THE IMPACT OF ONE-ON-ONE TUTORING
ON FIRST-FOURTH GRADE STUDENTS’ WORD WRITING ABILITIES
FOR COMPLEXITY, ACCURACY, AND FLUENCY

A dissertation presented to
the faculty of
the College of Education of Ohio University

In partial fulfillment
of the requirements for the degree
Doctor of Philosophy

Julie Barnhart Francis
November 2006
This dissertation entitled

THE IMPACT OF ONE-ON-ONE TUTORING
ON FIRST-FOURTH GRADE STUDENTS’ WORD WRITING ABILITIES
FOR COMPLEXITY, ACCURACY, AND FLUENCY

by

JULIE BARNHART FRANCIS

has been approved for
the Department of Teacher Education
and the College of Education by

Dorothy J. Leal
Professor of Teacher Education

Renée A. Middleton
Dean, College of Education
Abstract

BARNHART FRANCIS, JULIE, Ph.D., November 2006, Teacher Education

THE IMPACT OF ONE-ON-ONE TUTORING ON FIRST-FOURTH GRADE
STUDENTS’ WORD WRITING ABILITIES FOR COMPLEXITY, ACCURACY, AND
FLUENCY (162 pp.)

Director of Dissertation: Dorothy J. Leal

This study examined the effectiveness of a one-on-one tutoring intervention in a university-school program. Twenty-five students in grades one through four in a small Midwest elementary school were identified by classroom teachers as lowest-performing in reading and writing and matched to twenty-five university tutors in an early childhood teacher education program at a large state university. Students met one-on-one with the university tutor two times a week for 60 minutes for 14 weeks. Tutoring sessions focused on assessment and remediation of reading and writing difficulties. During the first and final weeks of the tutoring, the participating school conducted a school-wide Word Writing CAFÉ (Leal, 2005/2006) assessment of all students in grades one through four to assess students’ gains in three aspects of word writing for fluency, accuracy, and complexity as determined by the pretest and posttest assessments. Although quantitative findings did not show a statistically significant effect for tutoring treatment, the results of the treatment may be interpreted as successful since the lower-performing students made similar gains in word writing to their average-performing peers.

Approved:

Dorothy J. Leal

Professor of Teacher Education
Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>4</td>
</tr>
<tr>
<td>List of Tables</td>
<td>11</td>
</tr>
<tr>
<td>List of Figures</td>
<td>12</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>13</td>
</tr>
<tr>
<td>Rationale</td>
<td>14</td>
</tr>
<tr>
<td>Literacy Perspectives Today</td>
<td>14</td>
</tr>
<tr>
<td>Literacy Intervention and Tutoring</td>
<td>16</td>
</tr>
<tr>
<td>The Role of Writing Assessment in Literacy Intervention</td>
<td>18</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>19</td>
</tr>
<tr>
<td>Research Hypotheses</td>
<td>20</td>
</tr>
<tr>
<td>Research Questions</td>
<td>20</td>
</tr>
<tr>
<td>Null Hypotheses</td>
<td>21</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>22</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>23</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>24</td>
</tr>
<tr>
<td>2. Review of the Literature</td>
<td>27</td>
</tr>
<tr>
<td>Literacy Perspectives Today</td>
<td>27</td>
</tr>
<tr>
<td>Theoretical Underpinnings</td>
<td>27</td>
</tr>
<tr>
<td>What is Reading?</td>
<td>29</td>
</tr>
<tr>
<td>What is Writing?</td>
<td>30</td>
</tr>
<tr>
<td>Reciprocal Processes: Reading and Writing</td>
<td>30</td>
</tr>
</tbody>
</table>
Literacy Development .......................................................... 31
  Stages of Literacy Development ............................................. 31
  Role of the Teacher ............................................................ 33

Literacy Intervention and Tutoring ......................................... 34
  Components of Effective Literacy Intervention ............................. 34
  Types of Intervention .......................................................... 36
    Preventive Intervention ....................................................... 36
    Intervention for Acceleration .............................................. 38

Response to Intervention .................................................. 38

Factors that Influence Intervention and Tutoring ...................... 41
    Levels of Expertise in Interventions .................................. 41
    Levels of Intensity in Interventions .................................... 42

Intervention Models ............................................................ 44
    Success for All ............................................................... 44
    Reading Recovery ........................................................... 46
    The Howard Street Tutoring Program .................................. 46
    Book Buddies ................................................................. 48
    The America Reads Challenge ............................................ 49

The Role of Writing Assessment in Intervention ....................... 50
  Relevance of Writing Assessments ........................................ 51
  Assessing Writing: Process and Product ................................ 51
    Authentic Assessments ..................................................... 52
    Standardized Assessments ................................................. 56
Bridging Authentic & Standardized Assessments ……………… 57
Assessing Word Writing Skills …………………………………………. 58
Fluency …………………………………………………………………..59
Accuracy ………………………………………………………………… 60
Complexity ………………………………………………………………61
Summary …………………………………………………………………………62
3. Methodology …………………………………………………………………………..64

