THE DEVELOPMENT OF FLUENCY AND COMPREHENSION LITERACY SKILLS
OF SECOND GRADE STUDENTS BY PROVIDING REGULAR USE OF THE
FLUENCY DEVELOPMENT LESSON

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Dissertation

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ABSTRACT

The purpose of this study was to examine the relationship between oral reading fluency and reading comprehension through the lens of developing readers in an actual classroom setting. In order to provide targeted fluency instruction, the study implemented the Fluency Development Lesson (FDL), a widely recognized and research-based instructional framework for fluency development, to analyze its impact on the reading comprehension of students in a second grade classroom.

The study was conducted in a suburban school district located in a Midwestern state. Twenty-two students between seven and nine years old took part in the study by participating in the FDL daily from September through January. The participant sample employed was a purposeful, nonprobability sample. The researcher was the classroom teacher.

The data were collected and analyzed using the 3-Minute Reading Assessment: Word Recognition, Fluency and Comprehension to generate the following scores: (a) word recognition accuracy; (b) automaticity in reading fluency; (c) multidimensional fluency skills including expression and volume, phrasing and intonation, smoothness, and pace; and (d) retelling comprehension. The organization of data for this study determined the statistical significance of change and the existence of a correlation between oral reading fluency and comprehension among the second grade students using the analysis of repeated measures and the Pearson’s $r$ statistical test.
Findings from the data suggested that with regular use of the FDL, significant statistical improvements were seen in retelling comprehension, words read correctly per minute, expression and volume, phrasing and intonation, smoothness, and pace in reading. In this study, the FDL proved to be an effective way of improving students’ reading performance in fluency and comprehension skills.

In conclusion, using the FDL in the classroom has the potential to provide positive outcomes for student reading fluency and ultimately in overall reading achievement. As educators attempt to find ways to achieve proficiency in reading, they will hopefully take into account the implications of this study and any past and future studies that demonstrate the positive benefits of using the FDL with their students to improve fluency and comprehension skills.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>xiv</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES</td>
<td>xv</td>
</tr>
</tbody>
</table>

## CHAPTER

### I. THE PROBLEM

- Introduction ........................................ 1
- Statement of the Problem ........................................ 2
- Background of the Study ........................................ 4
- Statement of the Purpose ........................................ 6
- Statement of Research Questions ........................................ 7
- Conceptual Framework ........................................ 8
- Data Collection ........................................ 9
- Assumptions ........................................ 10
- Definition of Terms ........................................ 11
- Summary ........................................ 14

### II. REVIEW OF THE LITERATURE

- Introduction ........................................ 16
- History of Fluency Instruction ........................................ 18
- Review of Influences on Fluency ........................................ 21
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automaticity Theory</td>
<td>21</td>
</tr>
<tr>
<td>Matthew Effect</td>
<td>22</td>
</tr>
<tr>
<td>Cognitive Psychology</td>
<td>23</td>
</tr>
<tr>
<td>Oral Versus Silent Reading</td>
<td>24</td>
</tr>
<tr>
<td>Recent Perspectives on Fluency</td>
<td>27</td>
</tr>
<tr>
<td>Key Elements of Fluency Development and Fluent Reading</td>
<td>31</td>
</tr>
<tr>
<td>Accuracy</td>
<td>31</td>
</tr>
<tr>
<td>Automaticity</td>
<td>32</td>
</tr>
<tr>
<td>Prosody</td>
<td>34</td>
</tr>
<tr>
<td>Review of Influences and Recent Perspectives in Comprehension</td>
<td>35</td>
</tr>
<tr>
<td>Theories Emerge</td>
<td>36</td>
</tr>
<tr>
<td>Comprehensive Reading Instruction</td>
<td>42</td>
</tr>
<tr>
<td>Current Perspectives</td>
<td>45</td>
</tr>
<tr>
<td>The Link Between Fluency and Comprehension</td>
<td>46</td>
</tr>
<tr>
<td>Developing Oral Reading Fluency: Instruction and Practice</td>
<td>49</td>
</tr>
<tr>
<td>The Fluency Development Lesson</td>
<td>53</td>
</tr>
<tr>
<td>Conducting the FDL</td>
<td>54</td>
</tr>
<tr>
<td>Studies on the Fluency Development Lesson</td>
<td>56</td>
</tr>
<tr>
<td>Current Methods of Assessing Fluency and Comprehension Together</td>
<td>57</td>
</tr>
<tr>
<td>DIBELS</td>
<td>57</td>
</tr>
<tr>
<td>3-Minute Reading Assessment</td>
<td>58</td>
</tr>
<tr>
<td>Miscue Analysis</td>
<td>60</td>
</tr>
<tr>
<td>Limitations of Current Fluency Assessments</td>
<td>62</td>
</tr>
</tbody>
</table>
Descriptive Statistics Multidimensional Fluency Skills: Pace .........................116
Sphericity for Multidimensional Fluency Skills: Pace .................................117
Growth Pattern for Multidimensional Fluency Skill: Pace ..........................117
Summary for Repeated Measure ...................................................................120
Pearson r Correlation Results .....................................................................121
Correlation for Word Recognition Accuracy and Retelling Comprehension .................................................................122
Correlation for Words Correct per Minute and Retelling Comprehension...124
Summary .....................................................................................................126

V. CONCLUSIONS AND IMPLICATIONS .........................................................128
Summary of the Study ..................................................................................128
Results of the Study ....................................................................................132
Repeated Measure Results for Retelling Comprehension ...........................132
Repeated Measure Results for Word Recognition Accuracy and Words Correct per Minute .................................................133
Repeated Measure Results for Multidimensional Skills: Expression and Volume, Phrasing and Volume, Smoothness, and Pace .........................134
Pearson r Correlation Results for Word Recognition Accuracy and Retelling Comprehension .................................................................135
Pearson r Correlation Results for Word Correct per Minute and Retelling Comprehension .................................................................135
Conclusions ...............................................................................................135
Implications ...............................................................................................141
Teachers ....................................................................................................141
Administrators ..........................................................................................143
Curriculum Directors ................................................................................144

xii
Teacher Educators ........................................................................................................ 146
Publishing Companies ............................................................................................... 147
Implications for Future Research ............................................................................... 148
Diverse Population ...................................................................................................... 148
Varied Texts ................................................................................................................ 149
True Experimental Design ......................................................................................... 150
Qualitative Case Study Design ................................................................................... 150
Summary ...................................................................................................................... 154
REFERENCES ............................................................................................................. 156
APPENDICES ............................................................................................................. 168
  APPENDIX A. IRB APPROVAL LETTER ................................................................ 169
  APPENDIX B. CONSENT FORM FOR OFF-CAMPUS SITE ................................ 170
  APPENDIX C. ADMINISTRATION AND SCORING AIDS .................................... 171
  APPENDIX D. SCRIPT OF VERBAL INSTRUCTIONS .......................................... 172
  APPENDIX E. CLASS RECORD SHEET ................................................................. 173
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Research Agenda</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>Descriptive Statistics for Comprehension, Word Recognition Accuracy, and</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Words Correct per Minute</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Tests of Sphericity</td>
<td>101</td>
</tr>
<tr>
<td>4</td>
<td>Descriptive Statistics for Multidimensional Fluency Skills: Expression and</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Volume, Phrasing and Intonation, Smoothness, and Pace</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Tests of Sphericity for Multidimensional Fluency Skills</td>
<td>109</td>
</tr>
<tr>
<td>6</td>
<td>Correlation Chart Between Word Recognition Accuracy and Retelling</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>Comprehension</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Correlation Chart for Fluency Automaticity (WCPM) and Retelling</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>Comprehension</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Linear graph for retelling comprehension</td>
<td>102</td>
</tr>
<tr>
<td>2</td>
<td>Linear graph for words per correct per minute</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Linear graph for expression and volume</td>
<td>110</td>
</tr>
<tr>
<td>4</td>
<td>Linear graph for phrasing and intonation</td>
<td>113</td>
</tr>
<tr>
<td>5</td>
<td>Linear graph for smoothness</td>
<td>115</td>
</tr>
<tr>
<td>6</td>
<td>Linear graph for pace</td>
<td>118</td>
</tr>
</tbody>
</table>
CHAPTER I

THE PROBLEM

Introduction

Federal legislation in recent years has had a profound impact on education in the United States. Because poor reading performance in students has become a national concern, federal legislation has been targeted specifically at reading instruction. According to the National Assessment of Educational Progress (NAEP, 2007), even though reading skills are improving at both the fourth and eighth-grade levels, only about one-third of all students read at a level that is considered proficient for their academic grade. In an effort to improve students’ reading scores on state and national reading achievement tests, federal legislation has mandated that teachers utilize teaching strategies and practices that, according to the Report of the National Reading Panel (NRP, 2000), will ensure student success in reading.

Learning to read is a complicated process involving cognitive and metacognitive skills (Flavell, 1977; Keene & Zimmerman, 1997). Successful reading requires the reader to integrate these skills in appropriate ways. To this end, the National Reading Panel (2000) debated, discussed, and eventually settled on five basic sub-skills they considered as having an impact on reading development: phonemic awareness, phonics, fluency, vocabulary, and comprehension. In choosing five reading sub-skills, the Panel researched approximately 100,000 studies to determine which skills have a central
importance in teaching students to read. A student’s inability to perform any of these reading skills might lead to difficulties with the entire reading process. Conversely, the ability to combine all of these necessary skills to obtain meaning from text can promote the cognitive and metacognitive skills for reading success.

Prior to the National Reading Panel (2000) report, fluency, reported on by the NRP, was seen as the “neglected reading goal” (Allington, 1983, p. 556). The term oral reading fluency (ORF) is the oral translation of text with speed and accuracy (Fuchs, Fuchs, Hosp, & Jenkins, 2001). Specifically, ORF involves reading with an appropriate rate, in meaningful phrases, accurately, with expression and comprehension (Rasinski & Hammon, 2010; Rasinski & Padak, 2005). Yet, since the National Reading Panel report was published, fluency instruction has been brought to the forefront in elementary schools. Furthermore, some scholars have argued that oral reading fluency may serve as one of the best indicators of basic reading competency (Rasinski, 2003, Shanahan, 2006), as a link has also been established between student performances in oral reading and reading proficiency (Kuhn & Rasinski, 2007). Therefore, oral reading fluency has continued to gain attention in the past decade.

Statement of the Problem

To date, the exact role of fluency, or more specifically how much a role oral reading fluency may play in reading comprehension, needs further investigation even though it has been previously researched. It is still unclear whether improvements in fluency result in improvements in comprehension, whether improvements in comprehension result in improvements in fluency, or whether there is a reciprocal relationship between the two that improves both aspects in developing readers (Kuhn &
Similarly, there is as yet no deep understanding about exactly how oral reading fluency contributes to reading comprehension development, and to what extent it may or may not help ensure success in young readers. Consequently, research is needed in this area to help educators understand how oral reading fluency contributes to students’ overall reading development.

Since for many years oral reading fluency had not been explicitly taught in most elementary classrooms (Allington, 2006; Fuchs et al., 2001), some teachers are still unaware of what fluency means and how it should be taught. Teacher education programs, classroom textbooks, and teacher manuals traditionally provided little support for the promotion of fluency instruction. In addition, fluency may not have been valued because silent reading was thought to give the reader an advantage in comprehension (Rasinski, 2003; Samuels, 2006). Again, it was the National Reading Panel’s report in April of 2000 that helped elevate oral reading practice over silent reading practice as the Panel did not find research-based evidence that silent reading had a positive impact on a student’s fluency acquisition. Ruetzel (2006) also noted that fluency practice is most effective when it is oral reading versus silent. Therefore, reading fluency is best achieved through oral reading (Rasinski, 2003).

Although much has been written about oral reading fluency and about reading comprehension individually, less has been written about the relationship between fluency and comprehension, especially with young learners in actual classroom settings. This may be due in part to outdated and imprecise definitions of fluency as “nothing more than reading fast or with good oral expression” (Rasinski, Blachowicz, & Lems, 2006, p. 1). However, since the 21st century, “reading fluency has taken its place with phonemic
awareness, word decoding, vocabulary, and comprehension as critical components of
effective reading instruction” (Rasinski et al., 2006, p. 1).

Today, ORF instruction is no longer overlooked. This resurgence of interest in
fostering fluency has led to a need for improved classroom fluency practices as well as
in-depth investigation of the relationship between fluency and reading comprehension
(Rasinski et al., 2006). Since ORF is one of five components of reading (NRP, 2000) and
therefore viewed as an important part of the reading process, it needs to be well-taught to
developing readers. Moreover, even though there is a recognized reciprocal relationship
between oral reading fluency and comprehension, this relationship is a complex
interaction that is not clearly understood and needs more investigation and research
(Kuhn & Rasinski, 2007). As educators continue to learn more about the impact of oral
reading fluency on students’ comprehension development, their objective is to ensure that
children have the reading skills necessary for success.

**Background of the Study**

Historical developments in American education have significantly transformed
the manner in which students are educated. According to Rasinski (2003), there is a rich
tradition of oral reading in both classrooms and homes in the United States. Before the
advent of technology (e.g., radio and television), reading was the primary way families
shared information and entertained themselves. Usually only one person in the family
could read and books were scarce. Therefore, the books needed to be read aloud for all
family members to benefit. As a result, because oral reading was so prevalent in the
home, it was not surprising that oral reading then became a focus of classroom
instruction. American reading education in the 19th century was based solely on oral
reading. This remained true from the early days of the United States until the start of the 20th century (Rasinski, 2003).

At the beginning of the 20th century, however, the focus on oral reading in reading instruction began to diminish. Huey (1908) observed that silent reading was predominant in everyday life, while oral reading occurred only in schools. With the development of the theory of “automaticity,” by Samuels (2006), which posits the importance of a reader’s ability to decode words with ease, speed and accuracy, oral reading as a classroom practice continued to decline.

In 1974, LaBerge and Samuels underscored the consequences of poor automaticity. They observed:

If the student was not automatic at word recognition, the important job of reading had to be done in two stages. First, the student had to attend to the task of decoding the words in the text. Because the word recognition task was not automatic, all of the available cognitive resources were used in the decoding task. Second, the student had to switch attention to comprehension. (p. 15)

These experts warned that comprehension could only occur if readers had to exert little cognitive effort in decoding words. With more oral reading practice, they argued, even a struggling reader could become more automatic in decoding words. Their assumption was that comprehension would naturally follow. Despite the popularity of Samuels’ automaticity theory, silent reading began to replace oral reading as “the preferred mode of reading instruction” (Rasinski, 2003, p. 15). Silent reading remained the preferred way to teach reading comprehension until the publication of the National Reading Panel report:

The National Reading Panel (2000) recognized fluency as one of the primary components of reading and concluded that oral reading fluency is an important part of the reading process. Consequently, the NRP argued that developing readers needed explicit instruction in fluency. Recently, many teachers have
recognized the benefits of accentuating oral reading as a helpful tool in developing competent, comprehensive readers. (Nichols, Rupley, & Rasinski, 2009)

**Statement of the Purpose**

Reading comprehension is a reader’s ability to gain meaning from text (Harris & Hodges, 1995). Research has indicated that there is a positive relationship between comprehension and fluency. Samuels (2006) believed this is largely because a fluent reader does not waste energy in decoding words and can therefore comprehend texts more easily. Consequently, oral reading fluency can provide critical support for reading comprehension. Kuhn and Rasinski (2007) believed that “fluency can make a difference in a student’s success as a reader” (p. 204). Moreover, as comprehension increases, a student’s oral reading fluency is also improved (Fuchs et al., 2001).

Even though a recognized relationship does exist between oral reading fluency and comprehension, few studies have provided in-depth analysis of the fluency and comprehension relationship as it evolves among young readers receiving targeted fluency instruction in a primary-grade classroom over time. The purpose of this study, then, was to examine the reciprocal relationship between oral reading fluency and reading comprehension through the lens of developing readers in an actual classroom setting.

In order to provide targeted fluency instruction, this study used the Fluency Development Lesson (Rasinski, Padak, Linek, & Sturtevant, 1994) a widely recognized and research-based instructional framework for fluency development to analyze its impact on the reading comprehension of students in a second-grade classroom. The Fluency Development Lesson (FDL) incorporates instructional skills and strategies that have been proven effective at fostering fluency development (Reutzel, 2006). Moreover,
as it analyzes the impact of the Fluency Development Lesson on the oral reading fluency and reading comprehension of these second grade students, this study also looked closely and described the relationship that emerges between reading fluency and comprehension. Results of this study therefore provided a description and statistical analysis of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students.

Current research suggests that fluency and comprehension need to be taught simultaneously so this reciprocal relationship becomes automatic to readers (Applegate, Applegate, & Modla, 2009). By examining the relationship between oral reading fluency and reading comprehension through in depth analysis of the data generated by the Fluency Development Lesson, this study could provide teachers and educators with information that would contribute to students’ success as readers. Furthermore, continuing to teach fluency and comprehension skills together without a deep understanding of how they impact each other offers little evidence of the effectiveness of this instructional approach. A better understanding of this relationship could, thus, assist educators in providing appropriate instruction in fighting illiteracy.

**Statement of Research Questions**

The following questions guided this quantitative study.

1. When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?
2. When provided daily use of The Fluency Development Lesson in a second grade classroom, do fluency skills change as measured by words correct per minute rates and word recognition accuracy?

3. When provided daily use of The Fluency Development Lesson in a second grade classroom, which multidimensional fluency skills develop as measured by expression and volume, phrasing and intonation, smoothness, and pace?

4. Is there a correlation between the dimensions of oral reading fluency and the dimensions of retelling comprehension?

**Conceptual Framework**

This research is situated in the constructivist paradigm (Vygotsky, 1978). K. S. Goodman (2003a) applied it to reading when his research stated that reading is a constructive process of meaning making. He contended that during the reading process, readers construct or make meaning from the words on a page. Therefore, developing a comprehensive literacy approach to teaching reading is a critical component of a complete reading program. The basis of a comprehensive literacy approach is that “first and foremost, reading means constructing meaning and using everything you know in order to do it” (Weaver, 2002, p. 3). In addition, words and skills should not be taught in isolation but in the context of texts. The process of teaching reading should be comprehensive, engaging students in real reading and writing experiences through which they develop effective strategies that use semantic, syntactic and graphophonic information to determine the meaning of a passage (Weaver, 2002). From this theoretical framework the reading instruction will focus on teaching reading as a whole; the parts are then taught as they relate to the whole (Weaver, 2002). This means that when teaching
oral reading in a comprehensive reading program, reading fluency is considered much more than reading quickly. “Reading fluency instruction must be focused on the making of meaning” (Rasinski & Hamman, 2010, para. 13).

Data Collection

In quantitative research, evidence can come from a variety of sources. To gain an understanding of how comprehension literacy skills develop by providing regular use of the Fluency Development Lesson (FDL) in a second grade classroom, evidence was collected from many sources throughout the semester. The following data collection sources were employed in the study: assessments including the results of the 3 Minute Reading Assessments: Fluency, Word Recognition, and Comprehension (3MRA, Rasinski & Padak, 2005).

The teacher-researcher was a participant in gathering data-as students engaged in oral reading fluency tasks. Rossman and Rallis (2003) explained this type of “work will entail long-term immersion in an intact cultural group” (p. 95). Merriam (2009) also defined this method as one in which the investigator is an active member of the group. The researcher is “involved in the setting’s central activities, assuming responsibilities that advance the group” (Merriam, 2009, p. 124). According to Merriam (2009) and Gall et al. (2007), the researcher interacts with the individuals in the study so as to establish significance within the group.

Data were collected by the researcher on each individual student using the variables, oral reading fluency and retelling comprehension. The primary measure used in the study was the 3MRA, which was administered in September, November, and January. This measure was analyzed to generate the following scores: (a) word
recognition accuracy (decoding), (b) automaticity in reading fluency, (c) expression in reading fluency, and (d) retelling comprehension.

**Assumptions**

1. Reading is a sociopsycholinguistic process of meaning-making that results from the transaction of a reader with a text in a particular sociocultural context (K. S. Goodman, 1969; Rosenblatt, 1978, 1989; Weaver, 2002). The successful reader employs a variety of strategies to predict and confirm potential meanings, with comprehension as the ultimate result (Weaver, 2002). Since each reader constructs a somewhat unique meaning from the words on a page, a valid interpretation of the content is evidence of comprehension (K. S. Goodman, 1992; Weaver, 2002).

2. Reading is much more than accurate or rapid word identification. “Reading fluency instruction must be focused on the making of meaning” (Rasinski & Hamman, 2010, para. 13).

3. There is a significant relationship between oral reading fluency and reading comprehension (Applegate et al., 2009; Hudson, Lane, & Pullen, 2005; LaBerge & Samuels, 1974). The exact role of fluency or more specifically, how much a role oral reading fluency may play in reading comprehension has not been as widely researched. It is therefore as yet unclear whether improvements in fluency result in improvements in comprehension, whether improvements in comprehension result in improvements in fluency, or whether there is a reciprocal relationship between the two that improves both aspects in developing readers (Kuhn & Rasinski, 2007).
4. Oral reading fluency is an important part of a comprehensive reading program and developing readers should receive explicit fluency instruction (National Reading Panel, 2000; Rasinski, 2003; Shanahan, 2006).

5. Metacognitive awareness is a significant factor in the meaning-making process. Students who are metacognitively aware can identify, choose, and successfully apply pertinent strategies to support their own learning (Flavell, 1977). An important assumption of this study is that even young students have the ability to reflect on their own learning (Keene & Zimmerman, 1997). The theory of metacognition (Flavell, 1977) suggests that readers are active, self-guided, and independent in strategies used. When proficient readers are metacognitive, they think about their own thinking during reading.

Definition of Terms

Assessment – Assessments are instructional materials for the gathering or collecting of data in order to look at the strengths and weaknesses of students in a particular area. The goal of assessment is to provide salient information for instructional judgments that are made after the data is collected (Harris & Hodges, 1995).

Automaticity – Automaticity can be defined as processing information in a fluent way with little attention or effort (Harris & Hodges, 1995). It is quickly identifying words, such as sight words, in and out of the context of sentences (Hudson et al., 2005).

Comprehension – Comprehension is the process in which the reader constructs meaning from a text by drawing on a range of schemata (e.g., linguistic; sociocultural). This aspect of reading is the construction of meaning from both written and spoken words through an exchange of ideas between the reader and the message (Harris & Hodges,
According to Keene and Zimmerman (1997), comprehension is a constructive and strategic process in which the reader uses predicting, monitoring, inferring, and questioning to make sense of print before, during, and after reading.

**Correlation** – Correlational research examines and analyzes the relationship between two or more variables where a statistical coefficient is generated expressing the extent of the relationship (Harris & Hodges, 1995).

**Fluency** – According to Rasinski and Padak (2001), “fluency refers to the reader’s ability to read accurately, quickly, in appropriate syntactic phrases or text chunks, and above all, with meaningful and appropriate expression” (p. 162).

**Metacognition** – Metacognition is a person’s knowledge and awareness of his or her own mental processes. In this study, a child who is metacognitively aware can effectively select, monitor, and direct his own learning (Harris & Hodges, 1995).

**Miscues** – Miscues are referred to as the unexpected responses of a reader as he or she reads aloud (K. S. Goodman, 1969). In this study, these miscues, or misread words, will give insight into the student’s reading process by looking at semantic, syntactic, or grapho/phonemic nature of the miscue (Pearson, 1978).

**Oral Reading Fluency** – The act of reading aloud which is supported by the critical link from word recognition to comprehension (Rasinski & Hamman, 2010). It involves reading with an appropriate rate (automaticity), in meaningful phrases, accurately, with prosody (expression), and comprehension (Rasinski & Hamman, 2010; Rasinski & Padak, 2005).

**Participant Observers** – Merriam (2009) defined participant observation as a method where the investigator him or herself is an active member of the group being
observed. The researcher is “involved in the setting’s central activities, assuming responsibilities for the advancement of the group” (Merriam, 2009, p. 124).

**Prosody** – Prosody is the ability to read with appropriate expression and with reading that sounds like speaking (Hudson et al., 2005). A reader who is capable of incorporating prosodic features (e.g., correct phrasing, pitch, stress, and tone) demonstrates behaviors that suggest he or she understands the meaning of the text (Mathson, Allington, & Solic, 2006).

**Quantitative Research** – Harris and Hodges (1995) referred to quantitative research as “research that measures and describes in numerical terms” (p. 200).

**Quasi-experimental Design** – Campbell and Stanley (1963) defined quasi-experiments as experiments that lack random assignment. The design limits the generalizability of findings because the design does not control all but a single variable (Harris & Hodges, 1995).

**Reading as a Sociopsycholinguistic Process** – The reading process is “what happens when a person processes text to obtain meaning” (Harris & Hodges, 1995). Reading as a sociopsycholinguistic process is a complex process involving the mind of the reader, the language of the text, and the social and situational factors that influence how a person reads and what that person understands. The sociopsycholinguistic model (K. S. Goodman, 1969, 2003e) emphasized the influence of an individual’s schemata in the act of making meaning through simultaneous use of the semantic, syntactic and graphophonic cues available in a text.
Repeated Measure Design – In a repeated measure analysis of variance, participants are tested more than once using one factor. Then the process is repeated at more than one point in time on the same factor (Salkind, 2008).

Retelling – According to Harris and Hodges (1995), a retelling measures comprehension and gives insight into a reader’s ability to “interact with, interpret, and draw conclusions from the text” as a story is read orally and events are described (p. 220).

Schema Theory – A schema is “an organized chunk of knowledge or experience” (Weaver, 2002, p. 16). Schema theories (Bartlett, 1932; Rumelhart, 1980) suggest that when pertinent schemata are activated, readers’ comprehension of text is generally better. According to Keene and Zimmerman (1997), schema theory activating, supporting or even constructing appropriate schemata prior to reading can occur by building background knowledge or by helping a reader recalling information relevant to what will be read. Such an instructional approach gives students the direction needed to enhance comprehension.

Word Accuracy – Accuracy in word reading is the ability to recognize and decode words correctly, instantly, and effortlessly (Kuhn & Rasinski, 2007).

Summary

Oral reading fluency instruction is an important part of a comprehensive reading program leading to comprehension; the ultimate goal of reading. Understanding oral reading fluency by knowing what strategies can be used to teach fluency to developing readers is essential. Moreover, assessing fluency instruction is necessary to insure that students receive quality instruction.
While it is generally acknowledged that the relationship between oral reading fluency and reading comprehension is significant, more research with young students in real classroom settings probed this relationship. Currently, there is a renewed interest in oral reading fluency and how it influences the comprehension development of developing readers. Understanding how oral reading fluency contributes to reading comprehension can provide educators with information that could lead to increased student reading achievement. Research in this area may help educators to understand how oral reading fluency contributes to students’ overall reading development.

