscues, and comprehension for the KWL control. Findings suggest that participants built general fluency more quickly when they were exposed to the domain specific vocabulary words most frequently.

The gains in comprehension reflect LaBerge and Samuels' (1974) automaticity theory. When readers can read words accurately and automatically, they have more cognitive resources to attend to the meaning of the text. The implicit and explicit comprehension questions for each chapter were structured similarly to the pretest and posttest. Through the three trials of each chapter, participants developed automatic word recognition and had more cognitive resources to attend to the meaning of the text, including how the text was structured. The comprehension

gains may be due to the participants repeated exposure to implicit and explicit questions of expository text and practice answering them.

Implications of Expository Text

Expository texts typically follow one of the five structures: cause and effect, compare and contrast, description, problem and solution, and sequence. This research study used a sequence text structure, which is most similar to narrative text. Another distinguishing characteristic of expository text is the greater extent of domain specific vocabulary (Kostewicz & Kubina, 2011). This research study used an expository text passage with a large amount of domain specific words, specifically social studies. However, there were several science domain specific words.

Expository texts are also more likely to have words that are interrelated thematically, which can be an advantage for teaching words in related groups (Kletzien & Dreher, 2017). The text had several words that would fall in this category including *engineer*/*engineering*, *invent*/*invention*/*inventor*, *nautical*/*naval*, *factories*/*manufacture*, and *communicate*/*locate*. By reading domain specific content words that were repeated in the repeated reading treatments, participants were able to create and store sight words more quickly than the participants that did participate in the repeated reading treatment. Once these new words entered in the participants' lexicon as sight words, they had more resources to place their focus on comprehension, which is a challenge with expository text.

For example, the word *ammunition* appeared in chapter two, which is about World War II and items that factories produced for the war effort. It appeared one time for the KWL control, three times for the repeated reading treatment, and six times for the repeated reading with word overlap treatment. The concept is challenging and without this word as a sight word, it is difficult to comprehend the meaning of the text.

Elley (1989) concluded that the best predictors of word learning are the frequency of the word in the text, depiction of the word in illustrations, and the redundancy of the word in the surrounding context. The repeated reading with word overlap treatment received a high frequency of the domain specific words in the text. The words also repeated in the surrounding context of the book throughout each chapter. If a word did not repeat the next chapter, a variation of the word did. For example, *engineer*/*engineering*, *invent*/*invention*/*inventor*. The repeated reading without word overlap treatment received a lower frequency of domain specific words in the text but read the words at least three times through the repeated reading method. They also experienced the word repetition in the surrounding context of the book throughout each chapter.

Implications of Fluency Instruction and Assessment

Fluency is typically measured in the classroom using reading rate. This score has contributed to fluency appearing to be more about speed than prosody and comprehension (Rasinski, 2012). For speed (reading rate) to increase, students must improve automatic word recognition. In addition to CWPM, fluency must also measure miscues and comprehension. Because expository text is more complex, it is important for questions to be explicit and implicit. The repeated reading with word overlap and repeated reading without word overlap treatments' gains in comprehension scores suggest that exposure to expository text questions during the repeated reading method provides student with much needed practice.

The *Qualitative Reading Inventory* provides a rubric for teachers to accurately score their students' comprehension (Leslie & Caldwell, 2011). With the correct repeated reading method and assessment backed by research, teachers can accurately measure fluency in the terms of LaBerge & Samuels' (1974) automaticity theory as automatic word recognition, which when well developed leads to speed, prosody, and comprehension.

Limitations

Limitations of this study are related to assessment, the student participants and the reading abilities of the participants.

Participants

In order for a participant to qualify for the study, he or she needed to be able to read between 80-100 CWPM on a level 3 reading passage of the Qualitative Reading Inventory and meet with the researcher on Zoom for seven days. Having to conduct this virtual study during the pandemic limited the number of participants that qualified for the study by having a smaller sample size of participants whose families wanted to participate and had the time and technology to do so. Another possible limitation is that the participants may have been too fluent. The 80-100 CWPM criteria may have eliminated students reading at 50-80 CWPM, who might have made bigger gains.

Materials

One factor that may have affected the results was the way the reading passages were displayed to students. Each passage was displayed to students on Google Slides. Some participants had more experience reading on a device (computer, tablet, smart phone) than others. The size of the screen on the device the participants used ranged from an iPhone to a desktop. Some participants did not use the same device each day.