Population Identification and Sampling Plan ……………………………………65
Student Identification ………………………………………………………………..65
Sampling Plan ………………………………………………………………………67
Data Collection Procedures …………………………………………………………… 68
Identification of the Researcher ……………………………………………………69
Selection of Tutors……………………………………………………………………..69
Course of Study for Tutors …………………………………………………………70
Fall ……………………………………………………………………………………71
Winter …………………………………………………………………………………71
Spring ……………………………………………………………………………………71
Selection of Students ………………………………………………………………..72
Procedures for Tutoring Sessions ……………………………………………………73
Winter Quarter Tutoring Plan……………………………………………………..75
Winter Quarter Tutoring: Assessment …………………………………………..77
Spring Quarter Tutoring Plan …………………………………………………….. 78
Spring Quarter Tutoring: Remediation …………………………………………..79
Grade Level ................................................................. 112
Tutor Group ............................................................... 112
Word Writing Accuracy .................................................. 112
Grade Level ................................................................. 113
Tutor Group ............................................................... 113
Word Writing Complexity .............................................. 114
Grade Level ................................................................. 114
Tutor Group ............................................................... 114
Pearson Correlation ....................................................... 115
Supplemental Analyses of Grade Level Differences ............ 116
Discussion of the Findings .............................................. 116
Word Writing Fluency ................................................... 117
Grade Level ................................................................. 117
Tutor Group ............................................................... 118
Word Writing Accuracy ................................................. 119
Grade Level ................................................................. 119
Tutor Group ............................................................... 119
Word Writing Complexity .............................................. 120
Grade Level ................................................................. 121
Tutor Group ............................................................... 121
Implications of the Study .............................................. 122
Word Writing Fluency ................................................... 122
Implications for Teachers .............................................. 122
List of Tables

Table 1. Number of Students According to Grade Level………………………………...68
Table 2. Number of Tutored Students According to Grade Level………………………. 73
Table 3. Descriptive Statistics for Fluency Gain Dependent Variable………………….. 92
Table 4. Tests of Between-Subjects Effects for Fluency Gain Dependent Variable……. 93
Table 5. Descriptive Statistics for Accuracy Gain Dependent Variable………………… 96
Table 6. Tests of Between-Subjects Effects for Accuracy Gain Dependent Variable….. 97
Table 7. Descriptive Statistics for Complexity Gain Dependent Variable…………… 100
Table 8. Tests of Between-Subjects Effects for Complexity Gain Dependent Variable. 101
Table 9. Pearson Correlations……………………………………………………………… 104
Table 10. Correlations for Dependent Variables Gain Scores………………………… 106
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Estimated Marginal Means for Fluency Gain</td>
<td>94</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Estimated Marginal Means for Accuracy Gain</td>
<td>98</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Estimated Marginal Means for Complexity Gain</td>
<td>102</td>
</tr>
</tbody>
</table>
CHAPTER ONE

Introduction

One-on-one tutoring is an instructional method in a literacy intervention. Literacy, for the purpose of this study, is defined as reading and writing. Literacy interventions are extraordinary instructional supports for children who have difficulties in reading and writing (Allington, 2002; Snow, Burns, & Griffin, 1998). Most literacy interventions are designed to prevent the incidence of difficulties in reading and writing (Strickland, 2002), while other literacy interventions are designed to accelerate reading and writing skills of struggling readers to that of average-achieving peers (Shanker & Ekwall, 2002). No one instructional method in a literacy intervention has been identified to be superior, although one-on-one tutoring has produced more successful results (D’Agostino & Murphy, 2004; Duffy-Hester, 1999; Elbaum, Vaughn, Hughes, & Moody, 2000).

Several components have been found to influence the effectiveness of literacy interventions. One component is the appropriateness of the instruction tailored to students’ needs in reading and writing (Johnston, 2003; Serafini, 2001; Valencia & Buly, 2004). Assessments, properly-designed and utilized, lead to appropriate instruction (International Reading Association, 2006).

Another component of effective literacy interventions is the abundance of authentic reading and writing activities incorporated in the intervention lessons (Lipson, Mosenthal, Mekkelsen, & Russ, 2004). Writing, in particular, is essential to extending children’s understanding and use of increasing levels of print (Schmitt, Askew, Fountas, Lyons , & Pinnell, 2005). Word writing is specifically important for the learning of high-
frequency words, phonemic awareness, and spelling strategies (Cunningham & Allington, 2003).

This study examined the effects of a one-on-one literacy intervention on the word writing abilities of elementary students identified as struggling readers and writers. A diagnostic measure of word writing called the Word Writing CAFÉ was used to assess students’ gains in word writing fluency, accuracy, and complexity.

Rationale

Literacy interventions are vastly different in design, implementation, and performance. Variation among literacy interventions includes instructional and assessment approaches, levels of teaching expertise, levels of program intensity and duration, and evaluation of effectiveness. In order to understand all these aspects, it is important to look at the following: 1) diverse literacy perspectives, 2) models of literacy interventions, and 3) the role of assessment, expressly that of writing, in literacy interventions.

Literacy Perspectives Today

A review of the literature revealed two divergent and influential theories of reading: the bottom-up reading model (Adams, 1990; Chall, 1983; Yopp & Yopp, 2000) and the top-down reading model (Goodman, Hood, & Goodman, 1991; Stahl & Miller, 1989; Strickland, 1994/1995). These opposing theories have given way to a more balanced approach to reading (Cowen, 2003; Fitzgerald, 1999) that incorporates elements of both. Marie Clay (1991; 2001; 2005) advanced a theory of reading that focused on the reciprocal processes of reading and writing. Her theory, called literacy processing,
emphasizes complex cognitive and perceptual problem-solving in the brain during the acts of reading and writing.