The relationship between oral reading fluency and reading comprehension is a complex interaction that may require additional investigation and research. The Fluency Development Lesson, created by Rasinski et al. (1994) incorporates effective instructional skills and strategies that have been shown to faster fluency development. Thus, this study was designed to describe how the comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). In addition, this study sought to investigate what specific aspects of fluency have the strongest impact on comprehension and if there are factors of fluency that have not been identified as having an influence on comprehension. A better understanding of the relationship between oral reading fluency and reading comprehension could assist educators in providing the instruction needed to combat illiteracy.
CHAPTER II
REVIEW OF THE LITERATURE

The purpose of this study was to describe how the comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). Specifically, the researcher looked at how direct, explicit oral reading fluency instruction using the Fluency Development Lesson (FDL) would develop the comprehension skills of second grade readers and deepen our understanding of this relationship. This exploration described the use of the FDL in a second grade classroom as well as the assessment of oral reading fluency (ORF) and reading comprehension using the 3-Minute Reading Assessment. A review of the literature in this chapter on the following topics provided the conceptual framework: (a) history of fluency instruction, (b) review of influences on fluency, (c) recent perspectives on fluency, (d) key elements of fluency development and fluent reading, (e) review of influences and recent perspectives on comprehension, (f) the link between fluency and comprehension, (g) developing oral reading fluency: instruction and practice, (h) current methods of assessing fluency and comprehension, and (i) limitations of current fluency assessments.

Introduction

Federal legislation in recent years has had a profound impact on education in the United States. Because poor reading performance in students has become a national
concern, federal legislation has been targeted specifically at reading instruction. Reading skills are improving at both the fourth and eighth-grade levels (National Assessment of Educational Progress, 2007), even though only about one-third of all students read at a level that is considered proficient for their academic grade. More recent NAEP findings (2013) report slight fourth grade reading improvements (1% from 2011 to 2013) but these modest improvements are still well behind top performing nations. According to the Report of the National Reading Panel (NRP, 2000), a committee formed by Congress to develop and adopt a set of methodological reading standards in an effort to improve students’ reading scores on state and national reading achievement tests, federal legislation has mandated that teachers utilize teaching strategies and practices that can ensure student success in reading.

After debating, discussing, and researching approximately 100,000 studies to determine which skills have a central importance in teaching students to read, the NRP (2000) identified five basic subskills they considered as having an impact on reading development: phonemic awareness, phonics, fluency, vocabulary, and comprehension. A student’s inability to perform any of these reading skills might lead to difficulties with the entire reading process. Conversely, a solid background in each of these subskills can lead to reading success.

Fluency was seen by some as the “neglected reading goal” (Allington, 1983, p. 556) prior to the National Reading Panel report in 2000. Since the NRP report was published, however, fluency instruction has been brought to the forefront in elementary schools. According to Rasinski et al. (2006), “Since the beginning of the 21st century, reading fluency has taken its place with phonemic awareness, word decoding,
vocabulary, and comprehension as critical components of effective reading instruction” (p. 1). A link has also been established between student performances in oral reading and reading proficiency (Kuhn & Rasinski, 2007). Furthermore, some scholars argue that oral reading fluency may serve as one of the best indicators of basic reading competency (Rasinski, 2003, Shanahan, 2006). Consequently, fluency continued to gain attention in the past decade as never before.

One of the reasons fluency might have been given little attention in the past was due to its various and sometimes confusing definitions. According to Rasinski et al. (2006), many educators considered fluency as “nothing more than reading fast or with good oral expression” (p. 1). However, recognizing words and reading at an acceptable pace is only one part of becoming a fluent reader. Rasinski and Padak (2001) stated, “Fluency refers to the reader’s ability to read accurately, quickly, in appropriate syntactic phrases or text chunks, and above all, with meaningful and appropriate expression” (p. 162). Accuracy in word recognition, proper oral expression, and appropriate reading speed are all indicators of fluency. Once fluency was shown to be a precursor for good comprehension (LaBerge & Samuels, 1974; Stanovich, 1986), perceptions about fluency began to change. Researchers began to show that oral reading fluency was a precondition for successful reading comprehension. Therefore, the most important characteristic of a fluent reader is the ability to decode and to comprehend text at the same time (Rasinski et al., 2012; Samuels, 2006).

**History of Fluency Instruction**

Ancient perspectives and cultural practices are important because they establish the background for oral reading practices in the United States today and point to the
relationship among religion, history, and reading practices. There has been a rich history of oral reading both in classrooms and homes. Educators and leaders in education have observed best practices in oral reading for centuries. Throughout history, oral reading was the predominant way of doing most tasks.

In Biblical times, oral reading was the dominant way to read because it ensured that the sacred word was interpreted correctly. According to Pearson and Goodin (2010), before the emergence of writing conventions, reading aloud was the best practice of scribes reading scripture. Reading aloud also allowed for the sharing of scarce texts in ancient and medieval times. Early oral reading instruction was closely connected to religion and morality as noted in early texts copied by monks. Despite the advances in technologies of writing shortly thereafter, oral reading remained the norm in society and in schools (Goodin & Pearson, 2010). The written word was to be rehearsed and spoken aloud to bring an author’s words to life.

For most of the last two centuries, oral reading fluency, as an important component of literacy instruction, has baffled educators and been somewhat of an enigma in American classrooms (Rasinski, 2003). Huey (1908) wrote one of the first descriptions of how students become fluent readers in *The Psychology and Pedagogy of Reading*. Huey described a beginning reader as one who paid close attention to word recognition and a fluent reader as one who reads words automatically with speed and accuracy. Huey’s work was the precursor to what would later become the automaticity theory of word recognition. Until the 20th century, though, instructional materials failed to include guidance on teaching fluency.
From Colonial America to the early 20th century, oral reading was prevalent in classrooms across America (Rasinski, 2003; Samuels, 2012). At that time, reading aloud in the home was the main way families entertained each other and received and shared information. Consequently, its prominence in daily life led to oral reading’s focus in classroom instruction. By the latter half of the 19th century, a teacher’s main way of delivering instruction was by reading orally and a student’s response was mainly through oral recitation.

Despite these contributions in the area of fluency, Samuels (2012) explained that historically fluency failed to develop as an important research topic and to become an important part of the reading curriculum from the 1900s until recently. One reason may be that other reading issues took priority over fluency. According to Samuels (2012), “The major psychological paradigm from the 1900s until the late 1950s was behaviorism” (p. 8). Researchers limited themselves to the study of word recognition and test development during that time period. In addition, some researchers noted that oral reading was a practice done only during school while silent reading was predominantly practiced in everyday life. Consequently, oral reading as the primary form of reading instruction began to diminish, while silent reading began to replace oral reading as the preferred mode of reading instruction (Rasinski, 2003). At this time, the development of nonverbal methods of reading eventually demonstrated the extent to which oral reading was considered unnecessary and perhaps even detrimental to reading success. When the field shifted from behaviorism to cognitive psychology in the 1970s, fluency became an area of serious study.
Review of Influences on Fluency

The state of reading fluency in the United States today began with cognitive insights into reading. Developments of the theory of automaticity and cognitive psychology helped to elevate reading fluency to the important status it enjoys today. These developments not only emphasized that reading fluency should be an important goal in the reading curriculum but led to an opportunity to develop reading practices that support oral reading fluency.

Automaticity Theory

Most discussions of fluency trace their modern foundational theories to LaBerge and Samuels (1974) and their automaticity theory. The theory of automaticity attempts to explain how people become skilled at performing difficult tasks (Samuels, 2006). This particular theory, as it applies to reading, focuses on the development of automaticity in recognition of words. Reading for meaning, when students cannot automatically decode words, has to be done in two stages. First, students must use all their cognitive ability to be able to decode the words in a text. Second, the readers must then turn their attention to comprehension of the text. LaBerge and Samuels (1974) argued that these readers can only attend to one thing at a time. Comprehension requires the complete attention of the reader. When decoding words drains the reader of the attention needed for comprehension, that comprehension breaks down.

With enough time and practice reading books at their independent reading levels, students should become automatic in decoding words. They are then able to accomplish decoding and comprehension skills together. “Therefore, automaticity of decoding – a
critical component of fluency – is essential for high levels of reading achievement” (Pikulski & Chard, 2005, p. 511).

The automaticity theory led to the use of repeated readings as an important technique to use in the teaching of fluency (Samuels, 2006, 2012). Readers reread a passage a number of times until they can read the passage with speed and accuracy. In a study on repeated readings, Chomsky (1978) conducted repeated reading fluency work on children’s stories. Struggling readers listened to the stories numerous times while following along with the words. They listened to the tapes until they could read the books independently. Similarly, O’Shea, Sindelar, and O’Shea (1985) found four rereadings of the same text as the most efficient number of times to reread the passage and provide the highest gain in words per minute. As a result of rereading, poor readers began to sound like good readers. These works concluded that repeated readings were an effective method for improving fluency and comprehension across grade levels and led to further research on the topic.

**Matthew Effect**

Another contribution to the importance of reading fluency came as a result of the work of Stanovich (1986) as he looked at the relationship between the amount of reading done by a reader and their reading fluency. Readers who lacked fluency found reading difficult and read much less than readers who read fluently. Consequently, nonfluent readers avoided reading and fell behind those who read more. Due to this limited reading practice, nonfluent students were unable to make gains in their reading abilities and therefore became “poorer” readers than their classmates who read more. The belief that students who read more often become better readers is called the Matthew Effect
The Matthew effect described the “rich get richer and poor get poorer effects that are embedded in the educational process” (Stanovich, 2003, p. 33). This theory was based on the Biblical account in the book of Matthew which described a servant becoming spiritually rich or poor. The classroom analogy described a student becoming academically rich or poor.

Stanovich (1986) explored Matthew effects in the area of reading development and achievement. He looked at how individual differences in early reading skills and concepts were magnified by the different educational experiences of children who vary in early reading development. Children who enter school with little phonological awareness cannot easily code the alphabet and eventually have difficulty recognizing words. When word recognition is too demanding, there are too few mental resources left to comprehend text. This initial lack of preparedness can adversely affect success in school. These students are placed at a disadvantage regarding their educational achievements because they enter school unprepared.

Conversely, children who are effective in decoding words can concentrate on the meaning of texts. They enjoy reading, so they read more. This increase in reading practice helps them further develop reading skills. These students tend to achieve more academically. Consequently, the gap in achievement continues to increase between these students.

Cognitive Psychology

Samuels (2006) stated, “It was only with the birth of a new paradigm, cognitive psychology, that the work on fluency emerged” (p. 13). Cognitive psychologists, along with the automaticity model of reading, agreed that human minds only have a limited
amount of cognitive abilities to devote to particular tasks. Due to this limited cognitive capacity, readers do not have the ability to focus on word identification while also attempting to effectively comprehend a text. The theory presented by cognitive psychology is called the assumption of limited processing capacity, or limited cognitive resources (Nathan & Stanovich, 1991). This assumption of limited processing capacity recognizes that comprehension of text is a difficult task that requires significant brain resources. In order to have the mental attention necessary to comprehend a text fully, minimal brain activity needs to be expended in recognizing words. Recalling words instantaneously allows a reader to devote the mental energy necessary to comprehend texts (LaBerge & Samuels, 1974). Consequently, this allows the reader to attend to the meaning within the text whether the student reads orally or silently.

**Oral Versus Silent Reading**

Fluency, the ability to read text aloud with appropriate speed, accuracy, and expression, is important to both silent and oral reading (Shanahan, 2012). Specifically, research suggests that oral reading practice and instruction are most effective for developing fluency (National Reading Panel, 2000, Shanahan, 2012). However, the debate over oral versus silent reading is ongoing.

Rasinski (2003) revealed the importance of oral reading over silent reading. Oral reading was most prevalent in classrooms but then began to decline near the beginning of the 20th century, which could be one of the reasons oral reading fluency was not valued in classrooms after that time period. Huey (1908) noted that silent reading was the predominant form of reading in everyday life, but oral reading was a task only found in schools. Students were able to read the words, but the emphasis was on speaking over
understanding. Therefore, by the beginning to middle of the 20th century, silent reading became the primary method of reading instruction (Rasinski, 2003). Silent reading was thought to give the reader an advantage in rate and comprehension. Silent reading could be done simultaneously by many students. In addition, due to the increasing number of reading materials becoming available, silent reading allowed readers to efficiently read more in less time.

If any reading was done at this time it was of a “round robin” nature. “Round robin” reading, where one student reads aloud while others passively listen until it is their turn, elevated the role of silent reading versus oral reading in elementary classrooms (Reutzel, 2006). According to Rasinski (2003), there are drawbacks to “round robin” reading. First, it is hard to keep the rest of the groups’ attention when one student is reading aloud and the rest are to listen passively. Next, students may be embarrassed when they do not know where to begin reading if they lost their place or couldn’t follow along. Finally, some students find a public display of poor reading an embarrassment, while other readers may become bored and distracted so that reading comprehension suffers for even the best of readers. This poor practice continued into the 21st century and is still used in many classrooms today.

The National Reading Panel’s (2000) findings about the effectiveness of oral fluency practices, especially in the early elementary grades, helped elevate oral reading practice over silent reading practice once again. Reutzel (2006) noted that the NRP was unable to find evidence showing a positive impact of silent reading on a student’s fluency acquisition. However, Ruetzel (2006) added that fluency practice is most effective when it is oral versus silent, when it involves more than two readings, and when it involves
feedback. It makes sense that oral reading can lead to more fluent silent reading. A key goal of any reading program, most notably reading fluency, is best achieved through oral reading (Rasinski, 2003).

Despite these findings, a study by Allington (2010) showed that time spent reading, either oral or silent, had a direct impact on reading achievement. Silent reading, as defined by Topping (2012), is reading an appropriately leveled text with a “relatively continuous flow” while getting the most meaning at maximum speed (p. 185). This provides the reader the ability for higher order processing at the same time. Therefore, silent reading allows fluent readers to accomplish more reading in less time, giving much needed reading practice. Today it is commonly believed that silent reading experiences help readers grow in both reading fluency and reading comprehension. Students improve their reading ability by increasing their time spent reading either orally or silently (Schwanenflugel, Kuhn, & Ash, 2010).

There are four areas of concern educators have about silent reading: self selection, engagement and time on task, accountability, and text interaction (Fawson & Smith, 2008; Ruetzel, 2006). However, as in oral reading instruction, silent reading needs structure and accountability. First, teachers can help students self select books by providing books on their interest and reading level that will keep them on task during silent reading. Second, students need to not only be motivated to silent read but engaged in the silent reading process. Firm guidelines need to be set for independent silent reading practice to take place. Silent reading engagement involves the use of strategies when necessary for comprehension of text (Swan, Coddington, & Guthrie, 2010). Third, some sort of student accountability needs to be in place, whether students keep a reading
log or check in with the teacher in some way. Fourth, students’ interaction with the text should be an integral part of silent reading. When the purpose of silent reading is to learn and/or share what was learned with others, motivation rises, more time is spent reading, and academic achievement improves (Swan et al., 2010).

In conclusion, both oral reading and silent reading have a place in American classrooms because research has shown that when students are provided with varied reading opportunities, there is a positive impact on reading achievement. The future of reading involves making instructional decisions to implement both oral and silent reading practices in classrooms “that help students develop greater competency to read and think by and for themselves” (Goodin & Pearson, 2010, p. 20).

**Recent Perspectives on Fluency**

The historical perspective on fluency development provides the context for a current outlook on how students develop fluency. Since the National Reading Panel (2000) report elevated oral reading fluency to the status it possesses today, reading fluency has become a topic of great interest to educators (Samuels, 2010). In an article in *Reading Today*, entitled “What’s Hot, What’s Not for 2004” Cassidy and Cassidy (2003/2004) added oral reading fluency for the first time to a list of terms that deserved to be hot topics that year. After all, the National Reading Panel (2000) had named it as one of the five components of a comprehensive reading program. As a result, more and more educators viewed fluency as an important goal of reading instruction. In addition, these developments led to a large body of research supporting reading fluency instruction (Kuhn & Stahl, 2003; Rasinski, Blachowicz, & Lems, 2012; Rasinski & Hammon, 2010; Rasinski, Reutzel, Chard, & Linan-Thompson, 2011).
Then, Reading First, the only financed component of No Child Left Behind, ended in 2009. Prior to its end, Reading First schools were required to teach the five subskills set by the NRP (2000). Shortly after the conclusion of Reading First, the five essential components became less prominent. At that time, there was a decline in perceptions about the importance of fluency.

Concurrently, in 2009 and again in 2013 and 2014, an annual survey of reading experts (Cassidy & Cassidy, 2010; Cassidy & Grote-Garcia 2013, 2014) determined that fluency was no longer a hot topic for reading. A number of factors, or reasons, account for fluency’s reduced importance among educators and researchers in the last decade. The first reason lies in the fact that researchers and educators cannot agree on a definition of fluency (Samuels, 2010). Studies have shown a correlation between reading rate and reading comprehension (Rasinski et al., 2012). As a result, these studies have changed the definition of reading fluency into reading fast. Two essential characteristics of fluency are the ability to decode and comprehend at the same time. Accuracy and speed are two less essential characteristics of fluency (Samuels, 2010). This definition, based on the automaticity theory, appeared to make the most sense because it defined a fluent reader as one who can do two difficult things at the same time: decode and comprehend. Putting an emphasis on reading rate and accuracy can prove detrimental and is wrong (Rasinski et al., 2012).

A second reason accounting for fluency’s loss of importance had to do with the way fluency was measured (Rasinski et al., 2012; Rasinski & Hammon, 2010). Despite the fact that reading rate was one component of fluency and reading rate was an acceptable measurement of fluency, reading rate had become one of the only ways
reading fluency was measured in classrooms. As a result, fluency instruction has become more focused on students’ reading speed and less focused on whether or not students are making meaning as they read. Prosody and comprehension were oftentimes not a part of fluency instruction. These developments have had some unexpected consequences. Hasbrouck and Tindal (2006) reported that average reading rates remained stable between the years 1990 to 2005. Conversely, from 2004 to 2009 the norm reading rates increased substantially for every grade level. These inflated fluency norms appeared to be a direct result of an instructional emphasis placed on speed reading as a predictor of reading achievement (Rasinski & Hammon, 2010). Rasinski continued to caution educators to minimize the importance of speed in the fluency debate as faster reading does not always translate into better reading.

The oral versus silent reading debate was the third reason for fluency’s demotion. Because most of the reading done beyond the primary grades was silent reading, oral reading fluency instruction in those grades must have little value (Rasinski et al., 2012). Fluency can be a major concern for students in grade four and above, as well as in the primary grades. Difficulty recognizing words can lead to difficulties in understanding and a lack of automaticity can lead to extremely slow reading in older students. Assignments can take much longer than anticipated for these students and can lead to frustration and disinterest. A continued commitment to authentic fluency instruction in upper grades can “improve students’ fluency, comprehension, and attitude toward reading” (Rasinski et al., 2012, p. 521).

Finally, after the NRP (2000) named fluency as one of the five essential components of effective reading instruction, fluency was mistakenly taught in isolation.
Fluency instruction became a time when students were asked to repeatedly reread passages while teachers timed their oral reading for speed and accuracy. Reading for enjoyment and meaning has ceased to be a part of fluency instruction because fluency is not viewed as integral to real reading (Rasinski, 2012). The NRP (2000) sought to inflate fluency’s role as a key component of proficient reading. The intent was not to divide reading instruction into five separate entities. Specifically, “the art of teaching reading challenges all teachers to embed the science of reading instruction into their classrooms in ways that are authentic, engaging, and meaningful for students and that are integrated into the school reading curriculum” (Rasinski et al., 2012, p. 520).

Currently, according to Cassidy and Grote-Garcia (2013), Common Core State Standards (CCSS), having been adopted by 46 states, are driving the literacy agenda in the United States. CCSS are a framework specifying higher level skills describing what students should know and be able to do in the 21st century. Under a section called Reading Foundational Skills, a clear description of fluency (K-5) goals are provided (Shanahan, 2012/2013). The CCSS for fluency under foundational skills states that a student will be able to read with accuracy and fluency to support comprehension. Specifically, the CCSS for fluency states further: (a) read grade-level text with purpose and understanding, (b) read grade level text aloud with accuracy, appropriate speed, and expression, and (c) use context clues to self-correct a word, and rereading as necessary for understanding.

The future of fluency instruction is dependent on educators’ ability to agree on a definition of fluency that includes accuracy, automaticity, prosody, and comprehension. In addition, fluency assessments must incorporate all components of fluency to be
effective. In order for fluency to make an impact on reading achievement, it should be taught in ways that are authentic, meaningful, and integrated into other areas of reading instruction.

**Key Elements of Fluency Development and Fluent Reading**

Fluency is perceived as rapid, accurate, expressive oral reading, with effective word recognition skills, that allows a reader to construct meaning of text (Pikulski & Chard, 2005). Samuels (2012) distinguished between essential characteristics and secondary characteristics of fluency. Fluency’s essential characteristic “is the ability to decode and comprehend at the same time” (Samuels, 2012, p. 14). Fluency’s less important characteristics are speed and accuracy. Rasinski (2012) said fluency is reading with and for meaning.

A fluent reader reads a text accurately, at a conversational rate or automaticity, and with appropriate expression, or prosody (Hudson, Mercer, & Lane, 2000). Fluent readers can maintain a fluent read for long periods of time. They also retain the skill after not practicing for long periods of time and when using different kinds of texts. They are not easily distracted and appear to read in an effortless, flowing manner (Hudson et al., 2005). Fluent readers are likely to develop reading with accuracy first, then reading with automaticity, and finally reading with prosody or expression (Schwanenflugel et al., 2010). The use of prosody is usually the result of comprehension.

**Accuracy**

Accuracy in word reading is the ability to recognize and decode words correctly. Kuhn and Rasinski (2007) defined a proficient reader as one who not only identifies
words accurately, but also instantly and effortlessly. Readers must be able to sound out text words with few errors, using decoding strategies.

Research shows word-reading accuracy is dependent on a good understanding of the alphabet, the ability to blend sounds together, and knowledge of a large bank of sight words (Hudson et al., 2005). Generally, children in the primary grades can read texts successfully when they know over 95% percent of the words (Rasinski, 2003). In addition, skilled readers use the immediate word recognition strategy 99% of the time. Some distinctive word feature triggers fast retrieval of these sight words from long-term memory. Words that are not quickly retrieved from long-term memory as sight words must be analyzed in some way. In order to figure out unknown words, word identification strategies such as phonics, word structural analysis, or context clues must be employed.

When developing readers are increasing their decoding skills, word recognition requires much of their attention, which leaves little mental energy for comprehension. It is through repeated reading practice with many different texts that students can move from labored reading to reading that is effective. A reader who does not read accurately or reads words incorrectly might not understand what the author is saying. This can lead to misinterpretations within the text. Poor word-reading accuracy can have a negative effect not only on fluency, but on comprehension as well. Word recognition should be both accurate and automatic.

**Automaticity**

Reading rate is comprised of the speed and fluidity a reader uses as the text is read. Automaticity, or rate, can be defined as quickly identifying a word in and out of the
context of sentences. LaBerge & Samuels (1974) defined automaticity as the ability to recognize words automatically or effortlessly. This automatic processing occurs when the reader uses as little effort as possible in decoding text, saving that mental energy for comprehension. If a reader reads too slowly, or with poor automaticity, he might not be able to keep an ongoing understanding of a text. The rate at which readers decode or recognize words is as important as word-reading accuracy. Automaticity frees up cognitive resources so that those resources can be devoted to comprehension (Hudson et al., 2005; LaBerge & Samuels, 1974).

As a general rule, fluent second grade readers read an average of 100 words per minute (Rasinski & Padak, 2005). Readers can be accurate, but not automatic. When this occurs, they use too much attention on word identification. When readers are both accurate and automatic, they expend little mental energy as they identify words accurately and quickly. As a result, they can apply their processing skills to comprehending the text.

Although the goal for any reader is to read accurately with automaticity, fast reading is not the same as fluent reading. Specifically, many educators assess fluency by looking at automaticity reading rates. When measuring automaticity, the number of words read correctly per minute is measured, as well as how long a reader takes to read a text passage. Consequently, teachers look at oral reading scores to determine reading proficiency. Along those same lines, some fluency interventions focus on increasing reading rate because slow reading can lead to a decrease in comprehension. Researchers agree that an increase in reading rates relate to higher comprehension and that oral
reading rates are considered an important measure of reading proficiency (Fuchs et al., 2001; Kuhn & Rasinski, 2007; Postlethwaite & Ross, 1992).

**Prosody**

Prosody is the ability to read with expression and with reading that sounds like speaking. Prosodic readers know which words to emphasize, when to pause, and they attend to punctuation at the end of sentences. Prosodic features include variations in pitch (intonation), stress patterns (syllable prominence), and length of time (duration) that leads to expressive reading (Allington, 1983; Hudson et al., 2005). Poor prosody, or expression, can cause the reader to group words together incorrectly or emphasize the wrong part of a sentence. Struggling readers with poor prosody may read with a monotone voice, in a word-by-word manner or without much expression.

Prosody shares a close relationship with comprehension since it incorporates those characteristics of oral reading that allow it to sound expressive. Hudson et al. (2005) stated, “because prosody and reading comprehension seem to have a reciprocal relationship, prosody is an important area of focus for fluency instruction” (p. 704). It remains unclear whether prosody is the result or cause of comprehension (Kuhn & Rasinski, 2007; Kuhn & Stahl, 2000; Reutzel, 1996) or whether they have a reciprocal relationship. However, it is clear that correct expression indicates how much text is comprehended by the reader (Hudson et al., 2005).

Allington (2006) believed that there are several observable behaviors a reader exhibits when reading a text that is clearly too difficult. A slow reading rate, or low automaticity, was the most obvious and can be accompanied by finger pointing. Weak prosody, or break down in phrasing and intonation might also occur. Rereading part of
the text was another sign of text difficulty. Poor readers tended to read in a word-by-word manner when they encounter difficult texts. Even though it is normal for many beginning readers to move through this word-by-word, finger pointing phase, the goal was to eventually develop into prosodic, phrased readers with appropriate intonation and spontaneous self-correction of misread words (Allington, 2006). The amount of reading a student does also affected their prosody development. Because slower readers will read much less than faster, fluent readers, poor prosody affected overall reading development (Stanovich, 1986).

Moreover, as a result of prosody’s incorporation of expression in oral reading, it has a close relationship with comprehension. The results of a study by Paige, Rasinski, and Magpuri-Lavell (2011) showed that students who read with prosody are better at comprehending what they read than those who possess poorer prosody. Prosodic features in oral reading not only help readers understand what they read, but convey meaning to others.