Because the participants did not have access to typing on the Google Slides, participants in the KWL control were unable to write what they know, what they wanted to know, and what they learned. Instead, these responses were verbal. Many students are used to writing their answers in a KWL chart. Due to the virtual format, participants simply stated to the researcher what they know, what they want to know, and what they learned.

Assessment

The researcher used the Qualitative Reading Inventory to assess fluency on measures of general fluency, miscues, and comprehension but did not assess for prosody. LaBerge & Samuels' (1974) view of fluency in reference to the automaticity theory posits that if readers can read words accurately and automatically, they have more cognitive resources to attend to the meaning of the text. Under this view, speed and prosody are results of well-developed automatic word recognition and the four features of fluency-speed, accuracy, and prosody are interdependent. In future research, a rubric to measure prosody should be included to assess all features of fluency.

Recommendations for Further Research

This study explored the areas of fluency instruction using expository text with word overlap, text structure, and virtual learning. When the researcher created the intervention, they did not focus on Rasinski et al.'s (2016) suggestion that orthographic mapping can take the form of prefixes, suffixes, and Latin and Greek roots, which is common in expository text. What effect would using text that is focused on these features alone have on reading performance?

Typically decoding consists of readers translating the spellings of words in text into speech through the use of phonological and orthographic cues. For repeated reading with word overlap, the text consists of a high proportion of content words that are restricted to a students' current vowel knowledge to provide practice with specific decoding skills. An expository text using word overlap to include morphological word parts for orthographic mapping would be relevant to content area reading.

However, similar to learning to decode words with phonological and orthographic cues, readers would have to learn how to decode prefixes, suffixes, and Latin and Greek roots.

Teachers may need to teach students the meaning of prefixes, suffixes, and Latin and Greek roots before a repeated reading intervention is appropriate. Selecting expository texts by theme is a possible solution to identifying domain specific vocabulary words to overlap because expository texts are also more likely to have words that are interrelated thematically. Many of these words may share prefixes, suffixes, and Latin and Greek roots which would allow for a more authentic word study approach.

This text was chosen because it was written in a sequential order, which is closer to a narrative text structure. In light of this research and findings, what effect would using expository text with a different text structure, other than a sequential structure, have on the reading performance? The other four text structures, cause and effect, compare and contrast, description, and problem and solution are more difficult for readers to comprehend and may take students more than five days to read an expository book. Teachers may also need to include scaffolding of the text structure features after repeated reading trials. An important place to start would be finding appropriately leveled text that takes the qualitative components of the text, including the text structure organization, into consideration.

An interesting aspect of this study was that it was conducted completely through Zoom. This study shows that this form of reading instruction can be effective with virtual learning. It would be valuable to know if a repeated reading intervention through virtual learning that lasts longer than seven days is more effective.

The Zoom format was user friendly, but participants were not able to control the screen. This was especially problematic with the control group. There are more advanced programs that schools are using that allow students to be more interactive with the text and screen. This would allow for a more similar experience of being face-to-face in the same room. However, many

universities do not have access to these types of programs for preservice teachers to interact with students. Future research could investigate how this virtual format using Zoom effects how preservice teachers learn to teach reading.

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Appendix A

Informed Consent

AUBURN UNIVERSITY

The Auburn University Institutional Review Board has approved this Document for use from 08/21/2020 to ------ 20-211 EP 2008

COLLEGE OF EDUCATION

CURRICULUM & TEACHING

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS AN APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

PARENTAL PERMISSION/CHILD ASSENT
for a Research Study entitled
"Does Repeated Readings Using Expository Text and Word Overlap Lead to a Greater Gain in Fluency and Comprehension Than Non Word Overlap in Expository Text?"

Your son or daughter is invited to participate in a research study to explore if students reading expository text with overlapping words lead to a greater gain in fluency and comprehension compared to reading an expository text without overlapping words.

The study is being conducted by Chelsea Herndon, (doctoral student) under the direction of Dr. Bruce Murray, (associate professor) in the Auburn University Department of Curriculum and Teaching. Your son or daughter is invited to participate because he or she is a third grade student. Since he/she is age 18 or younger we must have your permission to include him/her in the study.

What will be involved if your son/daughter participates? If you decide to allow him/her to participate in this research study, he/she will be asked to meet with me through Zoom for 10-15 minutes a day for 7 days. You can access Zoom on a computer, tablet, or smart phone. During this time, your son/daughter will read passages aloud. All passages are rewritten in electronic form on Google Slides so your son/daughter can read the book on Zoom. I will she slides on the screen.