Reading is a message-getting, problem-solving activity (Clay, 2005). Writing is a message-sending, problem-solving activity (Clay, 2005). The reciprocal nature of these processes facilitates literacy development (Clay, 2001). Current research studies show that it is control in writing that advances the complex understandings of details in print, phonological awareness, and the sequential organizations of printed language and, as a result of this control, meaning and structure of what is being written or read can become more speeded and sophisticated (Clay & Tuck, 1993; Kucer, 2001; National Writing Project & Nagin, 2003).

Literacy development is a continuum of many overlapping stages of learning to read and write (Cooper & Kiger, 2005). Five commonly-accepted stages of literacy development include: 1) early emergent literacy in which children lay a foundation for literacy influenced by oral language development and curiosity of print; 2) emergent literacy in which children become more aware of standard language structures, alphabet letters and concepts about print; 3) beginning reading and writing in which children begin to read and write in conventional ways; 4) almost fluent reading and writing in which children read and write with growing complexity and flexibility; and 5) fluent reading and writing in which children master and expand their literacy practices for school-related areas and all domains of life.

The teacher is considered key to children’s development in literacy learning (Pearson, 2004; Rubin, 2001). Studies indicate that exemplary teachers are those responsive to students’ developing literacy performance, intervening to provide support
required to advance students’ learning to the next level of literacy independence (Lyons, Pinnell, & Deford, 1993; McEneaney, Lose, & Schwartz, 2006; Pressley et al., 2001).

While researchers tend to agree that children learn despite the choice of instructional approach based on differing theories of reading, that children move fluidly through stages of literacy development, and that the role of teacher is critical to the children’s literacy development, there continues to be a gap in the literature regarding the teaching of writing in the literacy development of children.

**Literacy Interventions and Tutoring**

A review of effective literacy interventions and tutoring programs reveals several common principles. These principles include:

1) emphasis on more intensive interventions such as one-on-one tutorial models (D'Agostino & Murphy, 2004; Duffy-Hester, 1999; Elbaum, Vaughn, Hughes, & Moody, 2000),

2) explicit instruction in the context of authentic reading and writing activities (Pressley, 2006),

3) appropriateness of individualized instruction informed by assessment (Johnston, 2003; Serafini, 2001; Valencia & Buly, 2004),

4) professional development for teachers and tutors (Allington & Cunningham, 2001; Pinnell, Lyons, Defor, Bryk, & Seltzer, 1994),

5) shared responsibility for all students by all school personnel (Taylor, Pearson, Peterson, & Rodriguez, 2005), and

6) increased parental involvement (Englund, Luckner, Whaley, & Egeland, 2004; Tracey, 2000).
Two types of literacy interventions and tutoring programs, preventive interventions and interventions for acceleration, are identified in the literature (Allington, 2005). Preventive interventions, which include early intervention programs, focus on reducing the incidence of reading difficulties (Strickland, 2002). Interventions for acceleration focus on speeding up literacy development by adding instructional support for under-achieving students (Shanker & Ekwall, 2002). A third, new type of intervention called Response to Intervention provides a three-tiered model with increasing levels of intervention for all areas of academics, including literacy, at each tier (Boswell, 2005; National Joint Committee on Learning Disabilities, 2005).

Two factors greatly influence the effectiveness of literacy interventions: levels of expertise and levels of intensity (Allington, 2005; National Institute of Child Health and Human Development, 2000). Levels of expertise refer to the training and professional development of the teachers and tutors delivering the interventions (Elbaum et al., 2000; Pinnell et al., 1994; Wasik & Slavin, 1993). Levels of intensity refer the students’ engagement in the learning (Ramey & Ramey, 1998) and the ratio of teachers to students in the intervention (Mathes et al., 2005; O'Connor, 2000; Simmons, Kame'Enui, Stoolmiller, Coyne, & Harn, 2003; Torgesen, Rashotte, Alexander, Alexander, & Macphee, 2003).

A look at intervention models, such as Success for All (Slavin & Madden, 2006), Reading Recovery (Clay, 1991), and the Howard Street Tutoring Program (Morris, 2005), shows more evidence of successful results from programs that implement common principles of effectiveness. These models also use various instructional components,
levels of teacher expertise, and levels of intensity as part of their emphasis on intervention for prevention or acceleration.

Although a review of the literature finds certified teachers as most expert and influential in determining the effectiveness of literacy interventions, little research looks at the value of pre-service teachers, enrolled in teaching certification programs, in delivering individualized literacy instruction to struggling students. And, while most interventions are designed for either the prevention or the acceleration of literacy learning, very few models, with the exception of school reform programs such as Success for All, incorporate ongoing, one-on-one instruction for struggling students from early grade to higher grade levels. As the intention of the recent Response to Intervention initiative seems to be the provision of literacy supports in the manner of small-group and one-on-one interventions for students at-risk for reading failure in any grade level, more research is still needed to evaluate the feasibility and effectiveness of this.