**Review of Influences and Recent Perspectives in Comprehension**

As described thus far, comprehension can be described as the reader’s ability to gain meaning from text. Because a fluent reader can read automatically, this allows attention to turn to comprehending texts more easily. Consequently, oral reading fluency is a good indicator of comprehension ability. Thus, fluency can make a difference in a student’s success in the ability to accurately comprehend text (Kuhn & Razinski, 2007, p. 204). According to Chard, Pikulski, and McDonagh (2012), “fluency with accompanying high levels of reading comprehension is of ultimate advantage to readers” (p. 109). First and most importantly, literacy teachers need to know that there is strong evidence that
reading comprehension performance can be significantly improved with effective
teaching (Allington, 2006). Reading comprehension involves active thinking that can be
developed when students are given demonstrations of the comprehension strategies
literate people use when they read. Strategy learning takes time and the most successful
interventions require long-term instruction and application

According to Jetton and Dole (2004), literacy is a constructive, fluent, strategic,
and motivated process. Becoming literate has come to mean using strategies to construct
meaning from text (Gambrell, Malloy, & Mazzoni, 2007). In the last 50 years, there have
been many theoretical foundations on which the comprehension practices of today have
been based. Moreover, a student’s comprehension development is a complex process.

Theories Emerge

In the 1960s a debate began regarding whether students learn best using a skills-
based, or part-to-whole strategy versus using a whole-to-part strategy. In a series of
experimental studies, Chall (1967) found that the best way to teach children to read was
by using a skills-based approach compared to teaching whole words. Goodman
challenged the skills approach and suggested that good readers use background
knowledge and context clues to predict and confirm words while reading. This conflict
in perspectives has continued to influence current views of literacy development.

Another view of literacy development, brought on by the part-to-whole and
whole-to-part debate, was K. S. Goodman’s (1969) sociopsycholinguistic theory, which
involves transactions between the mind of the reader and the written text as a way of
comprehending, or making meaning from texts. This theory is dependent on the social
interaction and the schematic background a reader brings to the text.
Sociopsycholinguistic techniques can be applied to learning to read as reading and writing involves the student bringing social, cultural, personal, and linguistic factors to the text while constructing meaning during interaction with the text (K. S. Goodman, 2003e). In addition, the reading process is viewed as one in which developing readers function as users of language. In a linguistic society, children have a need to understand and be understood, as well as to master elements of language (K. S. Goodman & Y. M. Goodman, 2003). Mastering language can lead to recognition of printed symbols. As children are exposed to a wide range of reading choices, they detect certain elements of written language. Even beginning readers look for and use orthographic, syntactic, and semantic cues in written language (K. S. Goodman & Smith, 1971). Consequently, children who interact with text eventually learn that signs and symbols can have personal meaning for them. Therefore, reading is a meaning-making thought process that is an extension of natural language, not rote memorization of signs and symbols (K. S. Goodman & Y. M. Goodman, 2003a).

In the 1970s, Flavell’s (1977) theory of metacognition suggested that readers are active, self-guided, and independent in strategies used. When proficient readers are metacognitive, they think about their own thinking during reading. Vygotsky (1978) and Meichenbaum (1977) looked at theories of constructivism and scaffolding. In addition, Vygotsky (1978) investigated the social context of comprehension development. According to Vygotsky, learning is a social process where social contexts make all other literacy functions possible.

Students construct meaning by interacting with each other and the text. Before reading, readers should activate prior knowledge, make predictions, and have a purpose.
for reading. During reading, discussions need to take place that bring about thoughtful consideration of ideas in the text for understanding and learning. After reading, teaching should encourage continued interaction with text content and interaction among students about the text. More specifically, according to Allington (2006), there are six research-based strategies which encourage continued interaction with text content and among students and teachers, which are also central to improved school comprehension performance. These useful research-based comprehension strategies include activating prior knowledge, summarizing, the use of story elements, using imagery, students generating questions, and the teacher thinking aloud.

LaBerge and Samuels’ (1974) automaticity theory attempted to explain how people become skilled at performing difficult tasks (Samuels, 2006). This particular theory, as it applies to reading, focuses on the development of automaticity in recognition of words. Reading for meaning, when students cannot automatically decode words, has to be done in two stages. First, students must use all their cognitive ability to be able to decode the words in a text. Second, the readers must then turn their attention to comprehension of the text as comprehension requires the complete attention of the reader. When decoding words drains the reader of the attention needed for comprehension, then the ability to gain meaning from text breaks down. La Berge and Samuels (1974) demonstrated in their study that as decoding skills became more automatic, a reader’s attention would be freed up to increase comprehension.

La Berge and Samuels’ (1974) automaticity theory has proved useful in studies on the relationship between fluency and comprehension. Accuracy and automaticity in decoding words are two components of successful fluency. With enough time and
practice, students should become automatic in decoding words. They are now able to accomplish decoding and comprehension skills together. Since that time, research has continued to show that developing fluency in reading through effective instruction and practice can greatly improve comprehension. Automaticity of decoding, a critical component of fluency, is essential for high levels of reading achievement (Pikulski & Chard, 2005).

Also, there is a transactional theory which stated that different readers interpret text differently depending on their personal, cultural, and social backgrounds (Rosenblatt, 1989, 1994). This theory, Rosenblatt’s Transaction Theory (1989, 1994), made popular the term transaction which was first introduced by Dewey and Bentley (1949). Rosenblatt suggested that meaning is not in the text itself but arises during the transaction, or active reading, between the reader and the text. The reader is a person trying to make meaning by actively reading, or transacting, with a text. The text is a collection of words on a page or the actual object held in hands. The poem is the literary work created as the reader transacts with the text. In addition, reading is a transactional, sociopsycholinguistic meaning-making process. Readers construct meaning from texts rather than absorbing meaning from the page. Words and skills should not be taught in isolation, but in the context of texts. According to Rosenblatt (1978, 1989), the process of teaching reading should be from whole to part and top to bottom. Readers make sense of texts by drawing on their schemas; their background knowledge, experiences, feeling, and beliefs. Meaning is made as readers transact with a text in specific situational contexts.
Schema theories (Anderson & Pearson, 1984; Bartlett, 1932; Rumelhart, 1980) dominated comprehension theory and practice in the late 20th century. Schema Theory refers to the knowledge readers have about a situation, event, or topic (Reutzel, Camperell, & Smith, 2002). These theories showed how prior knowledge provides a conceptual framework for comprehending texts.

Schema theory explains “how we store our knowledge, how we learn, and how we remember what we have learned” (Keene & Zimmerman, 1997, p. 50). One of the most effective ways to improve comprehension is to activate mental files before reading. Because of schema theory, it has become common for students to recall information from their memory (or schema) relevant to what will be read. While reading, good readers think about things they already know and they think about things that have happened to them that are similar to what is happening in the book. It is important for students to activate schema independently and recall experiences and information relevant to what they are reading. Schema theory is most useful because it helps students make connections that relate unfamiliar texts to their prior knowledge and experiences. These connections take the following forms: text-to-self connections, text-to-text connections, and text-to-world connections (Keene & Zimmerman, 1997; Miller, 2002). Students also need to create schema for different text structures and formats, what is known about an author and his or her style, and how to build new schema.

The Gradual Release of Responsibility Model (Gallagher & Pearson, 1983), describes the process of in-depth instruction at the start of a lesson, and then slowly, through guided practice, gives the responsibility for learning over to the students. This model of reading instruction uses four stages. Teacher modeling explains the strategy by
thinking aloud and demonstrating when and why the strategy is most effective. Guided practice, or scaffolding, gradually gives students more responsibility for using each strategy or completing each task in many authentic situations. During independent practice, or the “letting go” stage, students apply the strategy on their own reading with much teacher feedback. The application stage is evident when children apply the strategy independently using different texts. The Gradual Release of Responsibility Model (Pearson & Gallagher, 1983) is useful for any student as he or she learns to do a new task and moves toward independence (Miller, 2002).

Sweet and Snow (2002) defined reading comprehension as “the process of extracting and constructing meaning through interaction and involvement with written language” (p. 24). They cite three dimensions to comprehension process: the reader, the text, and the activity. In order to comprehend, the reader must have many abilities and capacities. These include cognitive abilities, motivation, and several types of knowledge. Types of knowledge include vocabulary, linguistic, and topic knowledge. Other abilities include attention, memory, analytic, visualization, and inferencing abilities. In addition, fluency appears to be important to comprehension. The ability to read fluently, with speed, accuracy, and expression, is an important prerequisite for reading comprehension (Sweet & Snow, 2002). Differences in reader social and cultural influences can also affect readers’ proficiencies.

Block and Pressley (2007) noted that past and present research views and theories are giving new understandings of how to teach comprehension. A study by Miller (1956) showed that comprehension was greatly restricted when readers were unable to decode words. Because the reader’s focus was on decoding or processing vocabulary, they could
not attend to understanding the text. Miller’s study concluded that comprehension of text would be compromised without effective instruction in word recognition, fluency, and vocabulary first.

A final theory, the interactive process model of cognitive functioning, described how competent readers use contextual knowledge to accurately predict upcoming words. This cognitive processing model stated that lower-level proficiency skills are not necessary to retain a proficiency at higher level processing skills. In reading, this means that readers are able to contextually make predictions and accurately identify words that they may not be able to identify in isolation. Students may be able to actually transcend their abilities for identifying isolated words when exposed to these words in context through reliance upon the meaning within a text passage (Fuchs et al., 2001). This theory, along with the previous theories on comprehension development, has had a significant impact on the strategies to build comprehension in classrooms.

**Comprehensive Reading Instruction**

All components of a comprehensive reading program are equally important to teach young children to read and therefore comprehend text. In fact, a comprehensive reading program should include all five foundational areas: phonemic awareness, phonics, fluency, and vocabulary. However, this approach can also lead to a skills-based approach to teaching reading. If highly effective comprehension instruction is made up of learning activities that help students “to leave a reading experience with fresh perspectives, vital information, and new ideas” (Block & Pressley, 2007 p. 220), readers are then able to use the skills to carry out complex comprehension processes essential to create meaning from text.
It is now known that proficient readers comprehend text at the most basic word level (Block & Pressley, 2007). Therefore, comprehension instruction should be an integral part of reading instruction with beginning readers (Sweet & Snow, 2002). When they come to a word they don’t know, readers activate graphphonemic (letter, sound relations), syntactic (grammar, word order), and semantic (meaning) strategies and all the understanding they have produced up to that unknown word, to get the meaning of the word. In addition, increased levels of comprehension can occur with at least six exposures to a word in different contexts (National Reading Panel, 2000).

Teachers can learn to provide effective instruction in comprehension development. However, this requires teachers to move away from textbook teacher guides that were designed to assess student recitation proficiency rather than improve that proficiency (Allington, 2006). These textbook teacher guides rely on students acquiring comprehension strategies through self-discovery, but many students do not discover these strategies without teacher demonstration.

Teaching children which comprehension strategies are used by proficient readers and helping them use those strategies independently is central to the teaching of reading. According to Keene and Zimmerman (1997), proficient readers must first be metacognitive, or aware of when they comprehend and when they do not. Thinking about one’s thinking helps readers to deepen their understanding of texts. Students can activate their schema by recalling information and experiences relevant to what they are reading. In order to do this, students must make connections while they read. Those connections are: text-to-self, text-to-text, and text-to-world, schema for authors, text format, and creating new schema.
When students relate unfamiliar text to their prior knowledge and/or personal experience, those connections can take three forms: (a) text-to-self, (b) text-to-text, and (c) text-to-world (Keene & Zimmerman, 1997). One way students make connections from the text to themselves is text-to-self connections. According to Miller (2002), when students make self-connections as they read, it is “like having a conversation going on in your head” (p. 57). They use their experiences and background knowledge, or what they already know, to make sense of their reading. Text-to-text connections are a second way students make meaningful connections. In text-to-text connections, students use their schema to make connections from one text to another. A third way is text-to-world connections where students use what is going on in the world to make meaning with what they are reading. Students use schema to better understand and interact with text by making connections (Miller, 2002).

Proficient readers must also determine what is important as they read texts and ask questions as they read. In addition, proficient readers create mental images before, during, and after they read, and make inferences. An inference is a new idea that happens as readers think of an idea that is probably true about a text. When students infer, they create a personal meaning from a text. Finally, students who are proficient in their reading synthesize information in texts during and after reading by summarizing the text. Children “who actively engage in these cognitive strategies (activating prior knowledge, predicting, questioning, summarizing, and creating a mental image) are likely to understand and recall more of what they read” (Stahl, 2004, p. 598).

It is very important for teachers to model these comprehension strategies while instructing their students. Less proficient readers who struggle with comprehension need
to be shown a model they can imitate so they can become more proficient readers. Modeling the think aloud strategies that proficient readers use can also enable teachers to build their students’ abilities to properly interact with the text.

Comprehension strategies, along with other reading strategies, need to be taught in the classroom under the structure of a readers’ workshop (Calkins, 2001; Keene & Zimmerman, 1997; Miller, 2002). According to Harris and Hodges (1995), readers’ workshops engage students in reading and responding to literature in teacher-led whole and small group discussions where key concepts about reading are learned. Readers’ workshops allow readers to gather for a story or read aloud/think aloud and a mini-lesson. Teachers can model and teach students what it is that good readers do. Students can practice reading behaviors in authentic situations using real books.

The National Reading Panel (2000) emphasized the need for increased comprehension strategy instruction. These strategies should not be taught in isolation, but together. A comprehension strategy integration approach has been shown to be more successful than teaching one strategy before teaching another.

Current Perspectives

Within the last decade, the reading research focus continues to come from two different perspectives and has developed two different theoretical models of reading (Weaver, 2002). One group is referred to as skills researchers and the other is referred to as comprehensive literacy researchers. In the first theoretical model, skills research promotes a part-to-whole skills approach to teaching reading where skills are taught in isolation and in a sequence of order. The second theoretical framework is a comprehensive literacy research approach that focuses on reading as a whole and the
parts are taught as they relate to the whole. The basis of using a comprehensive literacy approach is that “first and foremost, reading means constructing meaning, and using everything you know in order to do it” (Weaver, 2002, p. 3).

In conclusion, becoming literate has come to mean using strategies to construct meaning from text. A students’ comprehension development is a complex process that develops with multiple opportunities for strategy practice. Literacy comprehension tasks may differ conceptually and in their purpose, but each task must be situated in meaning making opportunities to practice both collectively and in isolation. A goal of literacy instruction, then, is to apply literacy skills and strategies to perform literacy tasks (McKenna & Robinson, 2009).

**The Link Between Fluency and Comprehension**

Comprehension, which is the ultimate goal of instruction, is the construction of meaning and the goal of all reading instruction. According to Rasinski and Padak (2001), “Fluency is that bridge between word recognition and comprehension. It is marked by quick, accurate, and expressive oral reading that is well understood by the reader.” (p. 28). Oftentimes a problem with comprehension is really a side effect of a more fundamental problem, such as difficulty in word recognition, word identification or decoding, and problems in fluency (Rasinski & Padak, 2001) or lack of parental involvement (Postlethwaite & Ross, 1992).

On the other hand, the lack of fluency often results in poor comprehension because these readers spend so much time and energy figuring out unknown words that they miss the most important task in reading – making sense of the text. Along those same lines, fluent readers recognize words and phrases instantly on sight. They spend
very little energy on decoding words and get quickly to the overall meaning, or comprehension, of the text. A student’s lack of fluency can be one cause of their comprehension difficulties. Rasinski (2003) suggested that focusing on efforts to build oral reading abilities by working on fluency leads to “significant gains in comprehension” (p. 35). A very strong research base “indicates that while fluency in and of itself is not sufficient to ensure high levels of reading achievement, fluency is absolutely necessary for that achievement because it depends upon and typically reflects comprehension” (Pikulski & Chard, 2005, p. 511).

LaBerge and Samuels’ (1974) automaticity model of reading provides an early framework for oral reading fluency as an indicator of overall reading competence. They promote the view that skilled reading involves taking the attention of lower level word identification and applying it to higher level comprehension functions, where higher level comprehension skills wait for the completion of lower level word skills (Fuchs et al., 2001). This model, along with a more recent interactive model of reading (Stanovich, 2000), both share the assumption that effective low level word recognition frees up mental capacity for higher level comprehension processing of text. However, in contrast to LaBerge and Samuels’ automaticity theory, Stanovich’s interactive model relies on prior knowledge to aid in word identification skills. Nevertheless, according to Fuchs et al. (2001), both are instrumental in framing a theoretical argument for fluent oral reading serving as an indicator of overall reading proficiency.

A study by Jenkins, Fuchs, Espin, van den Broek, and Deno (2003) examined oral reading fluency as a measure of reading comprehension by looking at 113 fourth grade students’ fluency scores on both words read in isolation or in context, and reading
comprehension scores on the Iowa Test of Basic Skills. Their results indicate that text fluency appears to have more in common with reading comprehension than list fluency. Jenkins et al.’s (2003) findings also suggested that oral reading fluency goes beyond reading subcomponents at the word level and allows readers to apply higher level comprehension skills while reading. Thus, oral reading fluency from text predicts reading comprehension and, in turn, comprehension predicts oral reading text fluency. This exploration of oral reading fluency “may serve as a strong indicator of overall reading competence because it captures individual differences in a number of reading subcomponents at lower and higher levels of processing” (Fuchs et al., 2001, p. 247).

Another study by Klauda and Guthrie (2008) suggested that there might be a reciprocal relationship between fluency and comprehension. They examined this relationship between fluency and comprehension over a 12-week period using fifth grade students. Their subjects were asked to read a series of sentences silently while being timed and then verify the content of those sentences. After the 12-week period, the results of this study showed that fluency predicted growth in reading comprehension and comprehension predicted growth in fluency (Lai, Benjamin, Schwanenflugal & Kuhn, 2014).

A recent study by Lai et al. (2014) also examined the reciprocal, or directionality, of the relationship between oral reading fluency and reading comprehension by modeling the interaction between the two over time. They consider second grade as a key year for reading fluency development and therefore assessed 154 second-grade students in reading fluency and comprehension over the course of a year. After successfully testing three models, their results indicate only one model, the traditional model describing a one
directional relationship between oral reading fluency and reading comprehension, found evidence of reciprocity. The findings from this study are consistent with the theory of automaticity. Fluency accounted for comprehension, suggesting that fluency is still developing. Therefore, the readers’ focus is on decoding skills rather than comprehension. In addition, according to the researchers, interventions that focus on increasing fluency have been shown to provide the most gains on fluency and comprehension.

**Developing Oral Reading Fluency: Instruction and Practice**

One of the major goals of reading instruction is making sure students become fluent readers. Since much research has shown that reading fluency is an integral part of the reading process, fluency must be taught to developing readers. There are many approaches and opportunities for good fluency instruction in classrooms. According to Allington (2006), there are a number of intervention strategies that have been shown to be effective in developing fluency and fostering comprehension. “One key aspect of fluency approaches is that they combine extensive opportunities to read connected text with the provision of scaffolding. That is, they provide learners with support through either feedback or modeling that emphasizes appropriate decoding, phrasing, and expression” (Kuhn et al., 2006, p. 358). The National Reading Panel (2000) stated that fluency-oriented approaches to literacy instruction are effective at increasing students’ accurate and automatic word recognition, assisting with their comprehension, and promoting their use of prosodic features, such as stress, pitch, and phrasing. For an educational practice to be considered effective, an alignment among assessment, instruction, purpose, and standards must be addressed before the practice is implemented.
The following methods of oral reading instruction are supported by research and considered effective practices in the field of education for all students.

Reading aloud to students is considered one of the best ways to model oral reading. When students listen to a read aloud, they see that meaning is expressed through words. Students can enjoy stories and be exposed to words that are above their reading levels. Trelease (2000) reported that students’ listening levels are ahead of their reading levels. “Receptive vocabulary” refers to words that a student understands, while “expressive vocabulary” refers to words that a student uses aloud. Most typically, a person’s receptive vocabulary is more developed than his or her expressive vocabulary. When students are exposed to fluent reading and teachers “bless” many different genres of books, it not only helps students move toward more fluent reading but inspires a lifelong love of reading. Modeling oral reading in a fluent manner helps readers to develop an internal understanding of what expressive, meaningful reading is all about (Rasinski, 2003).

A second effective oral reading practice is repeated readings. In order to gain proficiency in fluency, many opportunities for practice should be offered to students. Repeated readings can provide the practice needed to help a reader’s decoding become fluent. Chunking texts into smaller units, or phrases, encourages fluency. Rasinski (2003) suggested that learning high frequency words in isolation could have a negative effect, so students should do repeated reading of these words in phrases or short sentences. According to Samuels (1979), repeatedly reading a passage of text provides essential practice for nonfluent readers to practice word attack skills. With repeated
reading tasks, the word attack skills become automatic, resulting in an increase in fluency and comprehension that are carried over to new selections.

Performance readings are a powerful, motivating way to make repeated readings engaging for students. First, Reader’s Theatre is a form of repeated reading where students read from a script in front of an audience. It requires practice, but no props or costumes, so reader’s theater is much more manageable than a play. The purpose of Readers Theatre is to perform a text or script with accuracy, expression, and automaticity so that an audience can find meaning in the reading (Young, 2013). The author elaborates by saying, “students who engage in Readers Theatre regularly gain confidence in their own abilities as readers” (p. 83). Second, in radio reading, the students become the radio announcers while the remainder of the class becomes the listening audience for the purpose of developing fluency and comprehension in oral reading (Nichols, Rupley & Rasinski, 2009). The teacher assigns parts of a text to four to six students. The students practice the text and read it aloud later. These readings can be taped and analyzed. Third, because poems lend themselves to being read aloud, reading and performing poetry build fluency by using the elements of repetition, rhyme, and rhythm.

Providing oral support of a student’s own reading is third way to develop fluency. Choral reading, paired reading, recorded reading, echo reading, and buddy reading are some classroom routines and strategies for groups of students to help foster fluency. During choral reading, children read the same text, aloud, at the same time. Paired or partner reading (Allington, 2001, Topping & Bryce, 2004) is where a more knowledgeable reader supports the learning of a less knowledgeable reader using prompting, praise, and feedback. Recorded readings or automated readings (Chomsky,
provide opportunities for students to listen to books on tape until they feel they can read them successfully on their own. Echo reading, a method of modeling oral reading, is where one sentence or phrase is read at a time and the student echoes back that same phrase. In buddy reading, students who are at the same reading levels are paired up and orally read the text together. These methods of fluency instruction are supported by research and are effective educational practices for all students.

Other oral reading practices involving classroom routines and strategies can help foster fluency. These include the Oral Recitation Lesson (ORL, Hoffman, 1987), Fluency-Oriented Reading Instruction (FORI, Stahl & Heubach, 2005), and the Fluency Development Lesson (FDL, Rasinski et al., 1994). Implementation of these instructional practices provides explicit instruction focused on accuracy, automaticity, prosody, and self-monitoring of fluency.

The Oral Recitation Lesson, (ORL) was designed to increase fluency over a week while using a basal story (Hoffman, 1987). The teacher selects a story and models fluent, oral reading. After reading, the teacher chooses a comprehension strategy and encourages discussion of the meaning of the story along with the prosodic elements found in the story. The students then practice reading the text alone or with a partner. The focus remains on text dialogue or reading aloud with expression. The final step is some type of performance of the text. This approach to developing fluency combines teacher modeling, echo reading, and repeated readings as a part of direct instruction (Nichols et al., 2009).

The Fluency-Oriented Reading Instruction (FORI) was designed for whole group instruction and can also be used with any basal reading program (Kuhn et al., 2006; Stahl
& Heubach, 2005). The teacher initially shares and discusses the new story. Students are to take the story home and read it to someone at the beginning of the lesson. During subsequent days, students practice reading the story with a partner. The teacher then provides additional instruction that encourages the students to interpret the story for themselves. Twenty minutes a day is set aside for independent self-selected reading to allow students to read a variety of books. According to Nichols et al. (2009), FORI is a fluency approach with an emphasis on comprehension of texts.

**The Fluency Development Lesson**

Rasinski et al. (1994) developed and tested the FluencyDevelopment Lesson (FDL). This lesson incorporates many aspects of effective fluency instruction. It can be done using any passage, but poetry is a good choice of texts to use. According to Rasinski (2006), “To me these texts (poems) are the perfect fit for fluency instruction and repeated readings, and by practicing and performing them, students gain in accuracy, automaticity (rate), prosody, and comprehension.” (p. 705). The FDL is to be used in addition to the regular reading series. It usually takes between 15 and 20 minutes. It is best done first thing in the morning. Poems can be written on large chart paper or a transparency can be made of the text. The teacher makes copies of brief passages, usually poems of 50-150 words, for each child. Poems can be correlated with curriculum themes or seasonal activities. Poetry is a good choice for teaching fluency because poems have rich and playful language and encourages children to want to read and have fun by reading (Favor, 2009).
Conducting the FDL

The first day the teacher gathers the students around the poem. The teacher introduces the poem and reads and rereads the poem while the students follow along with their own personal copies. The class discusses the content of the poem, the meaning of the poem, and the poet’s purpose and style. The students locate any rhyming words, onomatopoeias, or use of alliteration. They also discuss the quality of the teacher’s reading.

Next, the class gathers around the chart poem again. This time the students read the poem chorally a few times. The students might also read different verses or portions of the text in groups. While the students read aloud, the teacher has the opportunity to listen and analyze their misreading. The class discusses what a fluent reader looks and sounds like. The class talks about the three characteristics of a fluent reader: accuracy, automaticity, and prosody.

The students gather around the chart poem again the following day. This time the teacher creates a variety of readings for the students. They might read by boys and girls, stanzas, lines, etc. The class discusses words from the poem that may cause difficulties, sort words phonetically, and/or add words of interest to a word bank.

The following day, students are each given a copy of the poem to add to their poetry notebook. They listen to the teacher read the poem again before the class divides into partners and the partners find a spot to practice reading the poem to each other. One student reads the poem three times to the other partner before switching. The partner who is not reading needs to follow along and help when needed. The students then regroup and the teacher asks for volunteers to perform the poem. Individuals, pairs, and
groups perform the poem for the audience. The students are then given their homework assignment. They will take the poem home in their poetry notebook and read it to a “Lucky Listener”. The listener will sign the “Lucky Listener” sheet. The student will then write a response to their poem on the back. (It is important for the students to respond to poetry, so a writing component to the FDL with a focus on comprehension needs to be included.) Taberski (2000) recognized the importance of reflecting on reading and encouraged teachers to provide opportunities for their students to respond, in writing, to poetry. They return their homework assignment the next day.

Last, the teacher collects and responds to the homework assignments. A child is asked to perform the poem. The child is taped reading the poem. The quality of the read is discussed. The reader also self-evaluates his or her reading after listening to the taped reading.