- On the first and last day, he/she will participate in the Qualitative Reading Inventory. It involves reading a leveled passage out loud while I take notes on the oral reading. This reading is followed by responding orally to additional comprehension prompts.
- On the second through sixth day, he/she will participate in a reading fluency intervention. He/she will orally read passages from an informational chapter book while I time and take notes on the oral reading. He/she will read one chapter a day.
- He/she will be asked to respond to questions to assess his/her comprehension of the text and his/her thoughts on how fluently he/she read the passage.

Your son's/daughter's total time commitment will be approximately and hour and 45 minutes.

Are there any risks or discomforts? There will be no threats of discomforts. Risks of breach of confidentiality will be minimized by using code names in the place of actual names. A code book will be locked in a filing cabinet in my home office. Data will be locked in a location different than the code books.

5040 HALEY CENTER
AUBURN, AL 36849-5212

TELEPHONE:
334-844-4434

FAX:
334-844-6789

www.auburn.edu

Parent/Guardian Initials_____
Participant Initials_____

Are there any benefits to your son/daughter or others? If he/she participates in this study, he/she can expect to increase his/her reading fluency. We/I cannot promise you that your son/daughter will receive any or all of the benefits described.

Will there be compensation for participating?
There will be no compensation for participation in the study.

Are there any costs?
There will be no cost for participation in the study.

If you (or your son/daughter) change your mind about his/her participation, he/she can be withdrawn from the study at any time. His/her participation is completely voluntary. If you choose to withdraw your son/daughter, his/her data can be withdrawn as long as it is identifiable. Your decision about whether or not to allow your son/daughter to participate or to stop participating will not jeopardize your or his/her future relations with Auburn University, the Department of Curriculum and Teaching , Chelsea Herndon, or Bruce Murray.

Your son's/daughter's privacy will be protected. Any information obtained in connection with this study will remain confidential. The data collected will be protected by the use of code names and will be locked in a filing cabinet or stored on an encrypted computer. Electronic files will be kept securely in the Auburn University Box at auburn.box.com. All Zoom meetings will be live, and no audio or video will be recorded. Information obtained through your participation may be published in professional journals and presented at professional meetings.

If you (or your son/daughter) have questions about this study, *please ask them now or* contact Chelsea Herndon at chh0021@auburn.edu or Bruce Murray at murraba@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your child's rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR SON OR DAUGHTER TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO ALLOW HIM OR HER TO PARTICIPATE. YOUR SON'S/DAUGHTER'S SIGNATURE INDICATES HIS/HER WILLINGNESS TO PARTICIPATE.

_____	_____	_____	_____
Participant's signature	Date	Investigator obtaining consent	Date
_____		_____	
Printed Name		Printed Name	
_____	_____		
Parent/Guardian Signature	Date		
Printed Name			

Parent/Guardian Initials_____
Participant Initials_____

Appendix B

Research Data Documentations

Chart 1. Running Record Data Collected for Each Participant

Chart 2. Order of Sessions for Participants

Chart 1

Running Record

Student:_____Date: _____Trial: 1

Chapter Title: Richard James: Rookie Inventor/Word Overlap

Word Count: 201 Total Errors:_____Total SC:_____

Accuracy: _____% WPM:_____CWPM:_____

Comprehension Questions
Explicit Q- Where was Richard James born?
A- *Philadelphia, Pennsylvania*
Implicit Q- What was the passage mainly about?
A-*The childhood of Richard James, the man who invented the slinky.*

Comprehension

Trial	Implicit	Explicit
1		

Self Evaluation

Trial				
1				

Text	E	SC
Richard James was born in Philadelphia, Pennsylvania, on January 1, 1944. He was six years old when the United States experienced an economic depression. During the economic depression, people used the little money they had for essential things, such as rent, food, and clothing. Like many families, the Jameses didn't have much money for non essential things such as toys. Yet Richard would grow up to invent the Slinky, one of the most famous toys ever! Richard was a curious boy. He was always interested in seeing how things worked. Using his great imagination, he entertained himself by building things. His toys were		

Chart 2

Day 1 Pretest-*Cats: Lions and Tigers in Your House*

Day 2	Chapter 1- *Richard James: Rookie Inventor*
Day 3	Chapter 2- *The War Effort*
Day 4	Chapter 3- *The Happy Accident*
Day 5	Chapter 4- *Slinky is Born*
Day 6	Chapter 5- *Slinky Hits the Stores*
Day 7	Posttest- *Where Do People Live?*

Appendix C

Materials for Study

Figure 1. Example of Word Overlap

Figure 2. Example of No Word Overlap

Figure 3. Fluency Tracker

Figure 4. Garfield Survey

Figure 1

Richard James was born in Philadelphia, Pennsylvania, on January 1, 1914. He was six years old when the United States experienced an economic depression. During the economic depression, people used the little money they had for essential things, such as rent, food, and clothing. Like many families, the Jameses didn't have much money for non essential things such as toys. Yet Richard would grow up to invent the Slinky, one of the most famous toys ever!