The Role of Writing Assessment in Literacy Intervention

Purposeful assessment embedded in instruction is important for students identified as needing literacy intervention so that intervention is individualized to their needs (Akhavan, 2004). Assessing students’ literacy performance in writing is essential in determining their knowledge of print, comprehension, and self-monitoring strategies. Students’ writing can be assessed in authentic, standardized, or diagnostic ways.

Authentic assessment involves writing for real and personal purposes (Calkins, 1994). It may take two broad forms in this process: qualitative or quantitative. Qualitative assessments are descriptive measures of students’ writing development, such as portfolios and writing folders (Tierney, Carter, & Desai, 1991). Quantitative assessments use
numbers to explain student development in writing, such as rubrics (Akhavan, 2004) and checklists (Reutzel & Cooter, 2003).

Standardized assessments are used to measure how well students achieve various levels of literacy learning and to compare one group of students to other groups (Cooper & Kiger, 2005). One type of standardized measure is a diagnostic test. It provides discrete information about individual students’ literacy performance (Rubin, 2001).

Two assessments have been identified as standardized measures that provide specific information about a student’s writing: Clay’s (2001) An Observation Survey of Early Literacy Achievement and Leal’s (2005/2006) Word Writing CAFÉ. While Clay’s assessment looks at several early literacy tasks that include accuracy in word writing in first grade, Leal’s assessment is the only standardized, diagnostic measurement for assessing three separate aspects of first through sixth graders’ word writing abilities for fluency, accuracy and complexity.

Researchers and practitioners in the field of education acknowledge the significance of assessment to instruction. Yet, very few assessments are designed to objectively assess aspects of writing, particularly aspects of word writing such as fluency, accuracy, and complexity. A further look at the use of the Word Writing CAFÉ as an effective assessment of writing will help inform current research.

**Statement of the Problem**

As a result of national educational mandates, states have elevated both the achievement standards of reading and writing performance and the stakes for students who do not meet those standards. Consequently, there has been an increased push for
quality intervention programs for low-performing students. Debates continue over the most effective design and implementation of literacy interventions.

Little research has been conducted on the effects of one-on-one tutoring provided by pre-service teachers on the writing skills of at-risk students. It needs to be determined if pre-service teachers, providing consistent, ongoing one-on-one tutoring, can help to improve the word writing abilities of struggling students across elementary grade levels by using diagnostic information from an objective word writing assessment and emphasizing writing activities tailored to the needs of the tutees in the tutoring sessions.

This study sought to determine the effectiveness of a university-school tutoring program by analyzing its influence on young students’ growth in word writing abilities. This study specifically explored the impact of one-on-one tutoring on students’ skills for learning to write an increased number of words, an increased number of correctly spelled words, and an increased number of multi-syllabic words.

Research Hypotheses

Research Questions

The research questions that this study explored were:

1. Are there significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

1a. Are there significant differences in gains in word writing fluency between grade levels?

1b. Does grade level interact with tutor group with respect to gains in word writing fluency?
2. Are there significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

   2a. Are there significant differences in gains in word writing accuracy between grade levels?

   2b. Does grade level interact with tutor group with respect to gains in word writing accuracy?

3. Are there significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

   3a. Are there significant differences in gains in word writing complexity between grade levels?

   3b. Does grade level interact with tutor group with respect to gains in word writing complexity?

*Null Hypotheses*

The null hypothesis states that there is no effect as the result of adding the treatment. Thus, the null hypotheses for this study are stated as:

Null Hypothesis 1

\[ H_{01}: \text{There are no significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring.} \]

\[ H_{1a}: \text{There are no significant differences in gains in word writing fluency between grade levels.} \]
H_{1b}: There is no significant interaction between grade level and tutor group with respect to gains in word writing fluency.

Null Hypothesis 2

H_{02}: There are no significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring.

H_{2a}: There are no significant differences in gains in word writing accuracy between grade levels.

H_{2b}: There is no significant interaction between grade level and tutor group with respect to gains in word writing accuracy.

Null Hypothesis 3

H_{03}: There are no significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring.

H_{3a}: There are no significant differences in gains in word writing complexity between grade levels.

H_{3b}: There is no significant interaction between grade level and tutor with respect to gains in word writing complexity.

Significance of the Study

This study may contribute valuable information regarding the design and implementation of effective support programs that provide access to intense intervention for low-achieving students. The university-school tutoring program sets up a unique research opportunity for the investigation of factors related to the expertise of university
tutors who are pre-service teachers enrolled in a reading endorsement college program
and of factors related to the intensity of a tutoring program designed as an extended
school day effort for low-performing students in grades one through four. Information
regarding the university-school tutoring program’s emphasis on personalized, strategic
instruction in writing and links to students’ continuous writing assessments may add to
the information regarding instructional and assessment models of effective literacy
interventions.

Limitations of the Study

This study sought to examine the impact of a university-school one-on-one
tutoring program on young students’ growth in word writing abilities. The following
limitations applied:

1. This study lasted for 14 non-consecutive weeks within a 5-month period and did
   not extend for an entire school year of observation or study.

2. The number of student participants in the tutored, treatment group was small.

3. The great variety and quantity of intervention efforts at the rural, elementary
   school involved in the study may have impacted the results of the treatment.