For some culminating activities, the teacher might plan a poetry party and ask for visitors to come and listen to the students perform. Students can also write their own poetry and perform for a poetry celebration at the end of the year.

The FDL has been found to be very successful in classrooms and students have made great progress in their reading fluency using the FDL. According to Rasinski (2003):

We found that students made substantial gains in their reading fluency, as well as in their overall reading as measured by an informal reading inventory. Moreover, we found that students and teachers enjoyed this lesson. Students become successful at reading FDL texts – and that success transferred to other, unfamiliar texts. (pp. 130, 131)

Current research suggests that there are effective instructional practices that can positively impact oral reading fluency performance.
Studies on the Fluency Development Lesson

Kuhn and Stahl (2003) found that fluency instruction that includes assisted approaches and attention to rhythm and expression are generally most effective. Further, they found the FDL a promising approach. In one study by Zimmerman and Rasinski (2012), 35 first, second, and third grade struggling readers were provided reading intervention using the FDL on a daily basis for five weeks during a Kent State University Summer Reading Clinic. Pre- and posttest data were collected in order to determine gains in fluency. The students’ fluency gains were compared with the normal expected grade level fluency norms reported by Hasbrouck and Tindal (2006). Even though students in all three grade levels began the program with fluency rates well below end of the year norms for their respective grade levels, the students were reported as demonstrating significant gains in oral reading fluency over the duration of the clinic. In addition, significant gains were also made in reading comprehension as an unexpected outcome of this same study.

A second study by Reutzel (2012) looked at current and past literature on fluency in weekly after school meetings of teachers in grades two through four in order to improve fluency instruction in their school. One of several components of fluency they looked at was different forms of fluency instruction found in elementary classrooms. They determined that “fluency practice and instruction are essential components of high-quality reading instruction in elementary years” (p. 120). As in the FDL, high-quality oral reading fluency instruction should include teaching students the elements of fluency, what it sounds like in oral reading, as well as components of comprehension. Using guidelines from the NRP (2000), Reutzel (2012) also determined that an important part of
daily reading instruction should include 10 to 15 minutes of daily fluency instruction. This current research suggests that although struggling readers have difficulty with reading, there are effective instructional and assessment practices that can positively impact their reading performance.

**Current Methods of Assessing Fluency and Comprehension Together**

As teachers listen to students read aloud, judgments can be made about their progress in reading. While observing oral reading fluency, each aspect of oral reading fluency should be considered: reading rate, work accuracy, and prosody (Hudson et al., 2005). As educators look for ways to assess students’ reading fluency, they at times have looked at curriculum-based measurements (CBM), procedures for monitoring students’ progress in reading. According to Hasbrouck and Tindal (2006), a widely used CBM procedure is the assessment of oral reading fluency (ORF), which looks at rate and accuracy, two out of three components of fluency. A student reads aloud from an unrehearsed passage for one minute while the teacher listens and times the reading. At the end of the minute, a score of words correct per minute (WCPM) is calculated by subtracting the errors from the total number of words read. WCPM has been shown to have a strong correlation with reading comprehension (Fuchs et al., 2001; Hasbrouck & Tindal, 2006).

**DIBELS**

In the last decade, fluency has become widely viewed as a measure of rate and accuracy (Mathson et al., 2006). This has led to one type of assessment that measures reading rate (words correct per minute) and word accuracy but ignores prosody and
comprehension (Kuhn & Rasinski, 2007). These assessments look at oral reading fluency norms set for students by grade level and time of year. One example is the Dynamic Indicators of Basic Early Literacy Skills (DIBELS, Good & Kaminski, 2002), designed to measure the growth and development of early literacy skills. DIBELS measures initial sound fluency, letter naming fluency, phoneme segmentation fluency, nonsense word fluency, and oral reading fluency. DIBELS Oral Reading Fluency is intended to be used on a population of students in grades one through three, three times a year, as a short, individually administered benchmark assessment instrument to assist teachers and other educational specialists to screen for fluency levels. The purpose is to identify and monitor students’ progress, especially those students who may not meet the standards on achievement tests. Specifically, DIBELS is designed to track fluency progress by assigning a WCPM score after a one minute fluency probe read. The benchmark goal for Oral Reading Fluency is 90 words per minute for the end of second grade.

Educators have expressed concerns about the use of ORF measurements as they appear to make an important determination about reading proficiency by looking at a single, isolated reading skill (Hamilton & Shinn, 2003). Another concern for using ORF rates to measure WCPM only is the tendency for students to think that fast reading, rather than meaningful reading, is the goal of reading instruction (Kuhn & Rasinski, 2007). Therefore, accuracy, rate, and quality oral reading should be assessed with in a context of comprehension (Pikulski & Chard, 2005).

3-Minute Reading Assessment

When looking at the effect that reading fluency has on comprehension of texts, Rasinski and Padak’s (2005) 3-Minute Reading Assessments, Word Recognition, Fluency
& Comprehension is one option for teachers. The purpose of the 3 Minute Reading Assessments: Word Recognition, Fluency, & Comprehension is to measure the fluency and comprehension development of students in grades one through four. This teacher-friendly assessment helps teachers to determine whether or not fluency instruction has resulted in adequate student progress and how well each student is able to read grade-level texts. The 3-Minute Assessment can be done at regular intervals three or four times during the school year. It takes less than five minutes to administer and it gives teachers information on decoding skills, reading fluency, and comprehension. Assessment is very important to successful instruction, and assessment is a key element in student success in learning to read (Postlethwaite & Ross, 1992). In addition, if fluency is defined to include accuracy, rate, prosody, and comprehension, then an assessment of fluency should incorporate accuracy, rate, prosody, and comprehension (Deeney, 2010). The 3-minute reading assessment does that.

The directions for the assessment are easy to follow. The student is given a copy of the passage that corresponds with the grade level and time of year. The teacher will tell the student that at end of the reading, she/he will tell the teacher what she/he remembers about the passage. The student reads for 60 seconds. The teacher keeps a copy of the passage in front of her/him and marks any uncorrected errors. The teacher marks the place the student reached after 60 seconds. The teacher then reads the text aloud as the student follows along silently. If the student read the text with few errors, they can finish the passage silently on their own. At the end of the reading, the teacher takes the passage away and asks the student to do a retelling. The assessment is finished and ready to be scored.
Scoring guides are provided for each area in the assessment. There is a procedure for figuring out word recognition accuracy, a chart for measuring a fluency reading rate, and a scale for determining fluency through expression. In addition, a rubric is available for figuring comprehension.

The 3-Minute Assessment is an evidence-based assessment for classroom teachers. It gives valuable information to collect information for research on the link between fluency and comprehension. According to Rasinski (2003), “Oral reading allows you to gain a detailed picture of how students approach and deal with text” (p. 176). As has been said before, comprehension is the goal of reading. Even though fluency is not comprehension, it is necessary for comprehension. By teaching fluency and assessing oral reading, teachers can be successful in indirectly improving the comprehension skills and overall reading proficiency of their students.

Miscue Analysis

In 1969, Goodman conducted an extensive study of oral reading miscues. He found that all expected and unexpected responses to text, or miscues, are “cued” by thoughts and language of the reader, who attempts to construct meaning from the text. As a result of Goodman’s (1969) research, it became clear that miscued words are not random. Using his psycholinguistic perspective, Goodman argued that during the act of reading, a reader attempts to construct meaning through the integration of three information systems: semantic, syntactic, and graphophonic “cueing” systems at the same time (Goodman, 1969). “Semantic” or meaning cues rely on a reader’s schema, or prior knowledge and experience. “Syntactic” or structural cues rely on the reader’s knowledge of grammatical structure in words and sentences. “Graphophonetic” or visual cues rely
heavily on a reader’s knowledge of phonics, or sound symbol relationships. As a reader uses these cueing systems within a particular text, he/she predicts meaning within the text. Proficient readers then confirm those predictions by monitoring their accuracy (Weaver, 2002). Weaver (2002) also suggested that this psycholinguistic reading perspective as a reader-centered constructive process of meaning making is widely accepted today.

While attempting to construct meaning using the semantic, syntactic, and graphophonic cueing systems, readers’ predictions will sometimes result in “miscues” (Goodman, 1969, Weaver, 2002). These miscues may be in the form of an omission, substitution, or insertion of words. In addition, the prediction-confirmation process may result in a reader’s self-correction of a miscue. Miscue analysis also takes the position that expected responses and miscues are logical. For example, a reader may miscue by identifying the wrong word but the substituted word may not have altered the meaning of the passage. So, the critical difference among readers is in the quality of the miscues (Weaver, 2002). Understanding how miscues relate to expected responses allows educators to understand what cues the student uses, ignores, or omits in the reading process (K. S. Goodman, 2003e; McKenna & Stall, 2003).

Miscue analysis may lead to significant insights about how reading is developing in a student and indicate what type of instruction a student may need to support his or her reading development (McKenna & Stall, 2003). While looking at major findings in miscue analysis research, McKenna and Stall (2003) identified key insights regarding the miscue analysis process. First, substitutions become more common as children mature. Similarly, substitutions eventually have a greater phonics resemblance to the actual word.
Second, poor older readers and beginning readers rely heavily on context. Third, repetitions can be a sign of comprehension monitoring. Therefore, the amount of information collected from miscue analysis can determine how effectively readers use language systems and reading strategies to construct meaning (Martens, 2002, Weaver, 2002).

**Limitations of Current Fluency Assessments**

Since the National Reading Panel (2000) named fluency as one of the five components of a balanced reading program, there has been an overemphasis in many schools on developing the oral reading indicators of rate and accuracy without an emphasis on developing comprehension (Applegate et al., 2009). Reading rate and accuracy is considered a common way of measuring reading fluency in many fluency assessments. Reading rate is not the only component of fluency; however, in many reading fluency programs rate is the only aspect of fluency that is considered important (Rasinski & Hamman, 2010). These researchers elaborate that reading fluency has become a “speed reading contest” (p. 26) as the instructional emphasis to increase student achievement in fluency has been to increase reading speed in elementary students. Teachers value this speed as measure of reading achievement. As a result, norms in reading rate have risen recently, but rate in overall reading achievement in elementary students have not increased as much (NAEP, 2007). Therefore instruction on increasing reading rate does not always translate into better reading (Rasinski & Hamman, 2010).

A limitation of many fluency reading assessments is they do not address all three components of reading fluency. Reading fluency assessments need to be designed to assess rate, accuracy, and prosody in reading fluency. In addition, if reading fluency is
the critical link between word recognition and comprehension, and if all state assessments require some level of thoughtful response from readers, then reading fluency assessment must also incorporate a comprehension component. A number of standardized fluency assessments have been developed that overlook both prosody and comprehension features such as Diagnostic Indicators of Basic Literacy Skills (DIBELS, Good & Kaminski, 2002). DIBELS includes four subtests: Letter Naming Fluency, Initial Sound Fluency, Phonemic Segmentation Fluency, and Passage Reading Fluency. Results from these tests might indicate a student lacking in one or more areas and instruction to remedy the situation would be to teach skills in isolation – something Allington (2003) cautioned against. Another danger of using such common assessments of oral reading fluency as DIBELS is that assessments of fluency without comprehension are “potentially misleading and damaging” (Applegate et al., 2009, p. 520). When programs of instruction and assessments, such as DIBELS, separate fluency and word recognition from comprehension, the results can be detrimental to young readers (Allington, 2006; Pearson, 2006; Samuels, 2006).

There are limitations to fluency assessment that should be addressed by educators. Recent thinking suggests that fluency and comprehension be developed together simultaneously so that the reciprocal relationship between them becomes automatic to readers. Prosody and comprehension, which may not be a part of fluency instruction and assessment, need to be included in both fluency instruction and assessment. “A literate person is one who derives meaning, not speed, from the printed word” (Rasinski & Mamman, 2010, p. 26).
Summary

Educational experts throughout history have consistently recognized fluency as a key element in effective reading instruction. Fluency practices in recent years have been dominated by assessments focusing on reading rate only and an emphasis on teaching fluency by teaching students to read fast. Therefore it is critical that effective fluency practices are identified and matched with assessments that include all components of fluency: automaticity, accuracy, prosody, and comprehension. Effective oral reading strategies utilized during a fluency development lesson can provide students with the appropriate, authentic fluency instruction that will make a significant difference in their fluency as well as their comprehension development.

Given what is now known about fluency, fluency is a vital link in the reading chain. When ignored, it might actually be the missing link in reading comprehension. Understanding fluency, what strategies can be used to teach fluency, and how to assess fluency, are all instrumental in insuring that students receive quality instruction. That quality instruction is part of a comprehensive reading program leading to the ultimate goal of reading, comprehension. Therefore, the repeated use of the Fluency Development Lesson in classrooms to improve both fluency and comprehension supports what educators know about instructional practices and reading development. In conclusion, the FDL and subsequent student reading fluency and comprehension behaviors as measured by the 3MRA, will give more in-depth insights into how comprehension develops in relation to fluency development.
CHAPTER III

METHODOLOGY

This study was designed as a semester-long quantitative study. The purpose of the study was to determine how fluency and comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). Specifically, the researcher looked for growth patterns from the beginning of the instructional intervention, and the relationship between oral fluency scores and comprehension retelling scores generated for each student. In this quasi-experimental study, the research represented sought to determine the strength between two variables. Further, the variables being analyzed were students’ oral reading fluency and retelling comprehension abilities. This chapter describes the methodology used in the study, the population and the setting, as well as how the data were collected and analyzed.

Purpose of the Study

The purpose of the study was to look at the growth patterns of oral reading fluency and reading comprehension through the lens of developing readers in a real classroom setting. Current theory and practice regarding reading instruction supports using research-based practices to teach oral reading fluency skills to students, yet there are little data available from classroom studies. Therefore, it is important that this topic be explored. Results of this study may demonstrate the potential use of the Fluency
Development Lesson in elementary classrooms as a way to improve both fluency and comprehension scores of students.

**Research Questions**

The following questions guided this quantitative study:

1. When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?

2. When provided daily use of The Fluency Development Lesson in a second grade classroom, do fluency skills change as measured by words correct per minute rates and word recognition accuracy?

3. When provided daily use of The Fluency Development Lesson in a second grade classroom, which multidimensional fluency skills develop as measured by expression and volume, phrasing and intonation, smoothness, and pace.

4. Is there a correlation between oral reading fluency and retelling comprehension?

**Null Hypotheses**

1. There is no statistical significant change in retelling comprehension skills with regular use of The Fluency Development Lesson in a second grade classroom as measured by a retelling comprehension rubric.

2. There is no statistical significant change in the fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by word recognition accuracy.
3. There is no statistical significant change in the multidimensional skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by words correct per minute.

4. There is no statistical significant change in the multidimensional skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by expression and volume.

5. There is no statistical significant change in the multidimensional skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by phrasing and intonation.

6. There is no statistical significant change in the multidimensional skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by smoothness.

7. There is no statistical significant change in the multidimensional skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by pace.

8. There is no statistical significant correlation between oral reading fluency retelling comprehension.

**Design of the Study**

An experimental quantitative research design addressed the problem, purpose, and questions of this study. Experimental research designs involve researcher intervention as a common feature. The intervention, such as an educational program or teaching method, is introduced by the researcher. The researcher then observes the reaction of the participants to the intervention. "The experiment is the most powerful quantitative
research method for establishing cause-and-effect relationships between two or more variables” (Gall et al., 2007, p. 379).

A quasi-experimental design (Campbell & Stanley, 1963; Gall et al., 2007), an experimental design that lacks random assignment of participants, best suits the purpose of this study and can provide useful knowledge for this study. Random assignment of research participants in quantitative research strengthens the internal validity of the experimental research (Gall et al., 2007). However, random assignment is not always possible in classroom field studies. Campbell and Stanley (1963) referred to experimental studies that do not involve random assignments of research participants as quasi-experiments. In contrast, true experimental studies involve random assignment of participants to treatment conditions.

According to Harris and Hodges (1995), most educational research is quasi-experimental in design due to the complexities of the teaching-learning situation. Specifically, the nonequivalent control-group design (Gall et al., 2007), the most commonly used quasi-experimental design in educational research, was used in this study. In this design, in addition to the nonrandom assignment of research participants, the participants take a pretest and a posttest. First, a pretest is administered measuring a dependent variable. Next, the experimental treatment is implemented. Last, a posttest is administered measuring the dependent variable again. The pretest and posttest scores are compared to determine the effects of the experimental treatment.

In addition, according to Gall et al. (2007), in educational research the most commonly used quasi-experimental design is the nonequivalent control-group design. The essential features of the nonequivalent control-group design are administration of a
pre- and posttest and nonrandom assignment of research participants. All participants receive the experimental treatment and there is no need for a no-treatment control group.

Using this quasi-experimental design, the researcher collected data by completing assessments three times during the semester at two-month intervals. First, the students completed pretests to measure fluency and comprehension scores. Second, the students completed mid-semester tests to measure fluency and comprehension scores. Third, at the end of the semester, students were given posttests to measure fluency and comprehension scores. These scores were compared and contrasted using the administered instrument.

As is typical in experimental design, the data are collected before (pretest), during and after (posttest) the experimental treatment. The use of frequent measurements provides a clearer description of the students’ responses to the treatment. Furthermore, according to Gall et al. (2007), the more measurements of the dependent variables that are available, the more powerful the statistical significance. In addition, because of the need for repeated measurement, the measurement procedure needs to be standardized using the same environmental conditions, the same observers, and the same directions to the participants.

The Fluency Development Lesson

In order to provide targeted fluency instruction as the experimental treatment, this study used the Fluency Development Lesson (Rasinski et al., 1994), a widely recognized and research-based instructional framework for fluency development, to analyze its impact on the reading comprehension of students in a second-grade classroom. The Fluency Development Lesson (FDL) incorporates effective instructional skills and
strategies that have been shown to foster fluency development (Rasinski & Zimmerman, 2012; Reuzel, 2006). Moreover, as the exploration of the FDL on the oral reading fluency and reading comprehension of these second grade students was analyzed, it looked closely at the relationship that emerged between reading fluency and comprehension. This study therefore provided a statistical description of how regular use of the FDL develops fluency and comprehension skills of second grade students.

The researcher implemented the FDL with the 22 students in her second grade classroom daily from September through January. The Fluency Development Lesson (FDL), created by Rasinski et al. (1994), incorporates instructional strategies that have shown to improve fluency development. Given poetry’s natural rhythm, short text, and lively nature, Rasinski et al. (1994) suggested using it to implement the FDL. The FDL combines several aspects of effective fluency instruction in order to maximize students’ reading in a relatively short period of time. The FDL is designed to supplement the regular reading curriculum. The teacher makes copies of brief passages, usually poems of 50-150 words for each child. The teacher also makes a transparency or poster of the text. The poetry used in this study was both fiction and nonfiction in nature and at a second grade reading level. The first day the teacher introduces the poem and reads it several times as the students follow along on the poster or by using their own personal copies. A discussion ensues about the meaning of the poem and the poet’s purpose and style. The students locate any rhyming words, onomatopoeias, personification, use of alliteration, or other reading skills deemed necessary to reinforce and enhance the repeated reading activities and comprehension strategies embedded in the FDL.
Next, the students read the text chorally several times. The teacher creates variety by having students read different verses or portions of the text in groups. While the students are reading aloud the poem, the teacher has the opportunity to listen and analyze their misreadings. Cunningham and Allington (1994) noted, “It is these misreadings that allow teachers a ‘window into the mind’ of the reader. It is in responding to these misreadings that teachers have a chance to coach children into strategic reading” (p. 47).

The following day, the students may listen to the teacher read the poem again before they divide into pairs, find a quiet spot, and practice reading the poem with their partners. The partner’s job is to follow along in the text, provide help if necessary, and give positive feedback to the reader. Then the students regroup and the teacher asks for volunteers to perform the poem. Individuals, pairs, and groups perform the poem for the audience.

After having read the poem for several days, the students take it home to read for their parents or other family members. The parents are asked to listen to their child read as many times as they would like and to praise their child’s efforts. It is important for students and parents to engage in dialogue and activities in order to enhance their child’s literacy development (Rasinski, 2001).

The researcher modified the FDL by incorporating written activities. The students complete a writing component on the back of the poem. Taberski (2000) recognized the importance of reading reflection and encouraged teachers to incorporate opportunities for their students to respond, in writing, to poetry. This opportunity allows students to “highlight favorite parts, relating what they’ve learned to their lives,
summarizing the central theme, and comparing the book (or poem) to others they’ve read” (Taberski, 2000, p. 171).

Finally, teachers are encouraged to use enrichment activities to continue to motivate students to read the poem. The students can become actors and they read the poem using different voices and emotion. The teacher can tape record readers reading the poem. The teacher can play the tape and students can guess the mystery reader. Or the students can self-assess their reading on the tape using a fluency checklist or rubric.

As a culminating activity, the students celebrate their literacy accomplishments with a poetry party. Each student can choose a particular poem to read for an audience of students, parents, and administrators. Students can also write and perform their own poems to share and act out. The students can create costumes or props that coincide with the poem. Cunningham and Allington (1994) stated, “Children who are successful at becoming literate view reading and writing as authentic activities from which they get information and pleasure, and by which they communicate with others” (p. 2).

**Internal Validity in a Quasi-experimental Study**

One weakness in a quasi-experimental approach rests when individuals are not assigned randomly to groups (Gall et al., 2007) along with the subjectivity and integrity of the researcher (Merriam, 1998). As a participant-observer, the researcher’s subjectivity was inevitable. However, this subjectivity was balanced by the validated instruments used to measure students’ fluency and comprehension scores. In addition, the number of sessions added to the credibility of this study. According to Creswell (2003) and Merriam (2009), researchers who spend a prolonged time in the field are often
more cognizant of the experiment and able to articulate details that add to the study’s credibility.

A second threat is to internal validity when using a nonequivalent control-group experiment. The possibility is always there that rather than the treatment effect, group differences on the pretest and posttest are due to preexisting group differences (Gall et al., 2007). According to Stevens (2002), differences in IQ and motivation can affect scores even though all participants receive the same treatment. However, analysis of covariance, a form of analysis of variance, is used to address this problem. Analysis of covariance greatly reduces the effects of initial group differences by considering the dependent variables one at a time, thus making adjustments to the posttest means. Further, in repeated measure designs, due to blocking on each subject, “variability among the subjects due to individual differences is completely removed from the error term” (Stevens, 2002, p. 492).

Maturation and statistical regression may also have hindered the internal validity in this study. The students in the study were likely to show some degree of progress throughout the course of the program regardless of the intervention. Also, some statistical regression (Gall et al., 2007) may have occurred when students who scored at either extreme on the pretests are more likely to have regressed towards the mean on the posttests. Even so, administering a pretest and posttest are central to creating conditions minimizing the effects of outside variables while observing changes in a quasi-experimental study.
External Validity in a Quasi-experimental Study

According to Gallet al. (2007), external validity is the extent to which an experimental study can be applied to settings and individuals beyond those studied. For example, it can be difficult to generalize findings from an accessible, nonrandom population to a larger, target population. The sample in this study involved a group of second grade students in one specific location. In this study, universals cannot be taken from the particular, so findings from this study cannot be generalized (Merriam, 2009). Therefore, the findings in this study can only be generalized to the population from which the sample was taken.

Another factor influencing external validity is the extent to which one set of environmental conditions can be generalized to other sets of environmental conditions. In order to allow for this, the researcher must describe the experimental treatment in great detail so that subsequent researchers can reproduce the experimental treatment. The experimental treatment in this study was the FDL. The researcher has described the FDL in detail so that other researchers could produce it again.

Since external validity is the extent to which findings in an experimental study can be generalized to other settings, in order to strengthen external validity, the quantitative design selected should be experimental in nature and researchers should identify the real life educational setting to which results are generalized. Snow (1974) believed that experiments should be representative of the natural environment and of research participants as active learners. This study took place in a real life educational setting with research participants as active learners.
Research Setting

This study was conducted in a suburban school district located in a Midwestern state. The district had four elementary schools including grades kindergarten through grade five, a middle school including grades six through eight, and a high school including grades nine through twelve. The average daily enrollment for the district was 5,728 students. The racial/ethnic composition of the school was 1.8% black, 3.7% Asian or Pacific Islander, 1.2% Hispanic, 2.1% multiracial, and 91.1% white. The number of students considered to be economically disadvantaged was at 17.5%. The number of students with limited English proficiency was 1.1% and 9.5% of student population were identified as having disabilities.

Data for this study were collected in a second-grade classroom in one of the four public elementary schools in the district. The total enrollment of this K-5, suburban, elementary school was approximately 600 students with 100 students in the second grade. Some cultural diversity was represented by the student population in the school. The population was mostly white, but there were significant amounts of ELL, black, and Asian subgroups. The majority of the school’s population was middle class but there are students of all socioeconomic levels at varying academic abilities.

One group of 22 students was targeted for this study. There were 14 girls and 8 boys in the class. The number of students considered ODE (Ohio Department of Education) targeted for low levels of reading proficiency was approximately 33%. This percentage was based on a Grade Two Reading Screener, developed by the state of Ohio, and administered to the students prior to second grade. One student was on an academic
IEP for reading and math and one student was an English Language Learner (ELL). Approximately 20% of the students were considered economically disadvantaged.

This elementary school received an Excellent with Distinction designation from the Ohio Department of Education in 2013. It has also met the state’s Adequate Yearly Progress (AYP) in all areas. AYP is a federally required measure reflected in goals set by the state for achievement levels in math and reading proficiency and participation, graduation rates, and attendance rates. In addition, this school was recognized at the federal level by the United States Department of Education as a Blue Ribbon School in 2009. The Blue Ribbon School Program honors schools that are high performing or have made dramatic gains in student achievement to high levels, especially among disadvantaged students. The school received this honor due to its high student achievement levels.

**Participant Selection**

Twenty-two second grade students were targeted for this study. The range of these second-grade students’ age was between 7 and 9 years old. There were 14 girls and 8 boys. This teacher-researcher used her own second grade classroom. The teacher in this classroom had her master’s degree in curriculum and instruction and was currently a doctoral student in the department of curriculum and instruction specializing in literacy. She had 25 years of teaching experience, 20 of which were at the second grade level. Permission for the students’ participation came from The University of Akron’s Institutional Review Board for the Protection of Human Subjects (Appendix A), the administration of the school district, and building principal (Appendix B). The
participants in the study were given pseudonyms to protect their privacy and the confidentiality of the study.

This sample was considered purposeful, nonprobability sample, or convenience sample. In a convenience sample, “the researcher selects a sample that suits the purposes of the study and that is convenient” (Gall et al., 2007, p. 175). Convenient, nonprobability, purposeful sampling are most prevalent when studying individuals in their natural environment and when serving to test an educational program. Consequently, this sampling strategy could be useful in studying educational programs and related phenomena. The educational program used was the Fluency Development Lesson and its related phenomenon was how use of this lesson improved a student’s fluency enough to also improve reading comprehension. Neither one of these samples accurately represented a defined population, but the intent was to achieve an in-depth understanding of the individuals or group selected. The group selected was the teacher/researcher’s second grade classroom. This quantitative study looked at all 22 students at three data points in the semester. A pre, middle, and post measurement were administered to document change as a result of instruction.