Richard was a curious boy. He was always interested in seeing how things worked. Using his great imagination, he entertained himself by building things. His toys were tools, wires, springs, glass, wood, and broken things he could fix. Sometimes he even sold his creations! Richard attended Westtown School, a Quaker boarding school in Philadelphia, Pennsylvania.

His time at the Quaker school helped him become a professional problem solver. When it was time to go to college, he knew exactly what he wanted to be.

Richard studied mechanical engineering at Pennsylvania State University. He graduated in 1939. As a mechanical engineer, people would pay him to build, fix, and invent things! Richard soon took a job as a naval engineer. He spent his days as a naval engineer designing and building parts for ships.

Figure 2

Richard James was born in Philadelphia, Pennsylvania, on January 1, 1914. He was six years old when the United States experienced an economic depression. People used the little money they had for essential things, such as rent, food, and clothing. Like many families, the Jameses had little money to buy toys. Yet Richard would grow up to invent the Slinky, one of the most famous toys ever!

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Richard studied mechanical engineering at Pennsylvania State University. He graduated in 1939. Now people would pay him to build, fix, and invent things! Richard soon took a job as a naval engineer. He spent his days designing and building parts for ships.

Figure 3

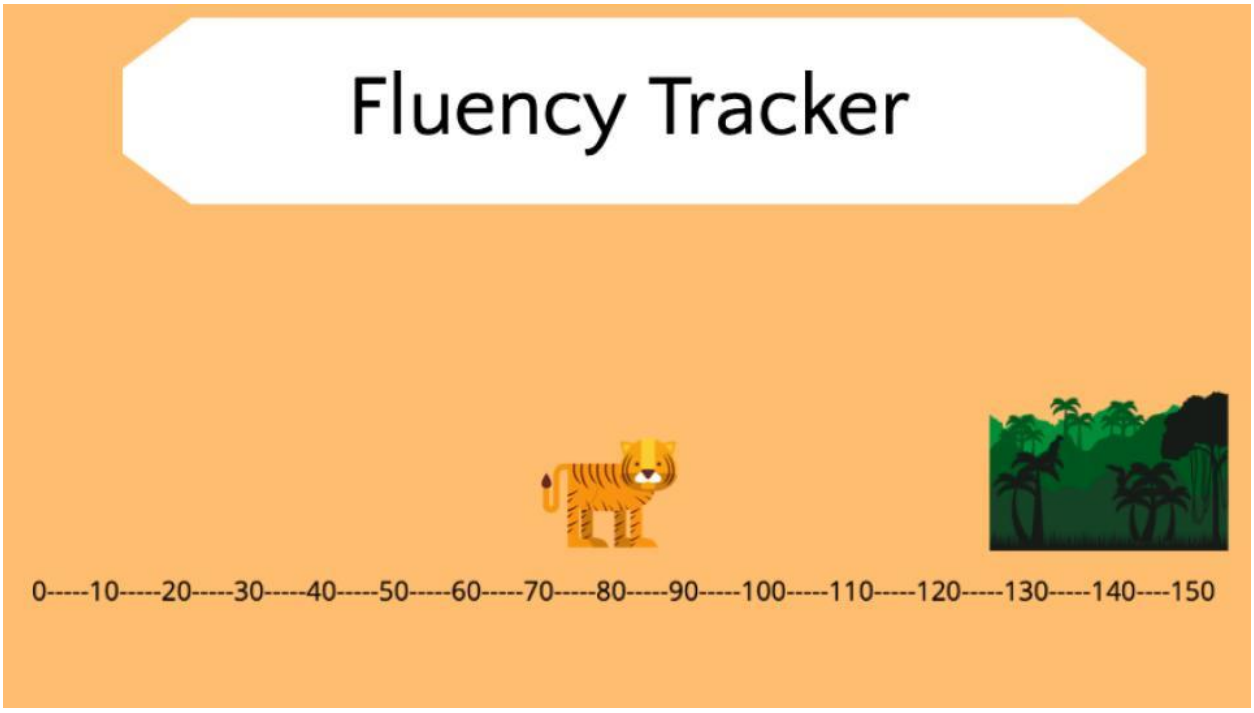

Figure 4