4. The age of the data for the study may have limited the questions to be
   investigated.

5. Lack of randomized assignment for the treatment and control groups may have
   limited the results.

6. The student participants in this study are reading well below grade level, thus they
do not represent national norms in relationship to the average literacy
achievements of primary-aged students.
Definition of Terms

Important terms to the study are defined as follows:

1. Accuracy: the ability to spell words correctly, without errors
2. Accuracy score: the total number of written words spelled correctly, without errors
3. Assessment: process of gathering information about students’ literacy growth (Cooper & Kiger, 2005)
4. Authentic literacy activities: reading and writing for real and personal purposes
5. Balanced approach: describes the reading process as both meaning and text driven (Cowen, 2003; Fitzgerald, 1999)
6. Complexity: the number of syllables in a word
7. Complexity score: the sum of the number of syllables in the total written words spelled correctly divided by the total written words spelled correctly
8. Decodable books: text that have high number of words that sound like they are spelled (Fox, 2004)
9. Effect size: difference between the means of the treatment and control groups divided by the control group’s standard deviation (Slavin, 2005)
10. Fluency: “the ability to write accurately as well as quickly” (Leal, 2005-2006, p. 340)
11. Fluency score: the total number of written words
12. Graphophonic: letter-sound relationships in print
13. Guided reading: “context in which a teacher supports each reader’s development of effective strategies for processing novel texts at increasingly challenging levels of difficulty” (Fountas & Pinnell, 1996, p.2)

14. Literacy: “the knowledge and skills necessary to read and write” (Ruddell, 2005, p.7)

15. Literacy interventions: extraordinary instructional supports for children who have difficulties in reading and writing (Allington, 2002; Snow et al., 1998)

16. Literacy processing: reading and writing as complex literacy activities considered separately and together (Clay, 2001)

17. Meta-analyses: quantitative syntheses of research in which effect sizes are averaged (Slavin, 2005)

18. Orthography: written system of the language; the correct sequence of letters, characters or symbols (Bear et al., 2003)

19. Phonemes: the smallest unit of speech that distinguishes one word from another (Bear et al., 2003)

20. Phonics: the systematic relationship between letters and sounds (Fox, 2004)

21. Phonological awareness: awareness of and ability to manipulate sounds, rhymes, and syllables (Fox, 2004)

22. Reading: message-getting, problem-solving activity (Clay, 2005)

23. Reciprocal processes: reading and writing rely on the same cognitive and perceptual processing networks (Clay, 2001)

24. Remediation: teaching skills and strategies in order to overcome literacy difficulties
25. Running records: tool for coding and analyzing children’s reading behaviors
   (Fountas & Pinnell, 1996)

26. Scaffolding: instructional support in the teacher-student interaction (Clay &
    Cazden, 1990)

27. Sight words: words recognized at first sight (Bear et al., 2003)

28. Structure: syntax; how oral language is put together (Fountas & Pinnell, 1996)


30. Word work: word study approach to instruction in phonics, spelling, word
    recognition, and vocabulary (Bear et al., 2003)
CHAPTER TWO

Review of the Literature

The major purpose of this study was to investigate the effects of tutoring low-performance reading students on the word writing abilities in fluency, accuracy, and complexity when using a diagnostic assessment called the Word Writing CAFÉ as an evaluation instrument. Therefore, the review of literature for this study focuses on: 1) literacy perspectives today, 2) literacy intervention and tutoring, and 3) the role of writing assessments in intervention.

**Literacy Perspectives Today**

To better understand the role of literacy interventions in preventing reading difficulties in children, a look at literacy perspectives is essential. Researchers and practitioners in the field of literacy have generated a vast amount of literature related to teaching reading and writing. In the following section, reading theories will be acknowledged, with emphasis on a theory of literacy processing. Comprehensive definitions of reading and writing, as well the reciprocal nature of reading and writing, will be presented. Stages of literacy development and the role of the teacher will be explored.

**Theoretical Underpinnings**

In the last three decades, much research has been conducted to establish a comprehensive, commonly-accepted theory of reading and methods of instruction (Foorman & Torgesen, 2001; National Institute Of Child Health And Human Development, 2000; Pressley, 1998; Snow, Burns, & Griffin, 1998). During that time, two diverse reading theories, each at odds for advocating exclusive elements of the
reading process, pivoted in and out of the political, curricular and philosophical realms of the reading field (Pearson, 2004).

The bottom-up reading model (Adams, 1990; Chall, 1983; Yopp & Yopp, 2000) centered on the skill processes of reading. Its code emphasis conceptualized the reading process as one of letter-sound correspondences. The emphasis was on the reading material rather than the reader. Choices of reading methods and materials, including basal textbooks and decodable texts, followed a prescribed scope and sequence of skill and item learning. Proponents of systematic phonics instruction regarded this theory of reading as primary.

The top-down reading model (Goodman, Hood, & Goodman, 1991; Stahl & Miller, 1989; Strickland, 1994/1995) focused on the reading process as a holistic experience. It stressed the use of literature-based reading activity rather than direct instruction of reading skills. Emphasis was on the reader and the prior knowledge and language ability that the reader brought to the text to make meaning of it. Advocates of “whole language” approaches to literacy instruction selected this theory of reading as primary.