In quantitative research, it is necessary to compute population sample size using power, effect size, and statistical analysis (Cohen, 1992). Statistical power analysis looks at the relationships among sample size (N), effect size (ES), and power statistics. In this study, \( N = 22 \), \( p = .10 \), and power of .80 with large effect size. The sample size to achieve such a benchmark is 22. This sample size, \( p \)-value reference, and point error, sufficient for Type 1 Level error, suggest a large effect size. These power statistics justify sample size is large enough for this study.
**Fluency Development Lesson (FDL) – The Experimental Intervention**

The researcher implemented the FDL with the 22 students in her second grade classroom daily from September through January. In order to provide targeted fluency instruction as the experimental treatment, this study used the Fluency Development Lesson (Rasinski et al., 1994), a widely recognized and research-based instructional framework for fluency development, to analyze its impact on the reading comprehension of students in a second grade classroom. The Fluency Development Lesson (FDL) incorporates effective instructional skills and strategies that have been shown to foster fluency development (Rasinski & Zimmerman, 2012; Reuzel, 2006). Moreover, as the exploration of the FDL on the oral reading fluency and reading comprehension of these second grade students was analyzed, it looked closely at the relationship that emerged between reading fluency and comprehension.

**Conducting the Fluency Development Lesson**

The first day the teacher gathers the students around the poem. The teacher introduces the poem and reads and rereads the poem while the students follow along with their own personal copies. The class discusses the content of the poem, the meaning of the poem, and the poet’s purpose and style. The students locate any rhyming words, onomatopoeias, or use of alliteration. They also discuss the quality of the teacher’s reading.

The next day, the class gathers around the chart poem again. This time the students read the poem chorally a few times. The students might also read different verses or portions of the text in groups. While the students read aloud, the teacher has the opportunity to listen and analyze their misreading. The class discusses what a fluent
reader looks and sounds like. The class talks about the three characteristics of a fluent reader: accuracy, automaticity, and prosody.

The students gather around the chart poem again the following day. This time the teacher creates a variety of readings for the students. They might read by boys and girls, stanzas, lines, etc. The class discusses words from the poem that may cause difficulties, sort words phonetically, and/or add words of interest to a word bank.

The following day, students are each given a copy of the poem to add to their poetry notebook. They listen to the teacher read the poem again before the class divides into partners and the partners find a spot to practice reading the poem to each other. One student reads the poem three times to the other partner before switching. The partner who is not reading needs to follow along and help when needed. The students then regroup and the teacher asks for volunteers to perform the poem. Individuals, pairs, and groups perform the poem for the audience. The students are then given their homework assignment. They will take the poem home in their poetry notebook and read it to a “Lucky Listener”. The listener will sign the “Lucky Listener” sheet. The student will then write a response to their poem on the back. (It is important for the students to respond to poetry, so a writing component to the FDL with a focus on comprehension needs to be included.) Taberski (2000) recognized the importance of reflecting on reading and encouraged teachers to provide opportunities for their students to respond, in writing, to poetry. They return their homework assignment the next day.

Last, the teacher collects and responds to the homework assignments. A child is asked to perform the poem. The child is taped reading the poem. The quality of the read
is discussed. The reader also self-evaluates his or her reading after listening to the taped reading.

For some culminating activities, the teacher might plan a poetry party and ask for visitors to come and listen to the students perform. Students can also write their own poetry and perform for a poetry celebration at the end of the year.

Data Collection

In quantitative research, evidence can come from a variety of sources. To gain an understanding of how comprehension literacy skills develop by providing regular use of the Fluency Development Lesson (FDL) in a second grade classroom, evidence was collected from many sources throughout the semester. The following data collection sources were employed in the study: assessments including the results of the 3 Minute Reading Assessments: Fluency, Word Recognition, and Comprehension (3MRA, Rasinski & Padak, 2005).

Data were collected by the researcher on each individual student using the variables, oral reading fluency, and retelling comprehension. The primary measure used in the study was the 3MRA, which was administered in September, November, and January. This measure was analyzed to generate the following scores: (a) word recognition accuracy (decoding), (b) automaticity in reading fluency, (c) expression in reading fluency, and (d) retelling comprehension.

Researcher-generated Documents

The researcher-generated documents in this study included fluency probes, reading passages, and an oral reading fluency scoring guide (Appendix C). These
documents will be incorporated into the 3-Minute Reading Assessments described in the following paragraphs.

Assessments

3-Minute Reading Assessments: Word Recognition, Fluency, & Comprehension assess a student’s ability to read fluently and accurately. The purpose of the 3-Minute Reading Assessments: Word Recognition, Fluency, & Comprehension (3-MRA, Rasinski & Padak, 2005) is to measure the fluency and comprehension development of students in grades one through four. Rasinski and Padak (2005) developed the 3-MRA to assess all of the components of fluency and comprehension addressed in the FDL. The assessment results enable researchers and classroom teachers to determine how well each student is able to read grade-level texts. It is a way of obtaining valid diagnostic information about students’ reading achievement. The authors of this instrument recommend that researchers assess individual students four times per year, at regular intervals. The instrument includes four different passages, labeled A, B, C, & D, for the students to read. The passages range in difficulty, with the fourth passage being the most challenging. Therefore, this particular passage is appropriate for assessment in the spring.

The 3-MRA is intended to help classroom teachers or researchers determine those students who are not reading at grade-level, and who are most likely candidates for reading intervention. The instrument can be used “to measure a child’s progress and identify areas of strength and concern” (p. 6). Rasinski and Padak (2005) offered instructional suggestions for developing word recognition, fluency, and comprehension
skills. The authors do not suggest that the results from this instrument, alone, determine a reading letter grade or the promotion or retention of a student.

The authors designed the 3-MRA to be administered to individual students. Data were collected on each student’s oral reading in four areas: (a) word recognition accuracy (decoding), (b) automaticity in reading fluency, (c) expression in reading fluency, and (d) retelling comprehension. Word recognition accuracy indicates the student’s ability to correctly read the words in the passage. The teacher/researcher chose the text provided, depending on the grade level and month of year, for the student to read aloud. The student was given one minute to read aloud the text. While the student read, the teacher followed along with the student’s personal copy, and the teacher completed a running record of the student’s errors and self-corrections. If the student paused for more than three seconds while attempting to decode a word, then the teacher was instructed to provide the word for the student and indicate this on the running record sheet.

As soon as the student finished reading aloud the text, the teacher completed the assessment rubrics provided by the authors of this instrument. First, the teacher recorded the number of words the student read correctly, including any words that the student may have self-corrected. This number was divided by the total number of words that the student was able to read in one minute. This was the percentage of words read accurately. A student whose score ranged from 99% to 100% was reading at an independent level. A score falling between 92% and 98% indicated an instructional level. A score below 92% indicated that the student was at a frustration level, and the text is too challenging for the student.
The authors also provided a Reading Fluency-Automaticity table that indicated the number of words that a student should be able to read correctly depending upon the grade level and time of the year. Any words that a student self-corrected were counted as words read correctly.

After the student read aloud, the teacher used the Multidimensional Fluency Scale, provided to rate each participant reader based on the four criteria found in the scale. The criteria include Expression & Volume, Phrasing & Intonation, Smoothness, and Pace. Each student may earn a score of one through four based on the rubric provided, with a score of four as the optimum score in each category. Therefore, a student could earn a total score as low as four or as high as sixteen. The authors (Rasinski & Padak, 2005) proposed that a student earning a score less than three on any dimension in the scale, or a total score less than nine, may require reading intervention.

Last, a comprehension score indicates the student’s ability to remember what was read in the passage in relation to the quality of details recalled about the main idea and supporting details, as well as connections made to other texts or the student’s world outside the text. If the student did not finish reading the entire text during the one minute read aloud, the teacher allows the student to read the remainder of the text. The teacher sits quietly while the student completes the reading task. This step is modified from the original 3-MRA where the teacher reads the passage aloud from the beginning, while the student follow along silently. Then, the researcher removes the text from the student’s view and instructs the student to retell the events from the story. The teacher rates the recall on the comprehension rubric provided in the instrument. The teacher is permitted to probe the student for information if the student is reluctant to retell the events as they
occurred in the story. After the student recalls as much information that she can remember, the teacher rates the retelling on a scale on one to six, with a score of six being the optimum score.

The teacher records each student’s scores on an Individual Record Sheet. This recording sheet is used throughout the school year for each of the four forms of the assessment. A Class Record Sheet, which enabled a teacher to record all of the scores for all of the students assessed, is also provided for the entire school year.

Rasinski and Padak (2005) provided rubrics, scales, and scoring tables as well as a narrative description that details how teachers should interpret the results of the instrument. The Word Recognition Accuracy score is obtained by dividing the number of words that a student read correctly by the number of total words that a student read in one minute. This percentage of words read correctly is used to determine whether that particular text was at the student’s instructional level or independent reading level. The authors assumed that a student who was developing at a typical rate will read a grade-level text at an instructional level at the beginning of the school year and at an independent level at the end of the school year. The authors included a table, which listed the target reading rates of students in grades one through eight. Three different rates for each grade level are provided for fall, winter, and spring. Students who are reading below the instructional level in spring may benefit from further instruction in fluency development. If a student read quickly but did not adhere to punctuation or appropriate expression, then that student may also require additional fluency instruction.

All 22 second grade students participated in daily Fluency Development Lessons from August of 2014 through January of 2015. Using the 3 Minute Reading
Assessments: Word Recognition, Fluency & Comprehension, the classroom teacher administered the assessment in September, November, and in January. All tests measured (a) word recognition accuracy (WRA), (b) fluency (expression), (c) automaticity or words correct per minute (WCM), and (d) comprehension. The researcher chose the 3 Minute Reading Assessments as the oral reading assessment tool for this study because the passages make for a brief and easy assessment where the feedback is immediate.

The scores for the 3 Minute Reading Assessments: Word Recognition, Fluency & Comprehension (Rasinski & Padak, 2005) were generated by a second grade teacher. The 3-MRA was administered three times during the school year: (a) Form A in September, (b) Form B in November, and (c) Form C in January. While students read and recalled the passage, this researcher monitored their performance for fluency, word recognition accuracy, and comprehension. Using a script of verbal instructions (Appendix D), the students were asked to read a second grade-level passage and asked to recall what they remembered from the passage.

The template for scoring in the 3-MRA (Rasinski & Padak, 2005) provided a rubric for measuring the four main areas of oral reading: (a) word recognition accuracy, (b) fluency through automaticity or rate, (c) fluency through expression, and (d) comprehension. Standardized national benchmarks determined the scores for word recognition accuracy and automaticity. Word recognition accuracy was calculated by dividing the total number of words read correctly by the total number of words read. This number determined the “Independent Reading Level” (99% – 100%), “Instructional Reading Level” (92% - 98%), or frustration level (below 92%) of the student.
A student’s reading level for fluency automaticity was calculated by counting the number of words a student read correctly for sixty seconds. Self-corrections were counted as words read correctly. The total number of words read correctly was compared to what a typical student in grade two would read in the fall (30-80 words per minute), winter (50-120 words per minute), and spring (70-130 words per minute).

Fluency through expression was measured according to a rubric (Appendix C). A Multidimensional Fluency Scale (Zutell & Rasinski, 1991), broken down into four components, was used to measure fluency through expression. Those four components were: (a) expression and volume, (b) phrasing and intonation, (c) smoothness, and (d) pace. Each of these parts was rated on a scale of one through four according to the criteria established in the rubric, then totaled for a score out of a possible 16 points.

Comprehension was measured after the student completed the 60-second oral reading and after the student finished reading the passage. (The teacher/researcher modified the oral reading from the original directions in the FDL. Originally, after the 60 second oral reading, the passage was to be removed and the instructor was to read aloud the remainder of the passage. For the purpose of this study, the student read to the end of the passage.) The passage was then removed from view and the student was asked to give a retelling of the passage. Retellings involve a response to a story that allows the reader to “relive, rehearse, modify, and integrate their interpretations of the author’s message into their reality” (Y. Goodman, Watson, & Burke, 1987, p. 44). After the student told as much as he/she could remember from the passage, the student was assigned a score between one and six using a rubric with graduated criteria (Appendix C). For example, a student would receive a score of one if there was “no recall or minimal
recall of only a fact or two from the passage” (Rasinski & Padak, 2005, p. 12).

Conversely, as student would receive a rating score of six if the “recall was a comprehensive summary of the passage, presented in a logical order and/or with a robust set of details, and included a statement of the main idea. In addition, Rasinski and Padak (2005) required that “students also made reasonable connections beyond the text, such as to his or her own personal life or another text” (p. 12). One or two points were assigned if the student recalled a detail or two. A score of three or four was assigned if the student included the main idea with at least four or five details. A score of five or six was assigned if the student responded with many details in logical order along with the main idea. Although a score of three or below might indicate inadequate comprehension of the text, this score is not unusual for students at the beginning of the school year. By spring, those students who are still scoring at the inadequate level may require further assessments and interventions. All the data results collected from the 3-MRA were compared and analyzed.

Furthermore, Rasinski (2004) argued that while assessments are a critical part of classrooms, assessments are not a substitute for instruction. Time spent administering assessments takes away from time allotted for instruction, so assessments should be easily administered, scored, and interpreted or teachers are less likely to use them. The 3-Minute Reading Assessments were developed to reflect the components of a comprehensive fluency program. In addition, the amount of data collected within a short period of time can be an effective, time saving assessment for elementary classrooms.
Validity of the 3-Minute Reading Assessment

Validity in an assessment tool indicates that the assessment tool does what it says it does. Therefore, a valid test measures what it is supposed to measure (Salkind, 2008). In order to establish content validity, Rasinski communicated (Kulich, 2009) that the 3-Minute Reading Assessments are based on Jerry John’s Basic Reading Inventories (2005), normative tests used to assess students’ reading behaviors. Reading inventories have been used by classroom teachers to determine instructional reading levels of their students. Instructional reading levels are in contrast to frustration and independent levels and are used to determine which texts students can read to maximize learning. A widely used criterion of 95% accuracy in word identification has been used to establish instructional reading levels (Fuchs et al., 1982).

In addition, information on fluency assessment published in the Pacific Regional Educational Lab (PREL; Rasinski, 2004), supports the components of the 3-MRA. In that document, Rasinski (2004) explained that fluency is multidimensional and comprised of components necessary for comprehension. Each component of fluency should be taught and assessed often in elementary classrooms, but should also reflect the nature of fluency instruction for those assessments to be valid and reliable. In addition, due to the correlation between fluency and reading proficiency, the fluency assessment should relate to other reading proficiency assessments.

Gall et al. (2007) cautioned that content level validity is important when selecting tests involving instructional methods. Therefore, it is advisable to select tests with content-valid interpretations. The 3-Minute Reading Assessments were developed to reflect the components of a comprehensive fluency program.
Reliability of the 3-Minute Reading Assessment

Reliability refers to whether or not research results can be repeated if the same study was done using the exact same procedures (Gall et al., 2007; Merriam, 2009). In quantitative research, reliability is whether a measurement tool measures something consistently (Salkind, 2008). Intertester reliability, an approach to estimating a test’s internal consistency, examines the level of agreement between different scorers of a test (Gall et al., 2007). For purposes of this study, the researcher and a second grade colleague both administered the 3-MRA and agreed on the scoring. In addition, the scores were statistically computed and analyzed using repeated measure and the Pearson r correlation coefficient.

Research Agenda

The research questions, the tools used to address the research questions, how the tools answered the research questions, and the statistical method used to analyze the data collected, are specified in Table 1.

Table 1
Research Agenda

<table>
<thead>
<tr>
<th>Question</th>
<th>Tool</th>
<th>How Tool Answers Questions</th>
<th>Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?</td>
<td>The 3-Minute Reading Assessments: Word Recognition, Fluency &amp; Comprehension Subscale: Comprehension Rubric</td>
<td>The Comprehension Rubric included in the 3-MRA rated the student’s ability to recall information and understand a text through retelling.</td>
<td>Repeated Measure Analysis of Variance</td>
</tr>
</tbody>
</table>
Table 1

Research Agenda (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Tool</th>
<th>How Tool Answers Questions</th>
<th>Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>When provided daily use of The Fluency Development Lesson in a second grade classroom, do overall fluency skills change as measured by words correct per minute and word recognition accuracy?</td>
<td><em>The 3-Minute Reading Assessments: Word Recognition, Fluency &amp; Comprehension</em> Subscale: Target Reading Rates by Grade Level</td>
<td>The Target Reading Rates by Grade Level in the 3-MRA measured the Reading Fluency – Automaticity – reading rates; Word Recognition Accuracy percentage was determined by dividing correct words by total words;</td>
<td>Repeated Measure Analysis of Variance</td>
</tr>
<tr>
<td>What multidimensional fluency skills develop the most as measured by expression and volume, phrasing and intonation, smoothness and pace?</td>
<td><em>The 3-Minute Reading Assessments: Word Recognition, Fluency &amp; Comprehension</em> Subscale: Multidimensional Fluency Scale</td>
<td>The Multidimensional Fluency Scale included in the 3-MRA measured the following dimensions of fluency: expression and volume, phrasing and intonation, smoothness, and pace;</td>
<td>Repeated Measure Analysis of Variance</td>
</tr>
<tr>
<td>What is the correlation between oral reading fluency and comprehension?</td>
<td><em>The 3-Minute Reading Assessments: Word Recognition, Fluency &amp; Comprehension</em> Subscales: Target Reading Rates by Grade Level; Comprehension Rubric;</td>
<td>The dimensions of fluency, words correct per minute, and comprehension retelling scores generated from the 3-MRA were statistically compared to determine the strength of the correlation.</td>
<td>Pearson r correlation coefficient</td>
</tr>
</tbody>
</table>

Data Analysis

Data analysis is the complex process of analyzing and interpreting data in order to make sense of that data (Merriam, 2009). Grbich (2007) defined data analysis as the ongoing process where data are checked and tracked “to gain a deeper understanding of the values and meanings which lie therein” (p. 25). Along those same lines, Yin (2014) explained that data analysis consists of examining, categorizing, and combining evidence
to produce empirically based findings. It is in analyzing the data that research questions can be answered, the findings of a study can be reported, and the data can be explained.

In this quantitative, quasi-experimental study, the overall goal of data analysis was to describe how comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). In addition, the researcher collected and analyzed the data while making meaning from that data. Merriam (2009) explained that the researcher starts with a particular happening from documents and compares it with another happening. The students’ scores for the 3-Minute Reading Assessments: Word Recognition, Fluency, & Comprehension (Rasinski & Padak, 2005) were collected and then analyzed in order to examine any changes noted in oral reading fluency and retelling comprehension skills and determine the existence of a correlation between oral reading fluency and retelling comprehension skills on students in a second grade classroom when provided daily use of the Fluency Development Lesson from September through January.

A challenge facing researchers is to “produce high quality analyses” including all evidence collected (Yin, 2014, p. 132). Therefore, this researcher collected quantitative data provided through the results of the 3-Minute Reading Assessments (Rasinski & Padak, 2005). Establishing a relationship between oral reading fluency and comprehension was done using the 3-MRA issued to students within their second grade classroom environment. All students within the group received the experimental treatment, the FDL. The first step in analysis of this quasi-experimental study was to analyze data using pretest, mid-test, and posttest scores from the 3-MRA: Word Recognition, Fluency & Comprehension and to compute descriptive statistics on the variables. The next step in analyzing results of the experiment was to test statistical
significance of change in the mean scores of students using an analysis of variance for repeated measures.

For repeated measures, the approach for determining statistical significance of change is an analysis of variance. In repeated measures analysis of variance, participants are tested more than once on factors and the process is repeated more than once on those same factors (Salkind, 2008). This technique is called analysis of variance because “the variance due to differences in performance is separated into variance that is due to differences between individuals within groups and variance due to differences between groups” (Salkind, 2008, p. 202). A comparison is then done with the two types of variables as the differences between means are computed. This statistical technique was used to determine the oral reading fluency and comprehension pretest-posttest differences in this study, after the experimental treatment, the FDL.

Using repeated measure, the same subjects are measured repeatedly in a pretest and posttest on a variable or variables with an intervening treatment. There are several advantages to using this design. A statistical way of reducing error variance is by using repeated measure design. In repeated measure design, variables such as motivation and IQ are blocked. In blocking variables, variability among subjects because of individual differences is removed (Stevens, 2002). Also, when observing performance trends over time, repeated measure is an important design to consider. Last, fewer subjects are required for the study because the same subjects are being used repeatedly.

In addition to repeated measure design, a Pearson $r$ correlation coefficient was used to examine the relationship between the variables. According to Salkind (2008), the Pearson correlation coefficient examines the relationship between two variables
considered to be continuous in nature, such as test scores. In this study, test scores were generated using students in a second grade classroom and how they develop fluency and comprehension skills with regular use of the Fluency Development Lesson. The students’ fluency and comprehension abilities were assessed using the 3-Minute Reading Assessment. These scores were then statistically compared to determine the strength of the correlation.

In addition, the organization of the data for this study determined the existence of a correlation between oral reading fluency and comprehension among the second grade students. The Pearson’s $r$ statistical test generated a series of tables that defined the statistical relationship between the two variables. Using statistics, most specifically the Pearson $r$ correlation coefficient, the relationship between continuous variables was examined (Salkind, 2008). A relationship was determined using this information. These developments uncovered data this study was attempting to describe. Thus, this study used quantitative data to describe and explain events.

In conclusion, establishing a relationship between oral reading fluency and comprehension was done using assessments issued to students within their second grade classroom environment in this quasi-experimental study. The organization of data for this study determined the statistical significance of change and the existence of a correlation between oral reading fluency and comprehension among the second grade students. The analysis of repeated measures and the Pearson’s $r$ statistical test generated a series of tables that defined the statistical relationship between the two variables. Using statistics, specifically the analysis of repeated measure and the Pearson $r$ correlation coefficient, the relationship between the two variables was examined (Salkind, 2008) and
a relationship was determined using this information. Results of all the data collected and analyzed in this study were used to provide a statistical analysis of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students.

**Limitations of the Study**

A study’s limitations can affect its validity and reliability. Methodological limitations can occur during the sampling procedures, data collection, and data analysis (Gall et al., 2007). Limitations did occur in this study and must be taken into account. One limitation in this study was the researcher’s close relationship to the subjects, which could affect objectivity. The researcher’s bias for the FDL and the 3-MRA may have influenced the responses of the participants. Nevertheless, this teacher as a researcher’s relationship in this convenience, nonrandom sample provided not only a unique perspective, but an opportunity to achieve an in-depth understanding of the individuals or group selected on a daily basis. In addition, the measurement procedure was standardized using the same observers, the same instructions to the research participants, and the same environmental conditions each time the measurement was administered.

A second limitation was in the sampling. The sample involved a group of second grade students in one specific location. This purposeful sample was chosen, once again, to achieve an “in-depth understanding of a situation” (Gall et al., 2007). In this study, universals cannot be taken from the particular, so findings from this study cannot be generalized (Merriam, 2009). Therefore, the findings in this study can only be generalized to the population from which the sample was taken.
Summary

This chapter explained the methods to be utilized in this quasi-experimental quantitative study. The study sought to look at how comprehension literacy skills develop by providing regular use of the Fluency Development Lesson in a second grade classroom. Results of all the data collected and analyzed in this study were used to provide a statistical analysis of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students as well as define the statistical relationship between the two variables.

Participants in this semester-long study were selected using purposeful, nonrandom sampling. Approximately 22 second grade students were targeted for this study from the teacher/researcher’s own classroom. The students received fluency instruction on a daily basis using the Fluency Development Lesson from September through January and were subsequently assessed to determine how the FDL impacted the development of their comprehension literacy skills.

The data sources in this study included The 3-Minute Reading Assessment: Word Recognition, Fluency, and Comprehension. Data were collected over a period of one school semester. The results of the oral readings were analyzed using scoring rubrics for fluency (automaticity and expression), accuracy, and retelling comprehension. The researcher used triangulation and intertester reliability to increase validity and reliability. The relationship between oral reading fluency and retelling comprehension was determined using statistical analysis. The analysis of variance using repeated measure design and the Pearson $r$ correlation coefficient examined the change and relationship between the two variables. The next chapter presents the results using those methods.
CHAPTER IV
ANALYSIS OF DATA

This chapter presents results of an analysis of the data collected in this semester-long, quantitative, quasi-experimental study, which sought to investigate the fluency and comprehension skills that develop in second grade students with regular use of the Fluency Development Lesson (FDL). Specifically, the researcher looked for the growth patterns from the beginning of FDL instruction as well as the relationship between oral fluency scores and comprehension retelling scores generated for each student. The researcher’s second grade class participated in daily FDL lessons from September through January. This chapter also describes the impact of the FDL instruction on students’ literacy proficiency by looking at the strength between variables. The variables being analyzed were students’ oral reading fluency skills, including word recognition accuracy, words correct per minute, and multidimensional fluency skills, as well as retelling comprehension abilities. The fluency and comprehension retelling skills were analyzed as indicated in the results of the 3-Minute Reading Assessments: Word Recognition, Fluency, and Comprehension were given to all 22 students at the beginning, middle, and end of the semester.

To gain an understanding of how comprehension literacy skills develop by providing regular use of the Fluency Development Lesson (FDL) in a second grade classroom, evidence was collected from many sources throughout the semester. The
following data collection sources were employed in the study: assessments including the results of the 3 Minute Reading Assessments: Fluency, Word Recognition, and Comprehension (3MRA, Rasinski & Padak, 2005). Data were collected by the researcher on each individual student using the variables, oral reading fluency, and retelling comprehension. The assessment measure used in the study was the 3MRA, which was administered in September, November, and January. This measure was analyzed to generate the following scores: (a) word recognition accuracy (decoding); (b) automaticity in reading fluency; (c) multidimensional fluency skills, including expression and volume, phrasing and intonation, smoothness and pace; and (d) retelling comprehension.

In this quantitative, quasi-experimental study, the overall goal of data analysis was to describe how comprehension skills developed in second grade students with regular use of the Fluency Development Lesson (FDL). The students’ scores for the 3-Minute Reading Assessments: Word Recognition, Fluency, & Comprehension (Rasinski & Padak, 2005) were collected and then analyzed in order to examine any changes noted in oral reading fluency and retelling comprehension skills and determine the existence of a correlation between oral reading fluency and retelling comprehension skills on students’ in a second grade classroom when provided daily use of the Fluency Development Lesson in September, November, and January.