Currently, despite a political climate that spotlights skill-driven curriculum (U.S. Department of Education, 2001), most reading experts subscribe to the interactive theory of reading (Gavelek, Raphael, Biondo, & Wang, 2000). The interactive reading model, also referred to as a balanced approach to reading (Cowen, 2003; Fitzgerald, 1999), describes the reading process as both meaning and text driven, a process in which the reader connects prior knowledge to new information in the text. Proponents of the interactive theory of reading support authentic literacy texts and tasks while also calling
for explicit instruction for phonics, word recognition, comprehension, spelling, and writing.

Clay (1991; 2001; 2005) interpreted the different theories of reading as simple theories of reading because each pointed to what was neglected by the other. She recognized that little research had yet been published about the processes of writing at the beginning stages of literacy learning. She advanced a more complex theory of reading and writing informed by her study of multiple disciplines, works of many reading theorists, and her own studies in psychology and child development.

Clay referred to reading and writing as literacy activities considered separately and together; a theory called literacy processing. Based on her theory, literacy processing involves complex cognitive and perceptual thinking that can be systematically observed by children in the acts of reading and writing and can change rapidly over time with the guidance of an expert other like a teacher. Her theory emphasized reading and writing as problem-solving processes in the brain that link knowledge of the world, literate practices, and oral language to the written code of communication. Her theory stressed how reading and writing on continuous text extend the neural networks of the brain to continuously advance the processing system in literacy development.

To fully understand the concept of literacy processing, a basic definition of reading and writing will be discussed.

*What is reading?* Reading is a message-getting, problem-solving activity (Clay, 2005). As children begin to read, they must learn how their oral language relates to the text. They make the language-to-print link only when they have learned the arbitrary rules of how to work on the visual features of printed text (Clay, 2005). Visual
information in the text is integrated with additional sources of information including phonological awareness, syntactic language structures, and text variability to bring meaning to continuous written communication (Schmitt et al., 2005). In a fraction of a second, the eyes pick up print information and the brain works on all the information, forms a possible response, and confirms or rejects its hypothesis. The more the act of reading is practiced on text of appropriate difficulty, the more powerful and flexible it becomes (Clay, 2001).

What is writing? Writing is a message-sending, problem-solving activity (Clay, 2005). During the action of writing, the literacy process is slowed down so details of print, phonological awareness, and organizational and sequential organizations of the printed language become more salient. Attention is given to every feature of every letter in correct sequence, to words one after the other in continuous text, and to composing language. Change over time in control over clusters of letters frees children’s attention to think more about the meaning and structure of what is being written and written production becomes more speeded and sophisticated (Schmitt et al., 2005).

Reciprocal processes: reading and writing. Clay’s theory of literacy learning acknowledges that both activities of reading and writing rely on the same cognitive and perceptual processing networks. Readers have to do certain things with language which overlap and enhance what writers have to know or do with language (Clay, 2001). Children’s knowledge of writing during reading and understandings from reading when writing text facilitate literacy development when a variety of text are taught and explored (Fried, 2006).
An early study by Clay and Tuck (1993) showed longitudinal evidence that when writing has been neglected or left to lag behind reading progress, children will not continue to make satisfactory progress in both reading and writing. Current research studies (Kucer, 2001; National Writing Project & Nagin, 2003) support the parallel nature of the cognitive skills needed to acquire writing and reading, finding that writing taught as a process, integrated with complex skills of problem-solving, analysis, and synthesis, is the most effective way to teach young children to write.

**Literacy Development**

Literacy development is viewed as a continuum of several fluid stages of learning to read and write. As every child is different, the rate at which every child progresses through the learning continuum differs, as does every child’s ability to develop all of the characteristics, strategies, and skills in one stage before beginning development in another stage (Cooper & Kiger, 2005). The complex network of language, reading and writing are involved in “circular causation” as children advance through the stages of literacy development (Clay, 2004), building a processing system that expands and extends in speed, range, and efficiency over time (Clay, 2001).

To understand literacy development, it is necessary to understand literacy stages and the role of the teacher.

**Stages of literacy development.** There are five commonly-accepted overlapping stages of literacy development described as follows (Cooper & Kiger, 2005):

1. Early Emergent Literacy: At this stage, prior to entering formal school settings such as kindergarten, children lay a foundation for literacy. They develop aspects of oral language and become curious about print. Literate
home environments or sound preschool experiences expose children to books and print, as well as prepare children to be fluent users of their first language (Clay, 1993).

2. Emergent Literacy: During this stage, approximately the end of kindergarten or the beginning of first grade, children become more aware of standard language structures, names of alphabet letters, and writing letters, particularly letters in their name. Concepts about print, which include directionality and matching spoken words to print, also emerge at this stage.

3. Beginning Reading and Writing: In this stage, which can last through first grade for some children and into second or third grade for others, children begin to read and write in conventional ways. Children develop ways to monitor and correct reading and writing tasks, word analysis capacities increase, and fluency develops as oral language and worldly knowledge expand.

4. Almost Fluent Reading and Writing: During this stage, a period near the end of second grade and continuing to fourth or fifth grade, children work all aspects of literacy tasks with growing complexity, flexibility, and refinement. Oral language accounts for an increasing vocabulary, the writing process is faster, written products are more accurate, and reading is processed silently.

5. Fluent Reading and Writing: By this stage, generally beginning in fourth grade and extending throughout years of formal education and beyond, children learn to use oral language, reading and writing on a variety of text
and for a variety of purposes. Children develop, master and expand a full array of literacy practices related to understanding and communicating in all school-related content areas and in all domains of life.