The organization of data for this study determined the statistical significance of change and the existence of a correlation between oral reading fluency and comprehension among the second grade students. The analysis of repeated measures and the Pearson’s r statistical test generated a series of tables that defined the statistical relationship between the two variables. Using statistics, specifically the analysis of
repeated measure (Stevens, 2002) and the Pearson $r$ correlation coefficient, the relationship between the two variables was examined (Salkind, 2008) and a relationship was determined using this information. Results of all the data collected and analyzed in this study were used to provide a statistical analysis of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students.

The following questions guided this quantitative study:

1. When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?

2. When provided daily use of The Fluency Development Lesson in a second grade classroom, do fluency skills change as measured by words correct per minute rates and word recognition accuracy?

3. When provided daily use of The Fluency Development Lesson in a second grade classroom, which multidimensional fluency skills develop as measured by expression and volume, phrasing and intonation, smoothness, and pace.

4. Is there a correlation between oral reading fluency and the retelling comprehension?

This chapter is organized in terms of the specific hypotheses that were explored throughout this study. Null hypotheses one, two, three, four, five, and six looked at the statistical significance of change between oral reading fluency and retelling comprehension using analysis of repeated measure. Null hypothesis number seven looked at the existence of a correlation between the two variables.
**Comprehension Retelling Results Using Repeated Measure**

Null Hypothesis 1: There is no statistical significant change in retelling comprehension skills with regular use of The Fluency Development Lesson in a second grade classroom as measured by a retelling comprehension rubric.

**Descriptive Statistics for Retelling Comprehension**

Data from the *3-Minute Reading Assessments: Word Recognition, Fluency, and Comprehension* were collected from each of the 22 students in September of 2014, November of 2014, and January of 2015. The short texts included in the 3 Minute Reading Assessments allowed the researcher to glean information about the retelling comprehension skills for each student by choosing the grade level texts that corresponded to the students’ current grade level and month. After reading the text, the student gave a retelling of the text and was scored using the comprehension rubric (See Appendix C). The scores on the comprehension rubric ranged from 1 to 6 with 6 as the highest scores. Using descriptive statistics, the data analysis of comprehension retelling showed that the mean improved consistently from 3.77 in September to 5.41 in January.

According to Stevens (2002), a widely known test available for testing within-group variability statistics and testing the multivariate null hypothesis is the Wilks’ Lambda. In repeated measure statistics, the Wilks’ Lambda sets the \( p \) value of statistical significance. The Wilks’ Lambda score for retelling comprehension showed significance at \(.000\). Because the Wilks’ Lambda \( p \) value was \(< .001\), the null hypothesis stating there is no change in the retelling comprehension skills with regular use of the FDL in a second grade classroom as measured by a retelling comprehension rubric was rejected.
Table 2

Descriptive Statistics for Comprehension, Word Recognition Accuracy, and Words Correct per Minute

<table>
<thead>
<tr>
<th></th>
<th>Retelling comprehension</th>
<th>Words recognition accuracy (percent)</th>
<th>Words correct per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S. D.</td>
<td>Mean</td>
</tr>
<tr>
<td>Wave 1</td>
<td>3.77</td>
<td>.685</td>
<td>97.82</td>
</tr>
<tr>
<td>Wave 2</td>
<td>4.23</td>
<td>.973</td>
<td>98.86</td>
</tr>
<tr>
<td>Wave 3</td>
<td>5.41</td>
<td>.796</td>
<td>99.27</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>.000</td>
<td></td>
<td>.274</td>
</tr>
</tbody>
</table>

Note. S. D. = Standard Deviation.
Sig. = Wilks’ Lambda or p value; p < .001.
Wave 1 was conducted in September. Wave 2 was conducted in November. Wave 3 was conducted in January.

Sphericity for Retelling Comprehension

The sphericity condition is important in testing the null hypothesis because when the sphericity assumption is not met, the test is considered positively biased and the null hypothesis is rejected falsely too often (Stevens, 2002). In addition, the Greenhouse-Geiser reflects the extent to which the covariance matrix deviates from sphericity. In this study, sphericity was assumed for 22 students. Also, the sphericity was assumed on all three waves in September, November, and January. The sphericity assumed was the same distributions on all three waves and showed significance at .000 as the p value was < .001. Specifically, there are two conditions for sphericity assumption. Whether you
assume or do not assume, the condition is still statistically significant. For example, when sphericity is assumed at the .000 level and the distribution of all three waves is the same, there is statistical significance. Conversely, when the Greenhouse-Geisser does not assume sphericity at .000, the Wilks’ Lambda test is still significant. Thus, the null hypothesis for question one is rejected once again on the basis of sphericity assumption.

Table 3
Tests of Sphericity

<table>
<thead>
<tr>
<th></th>
<th>Retelling comprehension significance</th>
<th>Word recognition accuracy significance</th>
<th>Words correct per minute significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sphericity assumed</td>
<td>.000</td>
<td>.004</td>
<td>.000</td>
</tr>
<tr>
<td>Greenhouse-Geisser</td>
<td>.000</td>
<td>.699</td>
<td>.000</td>
</tr>
<tr>
<td>Linear</td>
<td>.000</td>
<td>.105</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. $p$ value is significant when $p < .001$.

**Growth Pattern for Retelling Comprehension**

According to further repeated measure analysis of the growth pattern, the linear growth was significant. The growth pattern suggests that wave 2 is higher than wave 1, and wave 3 is higher than wave 2. Also, according to the SPSS data analysis, the linear growth was significant at the .000 level when $p < .001$. So it appeared retelling comprehension skills improved with regular use of the FLD.
Given the statistical significance of the above, the effect size needed to be calculated to determine the percentile of growth between each wave. The following is the formula for calculating effect size in this study. The mean and the standard deviation data were taken from Table 2.

\[
\text{(Wave 2 Mean – Wave 1 Mean)}/ [ (\text{Wave 2 SD + Wave 1 SD})/2] ;
\]

Retelling effect size for Wave 2 – Wave 1 = 1.827

\[
4.23 – 3.77 = 1.46; .973 + .685 = 1.598/2 = .799; 1.46/ .799 = 1.827
\]

Students grew about 46.56% between September and November.

Retelling effect size for Wave 3 – Wave 1 = 2.21

\[
5.41 – 3.77 = 1.64; .796 + .685 = 1.481/2 = .74; 1.64/ .74 = 2.21
\]

Students grew about 48.64% between wave September to January.
Retelling effect size for Wave 3 – Wave 2 = 1.33

5.41 – 4.23 = 1.18; .796 + .973 = 1.769/2 = .885; 1.18/.885 = 1.33

Students grew about 40.82% between wave November to January.

The growth size between wave 1 and wave 2 was 46.56%. The growth size between wave 2 and wave 3 was 40.82%. The percentage of growth was 5.74% more between wave 1 and 2 than between wave 2 and 3. The total student growth percentage between waves 1 and 3 was 48.64%.

**Repeated Measure Results for Word Recognition Accuracy and Words Correct per Minute**

Null Hypothesis 2: There is no change in the fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by words recognition accuracy.

**Descriptive Statistics for Word Recognition Accuracy and Words Correct per Minute**

Data from the 3-Minute Reading Assessments: Word Recognition, Fluency, and Comprehension were collected from each of the 22 students. After reading the text, word recognition accuracy was determined by calculating the percentage of words read correctly in the 60-second oral reading and dividing that number by the total number of words in all. According to Rasinski and Padak (2005), an instructional reading level is marked by a word recognition accuracy of 92 – 98%. Independent reading levels are marked with an accuracy rate of 99 – 100%.
**Descriptive Statistics for Word Recognition Accuracy**

According to the data recorded in Table 2, even though the mean for word recognition accuracy improved a small amount, that improvement was not strong enough. The Wilks’ Lambda score for word recognition accuracy was not significant at .274. Significance only applies when the Wilks’ Lambda was < .001. Therefore, the null hypothesis that there is no statistical significant change in the fluency skills that develop with regular use of the FDL in a second grade classroom as measured by word recognition accuracy cannot be rejected.

**Descriptive Statistics for Words Correct per Minute**

Null Hypothesis 3: There is no change in the fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by words correct per minute.

Words correct per minute (WCPM), automaticity, or reading rate were measured using the 3 Minute Reading Assessments: Word Recognition, Fluency, and Comprehension in September of 2014, November of 2014, and January of 2015 on each of the 22 second graders in the researcher’s class. The texts included in the 3 Minute Reading Assessments allowed the researcher to gain information about the automaticity skills for each student by choosing the grade level texts that corresponded to the students’ current grade level and month. Reading rate was determined by counting the number of words each student read correctly during a 60-second oral read (Rasinski & Padak, 2005). Words read correctly include words that were first misread but corrected by the student. Then, using the appropriate grade level and time of year, the student’s reading rates were compare with the target reading rates by grade level. For second graders, fall reading
rates should fall between 30 – 80 wcpm, winter reading rates should fall between 50 – 100 wcpm, and spring reading rates should fall between 70 – 130 wcpm.

The mean for words correct per minute increased from 94.18 wcpm in September, to 113 wcpm in November, and to 120.68 wcpm in January. These rates were above the target rates for second graders in September, November, and January. In addition, the average reading rates improved by 26.5 words from September through January.

The Wilks’ Lambda for words correct per minute or reading rate showed significance at .000. Because the Wilks’ Lambda $p$ value was < .001, the null hypothesis stating there is no statistical significant change in the fluency skills that develop with regular use of the FDL in a second grade classroom as measured by a words correct per minute rates was rejected.

**Sphericity for Words Correct per Minute**

The sphericity assumed for words correct per minute showed significance at .000 as the $p$ value was < .001. Conversely, when the Greenhouse-Geisser does not assume sphericity at .000, the Wilks’ Lambda test is still significant. Thus, the null hypothesis for question two pertaining to words correct per minute is rejected on the basis of sphericity assumption meaning that words correct per minute increased significantly from September through January with regular use of the FDL.

**Growth Pattern for Words Correct per Minute**

Further repeated measure analysis of the growth pattern for words correct per minute indicated that the linear growth pattern was significant at the .000 level when $p <$
.001. Wave 1 was greater than wave 2 and wave 2 was greater than wave 3. Thus, words correct per minute increased with regular use of the FLD.

Further, upon looking at the statistical significance of words correct per minute in this study, the effect size needed to be calculated to determine the percentage of growth between each wave. The mean and the standard deviation data were taken from Table 2.

Effect size for Words Correct per Minute: Wave 2 - Wave 1 = .634

\[ 113 - 94.18 = 18.82; 26.281 + 33.064 = 59.345/2 = 29.673; \frac{18.82}{29.673} = .634 \]

Students grew about 23.24% between Wave 1 and Wave 2.

Effect size for Words Correct per Minute: Wave 3 - Wave 1 = .814

\[ 120.68 - 94.18 = 26.5; 32.078 + 33.064 = 65.142/2 = 32.571; \frac{26.5}{32.571} = .814. \]

Students grew about 29.10% between Wave 1 and Wave 3.

Effect size for Words Correct per Minute: Wave 3 - Wave 2: .263

\[ 120.68 - 113.00 = 7.68; 32.078 + 26.281 = 58.359/2 = 29.18; \frac{7.68}{29.18} = .263. \]

Students grew about 10.26% between Wave 2 and Wave 3.
The growth size between wave 1 and wave 2 was 23.24%. The growth size between wave 2 and wave 3 was 10.26%. There was 12.98% more percentage of growth between wave 1 and 2 than between wave 2 and 3. The total student growth percentage between waves 1 and 3 was 29.10%.

**Repeated Measure Results for Multidimensional Fluency Skills**

Null Hypothesis 4: There is no change in the multidimensional fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by expression and volume.

Data from the 3-Minute Reading Assessments: Word Recognition, Fluency and Comprehension were collected from each of the 22 students in September of 2014, November of 2014, and January of 2015. The short texts that are included in the 3 Minute Reading Assessments allowed the researcher to collect information about the multidimensional fluency skills on the Multidimensional Fluency Scale for each student by choosing the grade level texts that corresponded to the students’ current grade level and month. Expression and volume, phrasing and intonation, smoothness, and pace are the four dimensions included in the Multidimensional Fluency Scale. The dimensions of fluency were measured by listening to student’s 60 second oral reading and rating it on the Multidimensional Fluency scale rubric (See Appendix C). The scores on each dimension of the fluency rubric ranged from 1 to 4 with 4 as the highest score, for a 16 point total. As a benchmark, each student should be rated in the top half in each dimension when they are reading grade-level material and achieve a total fluency score of 9 or above.
Table 4

Descriptive Statistics for Multidimensional Fluency Skills: Expression and Volume, Phrasing and Intonation, Smoothness, and Pace

<table>
<thead>
<tr>
<th></th>
<th>Expression and volume</th>
<th>Phrasing and intonation</th>
<th>Smoothness</th>
<th>Pace</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S. D.</td>
<td>Mean</td>
<td>S. D.</td>
</tr>
<tr>
<td>Wave 1</td>
<td>2.68</td>
<td>.568</td>
<td>2.50</td>
<td>.598</td>
</tr>
<tr>
<td>Wave 2</td>
<td>2.86</td>
<td>.351</td>
<td>2.77</td>
<td>.429</td>
</tr>
<tr>
<td>Wave 3</td>
<td>3.59</td>
<td>.590</td>
<td>3.55</td>
<td>.596</td>
</tr>
</tbody>
</table>

Wilks'Lambda .000 .000 .000 .000

Note.  S. D. = Standard Deviation.
Sig. = Wilks’ Lambda or p value; $p < .001$.
Wave 1 was conducted in September. Wave 2 was conducted in November. Wave 3 was conducted in January.

Descriptive Statistics Multidimensional Fluency Skills: Expression and Volume

Using descriptive statistics, the data analysis of the dimensions of fluency showed that the mean improved consistently from September to January in all dimensions.

Specifically, the scores for expression and volume in oral reading fluency increased from 2.68 in September, to 2.86 in November, to 3.59 in January for a total increase of .91 in mean score.

The Wilks’ Lambda for the multidimensional fluency skill of expression and volume showed significance at the .000 level. Because the Wilks’ Lambda $p$ value was $< .001$, the null hypothesis stating there is no statistical significant change in the multidimensional fluency skill of expression and volume, with regular use of the FDL in a second grade classroom as measured the Multidimensional Fluency Scale was rejected.
Sphericity for Multidimensional Fluency Skills: Expression and Volume

Sphericity for the multidimensional fluency skill of expression and volume as measured by the Multidimensional Fluency Scale was assumed at the .000 level and showed statistical significance. This holds true when the $p$ value < .001 as in the case with all multidimensional fluency skills. Conversely, the Greenhouse-Geisser does not assume sphericity at .000. Therefore, the Wilks’ Lambda test is still significant.

Table 5
Tests of Sphericity for Multidimensional Fluency Skills

<table>
<thead>
<tr>
<th></th>
<th>Expression and volume significance</th>
<th>Phrasing and intonation significance</th>
<th>Smoothness significance</th>
<th>Pace significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sphericity assumed</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Greenhouse-Geisser</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Linear</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. $p$ value is significant when $p < .001$.

Growth Pattern for Multidimensional Fluency Skills: Expression and Volume

Further repeated measure analysis of the growth pattern for the multidimensional fluency skill of expression and volume indicated that linear growth pattern was significant at the .000 level when $p < .001$. Wave 2 was greater than wave 1 and wave 3 was greater than wave 2. Given the data reported, expression and volume increased with regular use of the FLD.
Further, upon looking at the statistical significance of the multidimensional skill expression and volume in this study, the effect size needed to be calculated to determine the percentage of growth between each wave. The mean and the standard deviation data were taken from Table 4.

Effect Size for Expression and Volume: Wave 2 - Wave 1 = .39

\[2.86 - 2.68 = 0.18; \frac{0.351 + 0.568}{2} = 0.460; \frac{0.18}{0.460} = 0.39\]

Each student grew about 15.17% from September to November.

Effect Size for Expression and Volume: Wave 3 - Wave 1 = 1.57

\[3.59 - 2.68 = 0.91; \frac{0.590 + 0.568}{2} = 0.58; \frac{0.91}{0.58} = 1.57\]

Each student grew about 44.41% from September to January.
Effect Size for Expression and Volume:  Wave 3 - Wave 2 = 1.55

3.59 – 2.86 = 0.73; .590 + .351 = .941/2 = .47; .73/.47 = 1.55

Each student grew about 43.94% from November to January.

The growth size between wave 1 and wave 2 was 15.17%. The growth size between wave 2 and wave 3 was 43.94%. There was 28.77% more growth between wave 2 and 3 than between wave 1 and 2. The total student growth percentage between waves 1 and 3 was 44.41% showing that expression and volume increased with frequent use of the FDL from September through January.

**Descriptive Statistics Multidimensional Fluency Skills: Phrasing and Intonation**

Null Hypothesis 5: There is no statistical change in the multidimensional fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by phrasing and intonation.

Using descriptive statistics, the data analysis of multidimensional fluency skills showed that the scores for phrasing for intonation in oral reading fluency increased from 2.50 in September, to 2.77 in November, to 3.55 in January for a total increase of 1.05 in mean score. The Wilks’ Lambda for the multidimensional fluency skill of phrasing and volume showed statistical significance at the .000 level. Because the Wilks’ Lambda \( p \) value was < .001, the null hypothesis stating there is no statistical significant change in the multidimensional fluency skill of phrasing and volume, with regular use of the FDL in a second grade classroom as measured the Multidimensional Fluency Scale was rejected.
Sphericity for Multidimensional Fluency Skills: Phrasing and Intonation

Using the data reported in Table 5, sphericity for the multidimensional fluency skill of phrasing and intonation, as measured by the Multidimensional Fluency Scale, was assumed at the .000 level and showed statistical significance. This holds true when the \( p \) value is \(< .001\) as in the case with all multidimensional fluency skills. Conversely, the Greenhouse-Geisser does not assume sphericity at .000. Therefore, the Wilks’ Lambda test is still significant.

Growth Pattern for Multidimensional Fluency Skill: Phrasing and Intonation

Further repeated measure analysis of growth pattern for the multidimensional fluency skill of phrasing and intonation indicated that linear growth was significant at the .000 level when \( p < .001\). Wave 2 was greater than wave 1 and wave 3 was greater than wave 2. Therefore, given the data, phrasing and intonation increased with regular use of the FLD.
When looking at the statistical significance of the multidimensional skill phrasing and intonation in this study, the effect size needed to be calculated to determine the percentage of growth between each wave. The mean and the standard deviation data were taken from Table 4.

Effect size for Phrasing and Intonation: Wave 2 - Wave 1 = .53

\[ 2.77 - 2.50 = .27; .429 + .598 = 1.02/2 = .513; .27/.513 = .53 \]

Students grew about 19.85% from September to November.

Effect size for Phrasing and Intonation: Wave 3 - Wave 1 = 1.76

\[ 3.55 - 2.50 = 1.05; .596 + .598 = 1.194/2 = .597; 1.05/.597= 1.76 \]

Students grew about 46.08 percent from September to January.
Effect size for Phrasing and Intonation: Wave 3 - Wave 2 = 1.53

$3.55 - 2.77 = .78; \quad .596 + .429 = 1.03/2 = .51; \quad .78/.51 = 1.53$

Students grew about 43.70% from November to January.

The growth size between wave 1 and wave 2 was 19.85%. The growth size between wave 2 and wave 3 was 43.70%. There was 23.85% growth between wave 2 and 3 than between wave 1 and 2. The total student growth percentage between waves 1 and 3 was 46.08%.

Descriptive Statistics Multidimensional Fluency Skills: Smoothness

Null Hypothesis 6: There is no statistical change in the multidimensional fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by smoothness in fluency.

Using descriptive statistics, the data analysis of multidimensional fluency skills showed that the scores for smoothness in oral reading fluency increased from 2.45 in September, to 2.64 in November, to 3.45 in January with a total increase of 1.00 in the mean score. The mean scores and Wilks’ Lambda scores were taken from the data reported in Table 4. The Wilks’ Lambda for the multidimensional fluency skill of smoothness showed statistical significance at the .000 level. Because the Wilks’ Lambda $p$ value was < .001, the null hypothesis stating there is no statistical significant change in the multidimensional fluency skill of smoothness, with regular use of the FDL in a second grade classroom as measured the Multidimensional Fluency Scale was rejected.

Sphericity for Multidimensional Fluency Skills: Smoothness

Using the data reported in Table 5, sphericity for the multidimensional fluency skill of smoothness, as measured by the Multidimensional Fluency Scale, was assumed at
the .000 level and showed statistical significance. This holds true when the $p$ value is < .001 as in the case with all multidimensional fluency skills. Conversely, the Greenhouse-Geisser does not assume sphericity at .000. Therefore, the Wilkes’ Lambda test is still significant.

**Growth Pattern for Multidimensional Fluency Skill: Smoothness**

Further repeated measure analysis of growth pattern for the multidimensional fluency skill of smoothness, indicated that the linear growth pattern was significant at the .000 level when $p < .001$. Wave 2 was greater than wave 1 and wave 3 was greater than wave 2. Fluency smoothness increased with regular use of the FLD.

![Estimated Marginal Means of Smoothness](image)

Figure 5. Linear graph for smoothness.
In this study, when looking at the statistical significance of the multidimensional fluency skill, smoothness, the effect size needed to be calculated to determine the percentage of growth between each wave. The mean and the standard deviation data were taken from Table 4.

Effect size for Smoothness: Wave 2 - Wave 1 = .29
2.64 – 2.45 = .19; .727 + .596 = 1.32/2 = .66; .19/1.32 = .29
Students grew about 11.41% from September to November.

Effect size for Smoothness: Wave 3 - Wave 1 = 1.67
3.45 - 2.45 = 1.00; .596 + .596 = 1.192/2 = .596; 1.00/.596 = 1.67
Students grew about 45.25% from September to January.

Effect size for Smoothness: Wave 3 - Wave 2 = 1.23
3.45 – 2.64 = .81; .596 + .727 = 1.32/2 = .66); .81/.66 = 1.23
Students grew about 39.07% from November to January.

The growth size between wave 1 and wave 2 was 11.41%. The growth size between wave 2 and wave 3 was 39.07%. There was 27.66% more growth between wave 2 and 3 than between wave 1 and 2. The total student growth percentage between waves 1 and 3 was 45.25%.

**Descriptive Statistics Multidimensional Fluency Skills: Pace**

Null Hypothesis 7: There is no statistical change in the multidimensional fluency skills that develop with regular use of The Fluency Development Lesson in a second grade classroom as measured by pace in fluency.

Using descriptive statistics, the data analysis of multidimensional fluency skills showed that the scores for pace in oral reading fluency increased from 2.73 in September, to 2.82 in November, to 3.45 in January for a total increase of .72. The mean scores and
Wilks’ Lambda scores were taken from the data reported in Table 4. The Wilks’ Lambda score for the multidimensional fluency skill of pace showed statistical significance at the .000 level. Because the Wilks’ Lambda $p$ value was $< .001$, the null hypothesis stating there is no statistical significant change in the multidimensional fluency skill of pace, with regular use of the FDL in a second grade classroom as measured the Multidimensional Fluency Scale was rejected.

**Sphericity for Multidimensional Fluency Skills: Pace**

Using the data reported in Table 5, sphericity for the multidimensional fluency skill of pace was assumed at the .000 level and showed statistical significance. This holds true when the $p$ value is $< .001$ as in the case with all the multidimensional fluency skills. Conversely, the Greenhouse-Geisser does not assume sphericity at .000. Therefore, the Wilks’ Lambda test is still significant.

**Growth Pattern for Multidimensional Fluency Skill: Pace**

Further repeated measure analysis of growth patterns for the multidimensional fluency skill of pace indicated that the linear growth pattern was significant at the .000 level when $p < .001$. Wave 2 was greater than wave 1 and wave 3 was greater than wave 2. Therefore, pace in fluency increased with regular use of the FLD.
Once again, when looking at the statistical significance of the multidimensional fluency skill, pace, the effect size needed to be calculated to determine the percentage of growth between each wave. The mean and the standard deviation data were taken from Table 4.

Effect size for Pace: Wave 2 - Wave 1 = .138
\[2.82 - 2.73 = .09; .664 + .631 = 1.295/2 = .65; .09/.65 = .138\]
Students grew about 13.68% from September to November.

Effect size for Pace: Wave 3 - Wave 1 = .96
\[3.45 - 2.73 = .72; .858 + .631 = 1.489/2 = .75; .72/.75 = .96\]
Students grew about 43.19% from September to January.
Effect size for Pace: Wave 3 - Wave 2 = .83
3.45 – 2.82 = .63; .858 + .664 = 1.52/2 = .76; .63/.76 = .83

Students grew about 29.67% from November to January.

The growth size between wave 1 and wave 2 was 13.68%. The growth size between wave 2 and wave 3 was 29.67%. There was 15.99% more growth between wave 2 and 2 than between wave 1 and 2. The total student growth percentage between waves 1 and 3 was 43.19%.

Finally, looking at descriptive statistics, the data analysis of the dimensions of fluency showed that the mean improved consistently from September to January in all dimensions. The mean for phrasing and intonation was the multidimensional fluency skill with the most improvement during the study.

In addition, growth patterns for all dimensions of fluency included in the Multidimensional Fluency Scale showed linear growth was significant at the .000 level when \( p < .001 \) for expression and volume, phrasing and intonation, smoothness, and pace. Wave 2 was higher than wave 1 and wave 3 was higher than wave 2. So it appeared, given the data, that there was a statistical significant change in the multidimensional skills that develop with regular use of the FDL in a second grade classroom as measured by expression and volume, phrasing and intonation, smoothness, and pace. Therefore, the null hypotheses for question 3 were rejected supporting the hypothesis that the multidimensional fluency skills of expression and volume, phrasing and intonation, smoothness, and pace increased from September to January with regular use of the FDL in a second grade classroom.
Summary for Repeated Measure

The null hypothesis for question one stating that there was no statistical significant change in retelling skills at the beginning, in the middle, and at the end of regular use of the FLD in a second grade classroom as measured by a retelling comprehension rubric was rejected. The students’ reading progress in comprehension retelling skills was evident based on the results of the 3 Minute Reading Assessments: Word Recognition, Fluency, and Comprehension. During this time period, the descriptive statistics indicated the retelling mean increased significantly while each student’s linear growth increased 48.64 percentage points for retelling comprehension. In addition, the Wilks’ Lambda, sphericity, and linear growth measures all showed statistical significance at .000. The students’ retelling comprehension skills clearly benefited from participation in the Fluency Development Lesson from September through January.