*Rrole of the teacher.* School is commonly considered the most important site for children’s literacy development (Fang, 1999) and teachers the key to the literacy development of children (Rubin, 2001). In spite of the pedagogical extremes among researchers and some educators, studies show that exemplary teachers, those who nurture high student achievement and are respected by their peers, exhibit a balanced repertoire of instructional methods and materials. Teachers facilitate learning by establishing authentic reading and writing activities, intervening to provide supportive demonstrations or explicit instructions required to shift children’s learning to the next level of literacy independence (Pearson, 2004).

Based on Vygotsky’s (1978) theory of cognitive development which emphasized the role of social collaboration through conversation, good teaching operates in a social context that supports teacher-student interactions (Bruner, 1986). Teacher and students share an activity so that the students can complete the task with the help of the teacher. The interaction is supported by the language specific to the literacy activity and through the assisted performance with the more knowledgeable teacher, the students expand and reorganize independence in order to create new meanings or learn how to learn (Lyons, Pinnell, & Deford, 1993).

Scaffolding is the term often used to refer to the instructional support in the teacher-student interaction (Clay & Cazden, 1990). Scaffolds in the manner of modeling or explicit teacher talk are responsive to students’ developing literacy repertoires.
Responsive teaching requires the teacher to continuously observe, analyze, interpret, and evaluate work with children based on their strengths and areas of need in literacy development (Lyons, Pinnell, & Deford, 1993). Also referred to as contingent teaching (McEneaney, Lose, & Schwartz, 2006; Pressley et al., 2001) or interactive instruction (Rubin, 2001), this type of active teaching champions explicit teaching, but is not synonymous with direct instruction in predefined curriculum.

*Literacy Intervention and Tutoring*

Theories that center on what is the best way to teach children how to read will continue to be debated. Regardless of the method of instruction, some students will need more intense and more expert instruction in order to prevent reading failure. Literacy interventions and tutoring create opportunities for at-risk learners to gain critical skills and strategies for reading and writing and to catch up with average-achieving peers.

In what follows, key components of effective literacy interventions and tutoring programs will be identified. Two types of literacy interventions, preventive and acceleration, will be examined and, in the course of describing these interventions, a new approach called Response to Intervention will be scrutinized. Levels of expertise and levels of intensity will also be emphasized as factors that greatly influence the effectiveness of literacy interventions and tutoring and, from there, the most recognized models of literacy intervention and tutoring will be described and reviewed.

*Components of Effective Literacy Intervention*

Several principles can be drawn from a look at effective interventions.

- There are many instructional approaches to raising the literacy achievement of children. No one program or instructional method is superior, although
more intensive interventions, such as one-on-one tutoring, have produced more successful results for struggling readers (D'Agostino & Murphy, 2004; Duffy-Hester, 1999; Elbaum, Vaughn, Hughes, & Moody, 2000).

- Explicit instruction and modeling in the context of authentic reading and writing activities are important components of interventions (Pressley, 2006).

- Literacy intervention needs to be tailored to student needs. It requires teachers and tutors to routinely evaluate the appropriateness of the reading material and strategy use and supply the range of materials necessary to respond to the student needs (Johnston, 2003; Serafini, 2001; Valencia & Buly, 2004).

- Professional development for teachers and tutors is essential. Teachers and tutors with greater understanding of instruction and authority to act on that expertise are central to creating interventions that accelerate the literacy development of children (Allington & Cunningham, 2001; Pinnell et al., 1994).

- Teachers and tutors that provide substantially more reading and writing opportunities, more contextualized skills teaching, and more interactive lessons are more effective (Lipson, Mosenthal, Mekkelsen, & Russ, 2004).

- Schools that create and maintain an atmosphere of shared responsibility for the education of all the children in the school and routinely collaborate to provide timely, joint intervention are more successful (Taylor et al., 2005).
• Home-school connections can improve children’s home literacy environment and increase parental involvement (Englund et al., 2004; Tracey, 2000).

Types of Intervention

Literacy interventions are extraordinary instructional supports for children who have identified or anticipated literacy difficulties (Allington, 2002; Snow et al., 1998). There are literacy interventions of two sorts. First, preventive interventions are implemented to reduce the incidence of reading difficulties. Second, acceleration interventions are designed to accelerate learning so that the literacy development of participating children is comparable to their peers (Allington, 2005).

Preventive intervention. Most preventive interventions focus on creating more powerful early childhood programs as a strategy for reducing literacy difficulties later. Others focus on restructuring primary grade classroom instruction to enhance the learning opportunities for children experiencing difficulty.

Preventive intervention programs, designed to influence the course of language and literacy development of children ages 0-8, are also called early intervention programs (Strickland, 2002). Juel’s (1988) longitudinal study showed how the pattern of school failure to learn to read and write proficiently begins early. Her study provided evidence with close to 90% probability that children who are poor readers by the end of first grade continue to be poor readers at grade four.

Early childhood programs, such as high quality preschool and kindergarten, are early intervention programs that attempt to prevent early reading difficulties by designing print-rich, developmentally appropriate literacy instruction (Leslie & Allen, 1999). Early
childhood programs that immerse children in books, stories, and opportunities to engage in writing activities significantly fostered growth in emergent literacy development (Sayeski, Burgess, Pianta, & Lloyd, 2001; Scanlon, Vellutino, Small, Fanuele, & Sweeney, 2005; Slavin, Karweit, & Wasik, 1993; Wasik, Bond, & Hindman, 2006).