Research question 2 contained two hypotheses. Null hypotheses 2, stating there was no significant statistical change in word recognition accuracy with regular use of the FDL in a second grade classroom, could not be rejected as evidenced by Wilks’ Lambda results greater than .001. The mean for word recognition accuracy improved some but not significantly. Conversely, null hypothesis 3, stating that there was no statistical significant change in words correct per minute (wcpm) with regular use of the FDL in a second grade classroom, was rejected. There were statistically significant changes in words correct per minute fluency skills that develop with regular use of the FDL in a second grade classroom as evidenced by the statistical significance of the Wilks’ Lambda, sphericity, and linear growth at .000. In addition, the mean increased 26.5
wcpm and effect size percentages increased 29.10%. The students demonstrated significant advances in words read correctly per minute during September through January.

Finally, the null hypotheses 4, 5, 6, and 7 were all rejected for question 3 showing there were statistical significant changes in the the multidimensional fluency skills that develop with regular use of the FDL in a second grade classroom as measured by expression and volume, phrasing and intonation, smoothness, and pace. The data analysis suggested the statistical significance in all four areas of the multidimensional fluency skills at .000. The mean increased .91 for expression and volume, 1.05 for phrasing and intonation, 1.00 for smoothness, and .72 for pace from September to January. The linear growth supported the effect size growth of wave 2 higher than wave 1 and wave 3 higher that wave 2. Expression and volume increased 44.41%, phrasing and intonation increased 46.08%, smoothness increased 45.25%, and pace increased 43.19 from September to January. The multidimensional fluency skills of expression and volume, phrasing and intonation, smoothness, and pace all improved with regular use of the FDL from September through January. Although they all showed significant growth, the multidimensional fluency skill showing the most growth was phrasing and intonation, while pace showed the least growth.

**Pearson r Correlation Results**

Null Hypothesis 8: There is no statistical significant correlation between oral reading fluency and retelling comprehension.
**Correlation for Word Recognition Accuracy and Retelling Comprehension**

Table 6 examined the statistical significance between oral reading fluency and retelling comprehension while attempting to reject the null hypothesis between variables. Word Recognition Accuracy (WRA) was the oral reading fluency subscale measured. The tests for WRA and retelling comprehension were administered in September, November, and January.

Table 6

**Correlation Chart Between Word Recognition Accuracy and Retelling Comprehension**

<table>
<thead>
<tr>
<th>Word Recognition Accuracy %</th>
<th>Wave One</th>
<th>Wave Two</th>
<th>Wave Three</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comprehension</td>
<td>Comprehension</td>
<td>Comprehension</td>
</tr>
<tr>
<td>Word Recognition Accuracy %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave 1</td>
<td>.229</td>
<td>.560**</td>
<td>.359</td>
</tr>
<tr>
<td>Pearson Correlation Sig. (2 Tailed)</td>
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<td>.007</td>
<td>.651</td>
</tr>
<tr>
<td></td>
<td>.481*</td>
<td>.081</td>
<td>-.047</td>
</tr>
<tr>
<td></td>
<td>.024</td>
<td>.719</td>
<td>.834</td>
</tr>
<tr>
<td>Word Recognition Accuracy %</td>
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<td>-.005</td>
<td>.511*</td>
</tr>
<tr>
<td>Wave 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation Sig. (2 Tailed)</td>
<td>.185</td>
<td>.982</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>.295</td>
<td>.489*</td>
<td></td>
</tr>
<tr>
<td>Word Recognition Accuracy %</td>
<td>.182</td>
<td>.021</td>
<td></td>
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<tr>
<td>Wave 3</td>
<td></td>
<td></td>
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<tr>
<td>Pearson Correlation Sig. (2 Tailed)</td>
<td>.419</td>
<td></td>
<td>.053</td>
</tr>
</tbody>
</table>

Note. ** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

When looking at the relationship between test one and test two for Word Recognition Accuracy (WRA), \( r \) exceeded the critical value. There was a statistically significant positive relationship between word recognition accuracy in tests one and two. The reported Pearson correlation coefficient, \( r = .560 \) and \( p = .007 \). Because \( p < 0.01 \), the
correlation was significant at the 0.01 level. WRA increased from September to November.

The relationship between WRA scores in test one and retelling comprehension scores in test two was deemed statistically positive. The reported Pearson $r$ correlation coefficient was $0.481$. The exact $p$ value was $0.024$. Since $p < 0.05$, the correlation coefficient indicated a positive significance at the 0.05 level. As word recognition accuracy increased, so did retelling comprehension.

The relationships between WRA and retelling comprehension in tests one to three and test two to three were also deemed statistically significant. The reported Pearson $r$ correlation coefficient was $0.667$ indicating a strong positive relationship from week one to week three. The exact $p$ value was $0.001$. Since $p$ was less than the 0.01 level, there was a statistically significant strong positive relationship between the two variables. In addition, WRA and retelling comprehension also indicated a positive relationship between test two and test three with the Pearson $r$ correlation coefficient at $0.511$ and the exact $p$ value at $0.015$. The correlation between these two variables was significant at the $p = 0.05$ level. Once again, as WRA increased, retelling comprehension also increased.

There was also a statistically significant positive relationship for retelling comprehension between test one and test three as well as test two and test three. With the reported Pearson $r$ correlation coefficient at $0.440$ and the exact $p$ value at $0.040$, which was less than the 0.05 $p$ value level, the correlation indicated significance at the 0.05 level for test one to test three. Furthermore, the Pearson $r$ correlation coefficient was at $0.489$ with an exact $p$ value at $0.021$, which also indicated significance at the $p = 0.05$ level for test
two to test three. Retelling comprehension increased significantly between tests one and three.

In conclusion, since $r$ exceeded the critical value in the relationships between all the above variables, the null hypothesis, stating that there was no statistically significant correlation between oral reading fluency and retelling comprehension, was rejected. There was a statistically significant positive relationship between word recognition accuracy and retelling comprehension. Word Recognition Accuracy increased as retelling comprehension increased from tests one through tests three.

**Correlation for Words Correct per Minute and Retelling Comprehension**

Table 7 sought to determine the statistical significant correlation between oral reading fluency and retelling comprehension. Furthermore, it sought to reject the null hypothesis that there is no statistical significant correlation between oral reading fluency and retelling comprehension. The oral reading fluency subscale measured was automaticity, or words correct per minute (WCPM).

Table 7

Correlation Chart for Fluency Automaticity (WCPM) and Retelling Comprehension

<table>
<thead>
<tr>
<th></th>
<th>3 Comprehension</th>
<th>1 Fluency Automaticity (wcpm)</th>
<th>2 Comprehension</th>
<th>1 Comprehension</th>
<th>3 Fluency Automaticity (wcpm)</th>
<th>2 Fluency Automaticity (wcpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Comprehension</td>
<td>Pearson Correlation Sig. (2-tailed)</td>
<td>1</td>
<td>.641**</td>
<td>.489*</td>
<td>.440*</td>
<td>.697**</td>
</tr>
<tr>
<td>1 Fluency-</td>
<td>Pearson Correlation Sig. (2-tailed)</td>
<td>0.001</td>
<td>.021</td>
<td>.040</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>Automaticity</td>
<td></td>
<td>1</td>
<td>.385</td>
<td>.319</td>
<td>.872**</td>
<td>.904**</td>
</tr>
<tr>
<td>(wcpm)</td>
<td></td>
<td>.077</td>
<td>.148</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>2 Comprehension</td>
<td>Pearson Correlation Sig. (2-tailed)</td>
<td>1</td>
<td>.081</td>
<td>.259</td>
<td>.315</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.719</td>
<td>.245</td>
<td>.154</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pearson</td>
<td>1</td>
<td>.415</td>
<td>.352</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 7

Correlation Chart for Fluency Automaticity (WCPM) and Retelling Comprehension (continued)

<table>
<thead>
<tr>
<th>Comprehension</th>
<th>Correlation</th>
<th>3 Fluency Automaticity (wcpm)</th>
<th>2 Comprehension</th>
<th>1 Comprehension</th>
<th>3 Fluency Automaticity (wcpm)</th>
<th>2 Fluency Automaticity (wcpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Fluency</td>
<td>Correlation</td>
<td>Sig. (2-tailed)</td>
<td>.065</td>
<td>.109</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automaticity</td>
<td></td>
<td>Pearson</td>
<td>1*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(wcpm)</td>
<td></td>
<td>Sig (2-tailed)</td>
<td>.923**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(wcpm)</td>
<td></td>
<td></td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The Pearson product correlation between WCPM on test one in September shared a statistically significant strong positive relationship with retelling comprehension on test three in January. The Pearson $r$ correlation coefficient is .641, while $p$ is .001. Thus, the correlation is significant at the 0.01 level indicating that retelling comprehension on test three is explained by the students’ WCPM score on test one.

The relationship between retelling comprehension on test one and retelling comprehension on test three reported a Pearson $r$ correlation coefficient of .440 with an exact $p$ value of .040. In addition, the relationship between retelling comprehension on test two and retelling comprehension on test three reported a Pearson $r$ correlation coefficient of .489 with an exact $p$ value of .021. Both are indicative of a statistically positive relationship with the correlation significant at the 0.05 level. Retelling comprehension increased consistently between September and January.

The Pearson $r$ correlation coefficient between second grade students’ scores on WCPM in September on test one and WCPM in November on test two shared a
statistically significant very strong positive relationship at $r = .904$ and $p = .000$. Also, the Pearson $r$ correlation coefficient between WCPM scores in September on test one shared a statistically significant very strong positive relationship with their WCPM scores on test three in January with $r = .872$ and $p = .000$. Since exact $p$ values are less than 0.01, the correlation is significant at the 0.01 level. WCPM increased significantly between tests one and three.

Finally, the relationship between WCPM on test two in November and retelling comprehension scores on test three in January was deemed statistically positive. The reported Pearson $r$ correlation coefficient was .637 with an exact $p$ value of .001 indicating a strong positive correlation at the 0.01 level. Furthermore, the relationship between WCPM on test three in January and retelling comprehension on the same test was also deemed statistically positive. The reported Pearson $r$ correlation coefficient was .697 with an exact $p$ value of .000 also indicating a strong positive correlation at the 0.01 level. As WCPM increased, so did retelling comprehension.

In conclusion, the null hypothesis, stating that there was no statistical significant relationship between oral reading fluency and retelling comprehension, was rejected. There was a statistically significant positive relationship between words correct per minute (WCPM) and retelling comprehension. Retelling comprehension increased as WCPM increased from tests one through tests three.

**Summary**

The four research questions in this study sought to describe how regular use of the FDL in a second grade classroom might impact the oral reading fluency and comprehension skills of these students. Data analysis suggested that the fluency and
comprehension skills of these second grade students improved significantly throughout the reading intervention from September through January. The results of the methodology, using repeated measure and Pearson $r$ correlation coefficient, were presented statistically to show growths in the areas of word recognition accuracy, words correct per minute, multidimensional fluency skills, and retelling comprehension.

In conclusion, this chapter presented the analysis of the data collected to answer the four research questions chosen to show the impact of the FDL on second grade students’ oral reading fluency and retelling comprehension skills. Findings from the data suggested that with regular use of the FDL from September through January, significant statistical improvements were seen in retelling comprehension, words read correctly per minute (WCPM), expression and volume, phrasing and intonation, smoothness, and pace in reading. Further, there was a statistically positive relationship between both word recognition accuracy and words correct per minute with retelling comprehension. Retelling comprehension increased as word recognition accuracy and words correct per minute increased.

In the following chapter, in order to answer the research questions, the results of the study are presented. First, a summary of the study is discussed, including the purpose of the study, research questions, and the research methods used. Second, the results of this study are presented and are subsequently followed by conclusions in regard to the research questions. Next, implications are discussed, including implications for teachers, administrators, curriculum directors, and teacher educators. Last, recommendations for further research are suggested.
CHAPTER V
CONCLUSIONS AND IMPLICATIONS

Chapter five is composed of four major sections. In the first section, a summary of the study is provided, which includes the study’s purpose, the research questions, and the research methods used in the study. The second section summarizes the results and conclusions drawn from the study as they relate to the research questions and includes a critical evaluation of the findings, and the similarities to earlier studies. Next, the implications for teachers, administrators, curriculum directors, and other stakeholders are considered. The final section suggests recommendations for further research based on conclusions from the data.

Summary of the Study

Reading comprehension is a reader’s ability to gain meaning from text (Harris & Hodges, 1995). Research has indicated that there is a positive relationship between comprehension and fluency. Samuels (2006) believed this is largely because a fluent reader does not waste energy in decoding words and can therefore comprehend texts more easily. Consequently, oral reading fluency can provide critical support for reading comprehension. Kuhn and Rasinski (2007) believed that “fluency can make a difference in a student’s success as a reader” (p. 204). Moreover, as comprehension increases, a student’s oral reading fluency is also improved (Fuchs et al., 2001).
Even though a recognized relationship does exist between oral reading fluency and comprehension, few studies have provided in-depth analysis of the fluency and comprehension relationship as it evolves among young readers receiving targeted fluency instruction in a primary-grade classroom over time. The purpose of this study was to examine the reciprocal relationship between oral reading fluency and reading comprehension through the lens of developing readers in an actual classroom setting.

In order to provide targeted fluency instruction, the study implemented the Fluency Development Lesson (Rasinski et al., 1994), a widely recognized and research-based instructional framework for fluency development to analyze its impact on the reading comprehension of students in a second grade classroom. The Fluency Development Lesson (FDL) incorporates instructional skills and strategies that have been proven effective at fostering fluency development (Reutzel, 2006). Moreover, as it analyzed the impact of the Fluency Development Lesson on the oral reading fluency and reading comprehension of these second grade students, this study also looked closely and described the relationship that emerged between reading fluency and comprehension. Results of this study therefore provided a description of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students.

Current research suggests that fluency and comprehension need to be taught simultaneously so this reciprocal relationship becomes automatic to readers (Applegate et al., 2009). By examining the relationship between oral reading fluency and reading comprehension through in-depth analysis of the data generated by the Fluency Development Lesson, this study could provide teachers and educators with information that would contribute to students’ success as readers. Furthermore, continuing to teach
fluency and comprehension skills together without a deep understanding of how they impact each other offers little evidence of the effectiveness of this instructional approach. A better understanding of this relationship could, thus, assist educators in providing appropriate instruction in fighting illiteracy. Consequently, research was needed in this area to help educators understand how oral reading fluency contributes to students’ overall reading development. The following questions guided this quantitative study:

1. When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?

2. When provided daily use of The Fluency Development Lesson in a second grade classroom, do fluency skills change as measured by words correct per minute rates and word recognition accuracy?

3. When provided daily use of The Fluency Development Lesson in a second grade classroom, which multidimensional fluency skills develop as measured by expression and volume, phrasing and intonation, smoothness, and pace.

4. Is there a correlation between oral reading fluency and retelling comprehension?

To answer these questions, a study was conducted in a suburban school district located in a Midwestern state in a second grade classroom. Twenty-two students between seven and nine years old took part in the study. The participant sample employed was a purposeful, nonprobability sample. The researcher was the classroom teacher.

This study analyzed the data collected in this semester long, quantitative, quasi-experimental study, which sought to investigate how fluency and comprehension skills
develop in second grade students with regular use of the Fluency Development Lesson (FDL). Specifically, the researcher looked for the growth patterns from the beginning of FDL instruction as well the relationship between oral fluency scores and comprehension retelling scores generated for each student. The researcher’s second grade class participated in daily FDL lessons from September through January. This study also described the impact of the FDL instruction on students’ literacy proficiency by looking at the strength between the variables. The variables being analyzed were students’ oral reading fluency and retelling comprehension abilities as indicated in the results of the 3-Minute Reading Assessments: Word Recognition, Fluency, and Comprehension given to all 22 students at the beginning, middle, and end of the semester.

The following data collection sources were employed in the study: assessments including the results of the 3 Minute Reading Assessments: Fluency, Word Recognition, and Comprehension (3MRA, Rasinski & Padak, 2005). Data were collected by the researcher on each individual student using the variables, oral reading fluency and retelling comprehension. The primary assessment measure used in the study was the 3MRA, which was administered in September, November, and January. This measure was analyzed to generate the following scores: (a) word recognition accuracy (decoding); (b) automaticity in reading fluency; (c) multidimensional fluency skills including expression and volume, phrasing and intonation, smoothness, and pace; and (d) retelling comprehension.

The organization of data for this study determined the statistical significance of change and the existence of a correlation between oral reading fluency and comprehension among the second grade students. The analysis of repeated measures and
the Pearson’s $r$ statistical test generated a series of tables that defined the statistical relationship between the two variables. Using statistics, specifically the analysis of repeated measure and the Pearson $r$ correlation coefficient, the relationship between the two variables was examined (Salkind, 2008) and a relationship was determined. Results of all the data collected and analyzed in this study were used to provide a statistical analysis of the impact of the Fluency Development Lesson on the fluency and comprehension skills of second grade students.

**Results of the Study**

The findings of the first, second, and third research questions are addressed by presenting the results of the data using repeated measure analysis. The findings from the fourth question are addressed by presenting the results of the Pearson $r$ correlation coefficient.

**Repeated Measure Results for Retelling Comprehension**

Question 1: When provided daily use of The Fluency Development Lesson in a second grade classroom, do retelling skills change as measured by a retelling comprehension rubric?

The null hypothesis for question one stating that there was no statistical significant change in retelling skills at the beginning, in the middle, and at the end of regular use of the FLD in a second grade classroom as measured by a retelling comprehension rubric was rejected. The students’ reading progress in comprehension retelling skills was evident based on the results of the 3 Minute Reading Assessments: Word Recognition, Fluency, and Comprehension. During this time period, the
descriptive statistics indicated the retelling mean increased significantly for retelling comprehension. In addition, the Wilks’ Lambda, sphericity, and linear growth showed statistical significance at .000. Retelling comprehension effect size grew a total of 48.64% from September through January. The students’ retelling comprehension skills clearly benefited from participation in the Fluency Development Lesson from September through January.

Repeated Measure Results for Word Recognition Accuracy and Words Correct per Minute

Question 2. When provided daily use of The Fluency Development Lesson in a second grade classroom, do fluency skills change as measured by words correct per minute rates and word recognition accuracy?

Word recognition accuracy. Even though the mean for word recognition accuracy improved a small amount from September through January, that improvement was not strong enough. The Wilks’ Lambda score for word recognition accuracy was not significant at .274. Significance only applies when $p < .001$ and the Wilks’ Lambda was > .001. Therefore, the null hypothesis that there is no statistical significant change in the fluency skills that develop with regular use of the FDL in a second grade classroom as measured by word recognition accuracy cannot be rejected. There was not enough change in word recognition accuracy from September through January to be statistically significant.

Words correct per minute. The second null hypothesis for question number two, fluency skills reflected in words correct per minute, was rejected. There were statistically significant changes in words correct per minute fluency skills that develop
with regular use of the FDL in a second grade classroom as evidenced by the statistical significance of the Wilks’ Lambda, sphericity, and linear growth at .000. In addition, there were significant increases in the mean at 26.5 wcpm, along with effect size percentages increasing to 29.10%. The students demonstrated advances in words read correctly per minute during September through January.

**Repeated Measure Results for Multidimensional Skills: Expression and Volume, Phrasing and Volume, Smoothness, and Pace**

Question 3. When provided daily use of The Fluency Development Lesson in a second grade classroom, which multidimensional fluency skills develop as measured by expression and volume, phrasing and intonation, smoothness, and pace.

The null hypotheses were rejected for question 3 showing there were statistical significant changes in the multidimensional fluency skills that develop with regular use of the FDL in a second grade classroom as measured by expression and volume, phrasing and intonation, smoothness, and pace. The data analysis suggested the statistical significance in all four areas of the multidimensional fluency skills (expression and volume, phrasing and intonation, smoothness, and pace) with Wilks’ Lambda and sphericity assumption significant at the .000 level where $p < .001$. There were also significant increases in effect size percentages and the mean for all four multidimensional fluency skills in September, November, and January. The multidimensional fluency skills of expression and volume, phrasing and intonation, smoothness, and pace all improved with regular use of the FDL from September through January.
Pearson r Correlation Results for Word Recognition Accuracy and Retelling

Comprehension

Question 4. What is the correlation between oral reading fluency and retelling comprehension?

Since $r$ exceeded the critical value in the relationships between the word recognition accuracy and retelling comprehension variables, the null hypothesis stating that there was no statistically significant correlation between oral reading fluency and retelling comprehension was rejected. There was a statistically significant positive relationship between word recognition accuracy and retelling comprehension. Word Recognition Accuracy increased as retelling comprehension increased from tests one through tests three.

Pearson r Correlation Results for Word Correct per Minute and Retelling

Comprehension

The null hypothesis stating that there was no statistical significant relationship between oral reading fluency and retelling comprehension was rejected. There was a statistically significant positive relationship between words correct per minute (wcpm) and retelling comprehension. In all retelling comprehension and wcpm variables tested, $r$ exceeded the critical values. Retelling comprehension increased as wcpm increased from tests one through tests three.

Conclusions

The four research questions in this study sought to describe how regular use of the FDL in a second grade classroom might impact the oral reading fluency and
comprehension skills of these students. Data analysis suggested that the fluency and comprehension skills of these second grade students improved significantly throughout the reading intervention, the FDL, from September through January. The results of the methodology, using repeated measure and Pearson $r$ correlation coefficient, were presented statistically to show growths in the areas of word recognition accuracy and words correct per minute, multidimensional fluency skills, and retelling comprehension. As a result, students who participated in this study appeared to benefit from the variety of instructional scenarios in the FDL that provided them opportunities to experience numerous, authentic fluency, and meaning-making activities.

Reading progress in second grade students was noted through observations made by the researcher in the results of the 3 Minute Reading Assessments: Word Recognition, Fluency, and Comprehension. The oral reading fluency skills assessed during this assessment were word recognition accuracy, words correct per minute, and the multidimensional fluency skills of expression and volume, phrasing and intonation, smoothness, and pace. The second graders who participated in the intervention program that focused on developing reading skills, the FDL, demonstrated significant reading improvement in the areas of fluency and comprehension on the 3 Minute Reading Assessments. These fluency and comprehension skills were practiced daily during the FDL which allowed for further observations by the researcher. The impact of the FDL proved beneficial in defining the relationship between repeated readings and fluency development. Daily oral repeated reading practice during the FDL gave insights into the progress the students made during the study. A study by Griffith and Rasinski (2004) suggested that oral repeated reading activities led to fluency improvement. Likewise, this
research is consistent with the National Reading Panel (2000) research which recommended that in order to develop and improve oral reading fluency teachers should engage their students in daily oral guided repeated reading activities. Results of this study support the soundness of this research.

This study viewed the act of reading in a multidimensional sense. To this end, the researcher implemented the research-based components of the FDL to engage second grade students in a variety of listening, speaking, reading, writing, and performing activities to enhance their fluency and comprehension skills. The FDL used a variety of poems to reinforce the components of fluency, comprehension and grammar skills, as well as language patterns and sentence structure. Scholars in the field of literacy support literacy as a multidimensional skill that includes the incorporation of speaking, writing, listening, and performing (Freeman & Freeman, 2000; Vacca et al., 2009). The cumulative findings of this study demonstrate that ultimately students construct meaning by engaging in a variety of activities that enhance their fluency skills.

Another advantage of the FDL in this study was that the second grade students began to view themselves as capable readers equipped with metacognitive awareness (Flavell, 1977) about their reading skills. When proficient readers are metacognitive, they think about their own thinking during reading. The students began to recognize the components of fluency when reading, and how automaticity, accuracy, and expression work together to make reading comprehensible. Various researchers suggest that readers who understand the purpose of reading, including fluency and comprehension, are more confident in their reading activities (Kuhn & Stahl, 2000; Routman, 2000). In addition, the interactions that occurred during the FDL increased text connections and oral
interpretation. These interactions with the text provide important ways to help students actively engage with print. The findings of this study strengthen Rosenblatt’s (1987) reader response theory, which stressed the importance of how readers use personal transactions to the text as they attempt to interpret the author’s purpose. The students in the study used their own personal experiences to construct meaning with the poems used in the FDL.

This study also corroborated the research findings of past researchers on the relationship between oral reading fluency and comprehension (Fuchs et al., 2001; Jenkins et al., 2000; Klauda & Guthrie, 2008; Lai et al., 2014). The oral reading fluency and comprehension scores of the second grade students participating in the study made significant gains as a result of frequent use of the FDL. Their results, as well as the results of past researchers, indicate that fluency appears to have much in common with reading comprehension. Oral reading fluency predicts reading comprehension and, in turn, comprehension predicts oral reading text fluency. These explorations maintain that oral reading fluency serves as a strong indicator of overall reading competence and that fluency interventions that focus on increasing fluency have been shown to provide the most gains on fluency and comprehension.

There have been some past studies that have looked at the relationship between oral reading fluency and comprehension without an intervening treatment. For example, some studies found correlations of between 0.4 and 0.5 in the relationship between fluency and comprehension (Kranzler, Brownell & Miller, 1998; Valencia et al., 2010; Wiley & Deno, 2005). Other empirical studies reported moderate to high positive correlation between fluency and comprehension (Fuchs et al., 2001; Fuchs, Fuch, &
Maxwell, 1988; Klauda & Guthrie, 2008). Additionally, a study by Lai et al. (2014) investigated the reciprocal relationship between fluency and comprehension by testing three models over time. Only the first model in which fluency predicted comprehension showed most paths statistically significant. The second model testing the reciprocal relationships between adjacent time points and the third model testing long-term reciprocal effects were not significant. Clearly, many factors may have contributed to the differences in results. However, interventions focusing on increasing fluency, as in the present study which showed very strong positive correlations, have been associated with significant gains in both fluency and comprehension (Markell & Deno, 1997; Neddenriep, Fritz, & Carrier, 2011; Spencer & Manis, 2010).

While the majority of the findings from this study were found to validate research expectations, some results did not. For example, the null hypothesis, which claimed there is no statistical significant change in word recognition accuracy that develops with regular use of the FDL in a second grade classroom, could not be rejected statistically in this study. These findings were not consistent with the research expectation, which assumed that a statistical significant change should exist in word recognition accuracy. Word recognition accuracy is synonymous with decoding skills. The fact that word recognition accuracy did not have the anticipated result could be attributed to a number of factors. The researcher, while focusing on fluency and comprehension skills, may have overlooked decoding instruction during the FDL. In addition, students not proficient in decoding skills could have memorized the poems used in the FDL during the many repeated readings. Conversely, students might have approached the text primarily using decoding skills and operated largely at the word identification level. These phenomena
may explain some of the discrepancy between the research expectations and the finding among some of the second graders in the study. Consequently, this researcher will be cognizant of including reading decoding skill practice in future studies.

However, continuing to look at WRA scores in repeated measure analysis, the mean actually did increase and the standard deviation decreased from September through January. With a mean of 97.82 in September and a mean of 99.27 in January, the difference in percentages was small. In actuality, the more the mean improved, the more difficult it was to see a difference. This could be indicative of a small number of participants. Therefore, the class could have been better decoders than originally thought, and a greater number of participants would be needed to find a discernable difference.

In summation, this study presented the analysis of the data collected to answer the four research questions chosen to show the impact of the FDL on second grade students’ oral reading fluency and retelling comprehension skills. Findings from the data suggest that with regular use of the FDL from September through January, significant statistical improvements were seen in retelling comprehension, words read correctly per minute (wcpm), expression and volume, phrasing and intonation, smoothness, and pace in reading. Further, there was a statistically positive relationship between both word recognition accuracy and words correct per minute with retelling comprehension. Retelling comprehension increased as word recognition accuracy and words correct per minute increased. Results of this study suggest that reading instruction emphasize a range of learning strategies and activities that improve fluency and comprehension skills of students.
Implications

While a single study in one classroom such as this cannot provide all of the answers needed, there are some practical implications that can be gleaned from this study for a variety of stakeholders. In this section the results of this study are applied to suggest those implications.

Teachers

The findings and conclusions of this study have important implications for teachers of students in the primary grades. The ability to read fluently, at a good rate with expression and accuracy, correlates highly with reading competency and supports the research of others, such as Kuhn, Schwanenflugel, and Meisinger (2010) and Miller and Schwanenflugel (2008). Listening to students read and charting their fluency development is a way for teachers to not only measure the effects of instruction but plan for future instruction. For example, when students read a fluency measurement passage at an appropriate level, with a teacher supporting them and helping them self-monitor, they are not only participating in a good measure of reading performance, but working toward a good treatment for reading difficulties (Moskal & Blachowicz, 2006; Razinski, 2010).

Most importantly, this study supports the notion that reading fluency and comprehension performance can be significantly improved with effective teaching, as Allington contended (2006). Therefore, explicit instruction in oral reading fluency and comprehension are necessary classroom instructional practices. Reading involves active thinking strategies literate people use when they read. The Fluency Development Lesson (FDL) should be used as an intervention for fluency and comprehension development.
According to Vygotsky (1978), learning is a social process. Students construct meaning by interacting with each other and the text (Rosenblatt 1978, 1994). Students should be actively engaged before, during, and after reading. Allington (2006) maintained there are six research-based strategies that are central to improved school comprehension performance. Those useful research-based strategies include: activating prior knowledge, summarizing, the use of story elements, using imagery, students generating questions, and the teacher thinking aloud. The National Reading Panel (2000) emphasized the need for increased fluency and comprehension strategy instruction. The FDL provides an integrated strategy instructional approach for fluency and comprehension instruction. The students in this study developed the necessary fluency and comprehension skills that enabled them to find reading success with regular use of the FDL in their second grade classroom.

This study, like Zimmerman and Rasinski’s (2012) found that the FDL has the potential to positively impact student’s reading fluency and overall reading achievement. Classroom teachers should incorporate the FDL into their classroom routines. Further, the FDL incorporates methods of developing and improving fluency and comprehension such as repeated reading, choral reading, echo reading, and peer/buddy reading, all strategies supported by earlier research (Chard et al., 2002; Kuhn & Stahl, 2003; Rasinski, 2006). When students are provided with increased time spent reading connected texts, the benefits for not only struggling readers, but all readers, are many (Gambrell, 1984; Zimmerman & Rasinski, 2012). Since the FDL improves word recognition accuracy, automaticity, and comprehension, it should be used consistently in the classroom on a regular basis.
Teachers should also incorporate the FDL because it provides teachers with a time-efficient instructional routine, using authentic texts, for improving reading fluency and modeling fluent reading (Zimmerman & Rasinski, 2012). Using authentic, meaningful texts, such as poetry, as used in this study, encourages students to focus on reading for meaning. In addition, an eventual performance for an audience encourages a focus on meaningful oral interpretation. Consequently, the ultimate goal of the FDL is this “authentic sense-making” (Zimmerman & Rasinski, 2012, p. 181). Students are able to read with automaticity, better understand what they read, and transfer that learning to other readings. The combination of these FDL activities, using poetry, in a classroom setting positively impacted the fluency and comprehension skills of the second grade students in this study.

Administrators

Administrators make educational decisions that have a tremendous impact on the future of teachers and students. Since this study showed the importance of using the FDL in the classroom to facilitate fluency and comprehension development in second grade students, administrators need to support teachers in the use of the FDL and materials to integrate the FDL into the elementary curricula.

Administrators have the responsibility of insuring instructional time and allotted funds are well spent. Because of the research behind it, administrators should promote the use of the FDL and purchase and support the use of poetry, containing mostly fiction but occasionally nonfiction topics. They should provide information as to how teachers can access materials for fluency instruction in a time- and cost-effective manner. This can be done by purchasing classroom materials, providing internet sources or various
sources where materials can be found, and by using grant and funding monies available for teachers. The goal of such practices and programs should be to support teachers and students in the classroom so that they find themselves successfully engaged in research-based literacy activities.

In addition, administrators should require assessments to possess all the components of fluency. Many reading fluency assessments don’t assess rate, accuracy, and prosody in reading fluency. Since oral reading fluency is a critical link between word recognition and comprehension, then reading fluency assessments must incorporate a comprehension component. When programs of instruction and assessments separate fluency and word recognition from comprehension, the results can be detrimental to young readers (Allington, 2009; Pearson, 2006; Samuels, 2007). Therefore, administrators need to insure oral reading fluency assessments include automaticity, accuracy, prosody, and comprehension.

**Curriculum Directors**

This study demonstrated the importance of integrating the FDL into the curriculum in order to increase fluency and comprehension skills. With respect to staff development, fluency work encompasses several issues that are critical to classroom instruction and answers questions teachers may have about the reading development of their students (Blachowicz et al., 2012). The questions that arise from fluency instruction have effects far beyond the fluency instruction itself. Curriculum directors, through staff development, help teachers familiarize themselves with reading research and provide instruction that is appropriate in improving reading skills. Current research on oral reading fluency is critical in transforming the ways that students are taught to read.
Without a thorough understanding of the importance of oral reading fluency, teachers might not provide instruction that would promote student reading in a manner that would enable them to comprehend the texts they encounter. In addition, because literacy skills provide the foundation for much of the learning that takes place, professional development for teachers should demonstrate how to maximize student achievement by collaborating with colleagues in order to incorporate research-based literacy strategies and activities into classroom procedures and teaching.

Many school districts employ literacy coaches to provide ongoing literacy training to elementary teachers. Teachers need to teach reading by focusing instruction on the mental processes that underlie reading (Keene & Zimmerman, 1997). Keene and Zimmerman (1997) also revealed that proficient readers are like surgeons. Readers require a “tray of instruments” that they use to fix up comprehension problems (p. 198). In order to facilitate literacy professional development for teachers, literacy leaders need to help teachers give their students “instruments” they need to be comprehensive readers. Staff development projects should find ways to bring comprehensive literacy programs into every classroom in every school (Calkins, 2001).

In addition, literacy coaches and leaders who are responsible for professional development for teachers of fluency and comprehension strategies should look at what exceptional teachers of fluency and comprehension do that makes them so effective. One quality evident in exceptional teachers is that those teachers take the time to understand the strategy to be taught but also use the strategies in their own reading. Professional development opportunities should help teachers to think about their own thinking during reading so they can observe themselves and transfer that learning to their students. Also,
since most effective reading instruction is incorporated into a predictable daily, weekly, and monthly readers’ workshop (Keene, 2002), professional development opportunities should in-service teachers on how effective readers’ workshops are carried out.

Many teachers have not had the opportunities for classroom-based professional development so they can align their teaching practices with research in effective fluency and comprehension instruction. Teachers require opportunities to observe highly effective teachers in the classroom. In addition, teachers need on-site support from a staff developer who can model lessons and coach them as they attempt new practices and make their existing practices better. Successful teachers require extensive support for an extended period of time (NRP, 2000). Teachers should be encouraged to study and work together to develop appropriate solutions to fluency and comprehension instructional challenges.

**Teacher Educators**

This study demonstrated how regular use of the FDL improved both the fluency and comprehension skills of second grade students. Teacher educators and pre-service teachers need to learn from this and other studies that present the positive benefits of using the FDL. It is critical that the teacher education curricula and course requirements offered and mandated at institutions of higher education require pre-service teachers to have a conceptual understanding that reading is a meaning-making process (Smith, 1971) during which readers must rely on strategies to make sense of the text. To develop this conceptual understanding, teacher education programs need to include deliberate instruction on theory and practice of teaching and instructional practices that emphasize reading as a process of constructing meaning.
Specifically, the implementation of the FDL significantly impacted the fluency and comprehension development of the second graders in the study. Therefore, teacher candidates should not only be introduced to this model, but should have ample opportunities to implement the components of the FDL with students, to practice the components in authentic classroom settings, and receive supportive feedback throughout teacher education programs.

**Publishing Companies**

Many different groups can influence the curriculum. However, it is the publishers who have an impact on materials used in the classroom. Publishing companies need to insure that fluency is not overlooked as an instructional strategy in their reading programs. Incorporating the FDL in the reading materials publishing companies make available for teachers would be an effective way to include fluency instruction along with instruction in decoding and comprehension skills.

In an attempt to find ways to continue to motivate students and equip them with the necessary skills to achieve proficiency in reading, many districts are moving to fully online instructional materials. The FDL, since it is a proven strategy for increasing students’ fluency and comprehension skills, somehow needs to be included in the development of online resources, such as programs for teachers and students. An electronic version could be created for ease of teacher use. In addition, publishers could provide templates and rubrics to enable teachers to collect oral reading data, such as automaticity, accuracy, and prosody, as well as comprehension data in retellings of fiction and nonfiction passages. Educational publishers as well as all educational
stakeholders are wise to take into account the implications of this study and any past or future studies that demonstrate the positive benefits of using the FDL in the classroom.

**Implications for Future Research**

This quantitative study described how comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). Specifically, the researcher looked at how direct explicit oral reading fluency instruction using the Fluency Development Lesson developed the comprehension skills of second grade readers and deepened our understanding of this relationship. The findings and conclusions of this study provide directions for future research in the areas of oral reading fluency and comprehension by looking at a more diverse population and by implementing a qualitative case study including miscue analysis, retrospective miscue analysis, and interviews.

**Diverse Population**

A limitation of the present study was that the population of the school and classroom used in the study was homogenous. Additional research is needed using a population that differs from this school’s population. Even though this study showed a significant relationship existed between oral reading fluency and reading comprehension among second grade students with regular use of the Fluency Development Lesson, the lack of diversity in the classroom population could affect the results. In addition, the small number of Asian, Hispanic, and African Americans participating in the study did not accurately represent the proportion of minorities in the United States population. Therefore, any additional research in this area should include a more diverse population.
Similarly, this school’s population does not possess the economic diversity present in many United States classrooms. Approximately 20% of the population was considered economically disadvantaged. This percent of economic diversity present in the classroom used in the study is not representative of the United States population. Therefore, further research should be conducted with a more economically diverse population.

In addition, it might be beneficial to not only look at other grade level populations, but also ability grouping within the grade levels. There is little evidence of the effects of the FDL on students in upper elementary grades or middle school. Another study might focus on applying the FDL to older students to see if it is effective. Along those same lines, it would be interesting to sort the children within the grade levels according to their abilities to see which ability level showed the most growth. The results of these future studies expanding to older grade levels and ability levels would provide educators with much needed information to improve reading proficiencies within and among levels.

**Varied Texts**

The FDL encourages the use of short texts, such as poetry for implementation. In future studies, texts used in the implementation of the FDL could be conducted using different genres to look at a genre that might be particularly beneficial. In a related way, work on fiction and/or nonfiction texts could be incorporated into the FDL simultaneously or independently of each other. Further, leveled texts where students are reading texts at their independent or instructional reading levels may explain a more efficient way to find significant improvements in reading fluency and comprehension.
Finally, scaffolding texts by starting out using on-level texts and slowly graduating to more difficult texts might explain gains in comprehension resulting from fluency instruction using the FDL. Future research may extend the field’s knowledge about the relationship between oral reading fluency and comprehension by implementing the FDL using varied texts at varied levels.

**True Experimental Design**

The implementation of a true experimental design would provide further extensive research in the field of fluency and comprehension development. A key problem in experimentation according to Gall, Gall, and Borg (2007) is establishing a control group so that any change in the posttest can be attributed to the experimental treatment. Given this design, the researcher would randomly sample for a control group and an experimental group and justifiably generalize the results to a broader population.

The second graders participated in this study for one semester. Despite the significant gains during that time, a study that tracked the students through an entire year, or longer, would provide further insights into the long-term effects of the FDL. Therefore, further true experimental research for a longer period of time is needed to corroborate previous findings.

**Qualitative Case Study Design**

The implementation of a qualitative case study would provide extensive research in the field of fluency and comprehension development. Further, this case study could employ an embedded case study design (Yin, 2014) with the purpose of describing how fluency and comprehension skills develop with regular use of the Fluency Development
Lesson (FDL). Data could be collected using miscue analysis, retrospective miscue analysis, field notes, and interviews. Specifically, the researcher could look for patterns or commonalities in the data collected within and among the cases.

**Miscue analysis.** Since accuracy is one component of the Fluency Development Lesson, the researcher could look at miscue analysis, first developed by Kenneth Goodman (1969), as “a lens” through which a teacher can observe the reading process of their students (Y. Goodman, 1996). Analysis of a miscue can tell whether or not a reader’s miscues reflect good reading strategies (Weaver, 2002). For example, a miscue analysis could be done to offer insights into the reading process itself. By evaluating semantic, or meaning cues, syntactic, or grammar cues, and graphophonic, or letter-sound cues, researchers could determine if students are using cueing systems to predict meanings and monitor accuracy. Evaluating language cues can lead towards a greater understanding of what reading strategies both good and poor readers are using.

During the miscue analysis phases of this future study, miscues could be marked and coded using the RMI, Procedure I (Y. Goodman et al., 2005). Using this procedure, miscues could be collected and the researcher could consider whether these miscues resulted from semantic, syntactic, or graphophonic cues as students read. The miscues are then analyzed to determine how effectively readers use reading strategies to construct meaning.

**Retrospective miscue analysis.** As in miscue analysis, Retrospective Miscue Analysis, RMA, requires teachers and students to look at the miscues made and reading strategies used by a reader during the reading process. In contrast, RMA could be conducted after the reading occurs. Teachers and students are then able to look back at
the miscues made because the readings are tape recorded. These “metacognitive discussions” help readers to see what their miscues are and how they translate and edit what the author has written into understanding of the author’s words (Y. Goodman et al., 2005, p. 204). Students could be audio-taped reading a selection of their choice. After listening to their tape, students could complete a fluency rubric allowing them to assess their own fluency development in the areas of accuracy, automaticity, and prosody. Yetta Goodman (1996) called retrospective miscue analysis a readers’ reflection of their own reading processes. Retrospective miscue analysis could be a planned session where students listen to a tape recording of their reading and ask questions about or discuss their miscues, or mistakes. Retrospective miscue analysis could help readers reflect on their reading and develop strategies to become better readers (Weaver, 2002).

Field notes. Field note observations, which are fundamental to qualitative inquiry according to Rossman and Rallis (2003), could be gathered to represent observational data of a firsthand encounter with a phenomenon of interest that take place in a naturally occurring setting (Merriam, 2009). Field notes should be “highly descriptive” and “reflective” (Merriam, 2009, pp. 130, 131). In addition, Rossman and Rallis (2003) state that field notes are critical in the data collection process to record insights and impressions which compliment other data sources. Field notes could be collected by evaluating the oral readings which are audio recorded in order to record the students’ verbal expressions. The recordings should be transcribed into field notes within 24 hours to be sure observations were accurate.
**Interviews.** According to Yin (2014), interviews can be one of the most important sources of case study evidence and can provide important insights into “human affairs or actions” (p. 113). In planning reading instruction, students’ reading beliefs and how their reading proficiency is influenced by past and present reading instruction needs to be considered (Y. Goodman et al., 2005). The Burke Reading Inventory (2005) could be used to elicit information from each student about their reading beliefs and their strategies used during reading. This interview has 10 questions. The interview should be audio recorded and transcribed within 24 hours.

In this future study, the overall goal of data analysis could be to describe how the comprehension skills develop in second grade students with regular use of the Fluency Development Lesson (FDL). The data, consisting of observations, field notes, and interviews, would be analyzed in this case study in order to describe the learning processes or learning experiences and interactions of the Fluency Development Lesson on students in a second grade classroom.

**Data analysis.** The qualitative data in the investigation would follow the method of constant comparative analysis (Glasser & Straus, 1967) as outlined by Merriman (2009). In data analysis, the constant comparative method involves finding similarities and differences as one part of the data is constantly compared to other parts. The goal would be to uncover patterns in the data. This strategy would consist of three stages. In the first stage, all the information about the case would be brought together as incidents are compared, similarities and differences between all data sources are identified, and preliminary categories are developed. In the second stage, properties or concepts that describe a category would be identified within the categories. In the third stage, similar
categories would be combined and hypotheses, or “the suggested link between categories and properties” (Merriam, 2009, p. 200), generated. The actual writing of a description from the coded data could now be written.

The data would be collected continuously during this study. Teacher assessment of oral reading scores using miscue analysis, interviews, and students’ self-evaluations of audiotapes would give clues as to students’ abilities as well as developmental levels as readers. The researcher could examine the data from each data source and constantly compare them for categories, then attempt to find matching categories as new data were collected. Throughout the study, segments of one case (i.e., Student 1) would be constantly compared (Glasser & Straus, 1967) with the same segment of another case (e.g., Student 2).

Finally, the data would be then coded as themes emerge. Data from the assessment rubrics (Rasinski & Padak, 2005) would be examined to identify specific fluency and comprehensive literacy skills demonstrated by the students. The data would be then compared for differences and similarities across cases. The analysis of the data could be ongoing. Once the data are reduced, interpretations of the data would be written in a descriptive, narrative format (Merriman, 2009). Thus, this further research is needed in order to corroborate the researcher’s previous findings.

**Summary**

This chapter presented the analysis of the data collected to answer the four research questions chosen to show the impact of the FDL on second grade students’ oral reading fluency and retelling comprehension skills. Findings from the data suggested that with regular use of the FDL from September through January, significant statistical
improvements were seen in retelling comprehension, words read correctly per minute (WCPM), expression and volume, phrasing and intonation, smoothness, and pace in reading. Further, there was a statistically positive relationship between both word recognition accuracy and words correct per minute with retelling comprehension. Retelling comprehension increased as word recognition accuracy and words correct per minute increased.

In this study, the FDL proved to be an effective way of improving students’ reading performance in fluency and comprehension skills. Therefore, using the FDL in the classroom has the potential to provide positive outcomes for student reading fluency and ultimately in overall reading achievement. As educators attempt to find ways to achieve proficiency in reading, they will hopefully take into account the implications of this study and any past and future studies that demonstrate the positive benefits of using the FDL with their students.

Further research in the area will perhaps yield more data to support the findings in this study and provide ways to engage students in comprehensive reading classrooms where expressive and meaningful reading is celebrated. Also, the findings and contributions of this study provide educators further insight into how readers can improve their reading skills when exposed to authentic, interactive texts where discussion and activities focus on the meaning of passages. These improved understandings will assist educators in making appropriate choices when choosing a reading intervention program that helps students practice their oral reading fluency skills on their way to reading competence.
REFERENCES


Deeney, T. A. (2010). One minute fluency measures: Mixed messages in assessment and instruction. The Reading Teacher, 6(6), 440-450.


APPENDICES
APPENDIX A

IRB APPROVAL LETTER

Office of Research Administration
Akron, OH 44325-2302

June 13, 2014

Gail Evancho
5548 Fox Tail Circle NW
Canton, Ohio 44718

From: Sharon McWhorter, IRB Administrator

Re: IRB Number 201440507 “How do Fluency and Comprehension Literacy Skills of Second Grade Students Develop by Providing Regular Use of the Fluency Development Lesson?”

Thank you for submitting your IRB Application for Review of Research Involving Human Subjects for the referenced project. Your application was approved on June 13, 2014. Your protocol represents minimal risk to subjects and matches the following federal category for exemption:

☐ Exemption 1 - Research conducted in established or commonly accepted educational settings, involving normal educational practices.

☐ Exemption 2 - Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior.

☐ Exemption 3 - Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior not exempt under category 2, but subjects are elected or appointed public officials or candidates for public office.

☐ Exemption 4 - Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.

☐ Exemption 5 - Research and demonstration projects conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine public programs or benefits.

☐ Exemption 6 - Taste and food quality evaluation and consumer acceptance studies.

Annual continuation applications are not required for exempt projects. If you make changes to the study’s design or procedures that increase the risk to subjects or include activities that do not fall within the approved exemption category, please contact me to discuss whether or not a new application must be submitted. Any such changes or modifications must be reviewed and approved by the IRB prior to implementation.

Please retain this letter for your files. This office will hold your exemption application for a period of three years from the approval date. If you wish to continue this protocol beyond this period, you will need to submit another Exemption Request. If the research is being conducted for a master's thesis or doctoral dissertation, the student must file a copy of this letter with the thesis or dissertation.

Cc: L. Lenhart - Advisor
Cc: Valerie Callanan – IRB Chair

☐ Approved consent form/s enclosed
APPENDIX B

CONSENT FORM FOR OFF-CAMPUS SITE

Dear Mr. Reindel,

As you know, I am currently a doctoral student under the direction of Dr. Lisa Lenhart at the University of Akron. I have been working on completing my PhD in literacy for the past eight years. I am asking for your help in completing my doctoral dissertation by allowing me to conduct research in my classroom.

I am hoping to conduct a study to look at the relationship between fluency and comprehension skills in second grade students. As a second grade teacher here at Lake Cable Elementary, I spend a significant amount of time helping my students develop reading fluency skills through the use of daily poetry lessons, called the Fluency Development Lesson. In order to assess the students' reading progress, a fluency/comprehension assessment is conducted throughout the year. This reading assessment, the 3-Minute Reading Assessment: Word Recognition, Fluency, 
& Comprehension developed by Dr. Timothy Rasinski and Dr. Nancy Padak, is routinely conducted as part of the elementary curriculum at Lake Cable Elementary. I hope to answer the following question: How do comprehension literacy skills develop by providing regular use of the Fluency Development Lesson in a second grade classroom?

I have attached a copy of the Script of Verbal Instructions and a copy of the assessment scale for your convenience. I will use the Multidimensional Fluency Scale developed by Timothy Rasinski and Nancy Padak in order to rate each student on the four criteria found in the assessment scale.

There are no anticipated benefits or risks to these students, aside from helping me have a better understanding of the usefulness of the Fluency Development Lesson. The data gathered from this research will help teachers determine if in fact the Fluency Development Lesson has a positive impact on the fluency/comprehension development of second grade students. I will not publicly present any data that is identifiable by any students' name. I will keep the data in a secure location and destroy it upon completion of my dissertation. Data collected will be kept strictly confidential.

If you have any questions about this study, you may contact me or Dr. Lenhart at lenhartl@uakron.edu.

Thank you,

[Signature]

Gail Evancho

By signing below, I give consent for my students to participate in the above study.

[Signature]

Principal's Signature
### APPENDIX C

#### ADMINISTRATION AND SCORING AIDS

Word Recognition Accuracy (Decoding)
Divide the total number of words read correctly by the total number of words read for the 60-second reading time, and subtract the percentage of words read correctly from the total:

\[
\text{Percentage of words read correctly} = \frac{\text{Total number of words read correctly}}{\text{Total number of words read}} \times 100
\]

### Reading Fluency—Automatically

Count the number of words the student reads correctly during the 60-second reading. Words read correctly include those initially missed but corrected by the student. Use the chart to interpret results.

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</table>

### Comprehension

After the student has completed the 60-second reading and after you have read the entire passage to the student, have the student retell the passage. If the student is unable to retell anything, probe for specific information (e.g., "What is the main idea of the story?"). When the student has told you as much as he or she can remember from the passage, note the recall on the Comprehension Rubric:

- Student recalls a number of unrelated facts of varied importance. Rating 1
- Student recalls the main idea of the passage with a few supporting details. Rating 2
- Student recalls the main idea along with a fairly robust set of supporting details, although not necessarily organized logically or sequentially as presented in the passage. Rating 3
- Student recalls the main idea of the passage, presented in a logical order and/or supported by a robust set of details, and includes a statement of main idea. Rating 4
- Student recalls the main idea of the passage, presented in a logical order and/or supported by a robust set of details, and includes a statement of main idea. Rating 5

### Reading Fluency—Expression

Listen to the student's 60-second reading. Rate on the Multidimensional Fluency Scale.

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<thead>
<tr>
<th>Rating</th>
<th>Expression &amp; Volume</th>
<th>Pausing and Stuttering</th>
<th>Smootheness</th>
<th>Pace</th>
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- **Rating 1**: Reads words as if to get them out, little sense of trying to make text sound like natural language. Tends to read in a quiet voice.
- **Rating 2**: Reads to use voice to make text sound like natural language. Uses some stress but not in others. Focus remains largely on pronunciation of words. Still reads in a quiet voice.
- **Rating 3**: Reads with a distinct sense of phrase boundaries; frequently reads word-by-word.
- **Rating 4**: Reads in a monotone with little sense of phrase boundaries; frequently reads word-by-word.

### Total Scores

*This scale is an adaptation of one developed by Snelick & Rosenblad, 1981.*

- **Vocal Quality**: 1 to 4
- **Pausing and Stuttering**: 1 to 4
- **Smoothness**: 1 to 4
- **Pace**: 1 to 4

#### Administration and Scoring Aids

- **Content Area**: Word Recognition, Fluency, and Comprehension—Grade 1-4
- **Scholastic Teaching Resources**

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58
APPENDIX D

SCRIPT OF VERBAL INSTRUCTIONS

**Researcher:** Today, you are going to read a short story aloud to me. I don’t want you to worry if you get stuck on a word. Just do your best and use your good reading skills. If you do get stuck and can’t figure it out, then I will tell you the word. You will read the entire story. Remember, it is not a race. Just read as you normally read in school. Finally, I’ll ask you to tell me about the story. Try to include the main idea of the story and as many details as you can remember. Okay, are you ready? Begin reading.
### CLASS RECORD SHEET

**Teacher:**

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<tr>
<th>Student Name</th>
<th>Date of Testing (9/4/14)</th>
<th>Word Recognition Accuracy (wpm)</th>
<th>Fluency-Automaticity (wpm)</th>
<th>Multidimensional Fluency Scale</th>
<th>Expression and Volume</th>
<th>Phrasing and Intonation</th>
<th>Smoothness</th>
<th>Pace</th>
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**Grade:**

**School Year:**

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**APPENDIX E**

CLASS RECORD SHEET