Additionally, early intervention programs focus on increasing parental involvement in children’s literacy development. By providing parents with training and materials to help stimulate their children’s cognitive development, the benefits for children in an early intervention program can be more substantial (Englund et al., 2004; Tracey, 2000).

Smaller class sizes in primary grade classrooms seem to be another effective preventive intervention design. Studies found that class size reduction impacted reading proficiency of children (Achilles, 1999; Achilles & Finn, 2006). Teachers could better focus on the instructional needs of individual children (Pressley, 1998). Furthermore, students that remained in small classes of fifteen or less for their kindergarten to third grade years of school continued to outperform peers in regular sized classes and were more likely to attend advanced high school courses and graduate (Finn, Gerber, & Boyd-Zaharias, 2005; Mosteller, 1995).

Preventive intervention programs in early elementary grades, particularly first grade, are designed to identify low-achieving students and provide supplemental support after a relatively short exposure to classroom instruction. Thus, preventive intervention programs endeavor to close the achievement gap between the at-risk student and their average peers. In this way too, the distinction between the goals of preventive or early intervention programs and the goals of interventions for acceleration become blurred. An explanation of interventions for acceleration follows.
Intervention for acceleration. Acceleration designs add instructional support programs to classroom instruction. Difficulties in reading are identified early and extraordinary instruction is provided to speed up literacy development in an effort to match average bands of peer achievement in reading and writing or meet grade-level benchmarks. Intervention for acceleration designs include classroom corrective reading efforts, remedial tutorials, in-class specialist support, and pull-out, supplementary interventions (Shanker & Ekwall, 2002).

Title One, a federal literacy program reauthorized under the No Child Left Behind Act of 2001 (U.S. Department of Education, 2006), is an example of an intervention effort aimed at accelerating students’ literacy progress. Title One programs support high-poverty schools and districts, operating as either targeted-assistance or school-wide programs. Targeted-assistance schools identify students who are at risk for not meeting state literacy performance standards and provide literacy intervention programs for these students. Intervention services can be delivered in the form of more traditional remedial tutorials or group intervention support inside or outside the regular classroom with a reading specialist’s help. School-wide Title One schools use federal funding comprehensively to improve literacy programs so that all students are impacted. Classroom corrective reading programs focus on additional or restructured literacy programs. A program of instruction is usually conducted by the classroom teacher, with more intensive services provided by a reading specialist.

Response to Intervention

The term Response to Intervention, or RTI, introduces a new approach that will ensure that struggling students receive effective interventions in any area of academic
difficulty (Boswell, 2005). RTI is part of The Individuals with Disabilities Education Improvement Act (IDEA, 2004), a reauthorization of the 1997 Individuals with Disabilities Education Act, signed into law by President Bush in December of 2004. RTI provides an alternative means of providing targeted intervention to all children at-risk for academic failure (Fuchs & Fuchs, 2006), while allowing a new method for identifying students with serious reading difficulties whose learning disabilities are not resolved by intense instructional intervention given over extended periods of time. These students will likely need long term supplemental support such as special education (McEneaney, Lose, & Schwartz, 2006).

While much research is still being undertaken to guarantee that RTI implementation promotes effective interventions and represents a valid way of identifying learning disabilities (Fuchs & Fuchs, 2006), key elements in the RTI conceptualization relevant to the topic of early and preventive interventions can be put forward.

Core concepts of an RTI approach, as presented in a report prepared by the National Joint Committee on Learning Disabilities (2005) include: 1) research-based interventions focused specifically on individual student difficulties and delivered with appropriate intensity; 2) data-based monitoring reflecting continuous monitoring of student performance and progress of the interventions; 3) use of collaborative approaches by school staff for development, implementation, and monitoring of the interventions; and, 4) systematic assessment and documentation that the interventions were implemented with fidelity.
The implementation of RTI is constructed within the context of a multi-tiered framework that outlines a continuum of services for students with academic difficulties, including difficulties in reading and writing. Although there are many possible variations on the framework, the following model is currently in place for RTI (Fuchs & Fuchs, 2006; National Joint Committee on Learning Disabilities, 2005)

- Tier 1: High quality, research-based instruction for all students in general education with ongoing assessment and progress monitoring of students to guide instruction and provide differentiated instruction as needed.
- Tier 2: Students whose performance falls behind that of their peers or school benchmarks receive more specialized prevention or remediation interventions targeted to their individual needs. Qualified educators in collaboration with classroom teachers implement interventions and monitor student progress. Progress is monitored frequently to determine student’s responsiveness to the intervention and collaborative problem-solving is used to determine needed modifications.
- Tier 3: Comprehensive evaluation is conducted by a multi-disciplinary team and data is collected from Tiers 1 and 2 to determine students’ eligibility for special education and other related services.

Allington (2006), in his refutation of the RTI three-tiered model, calls for a three-tier model of intervention focused on literacy intervention and based on the current research of coordinated, intensive intervention with teacher-student ratios of 1:3 to 1:1 (D'Agostino & Murphy, 2004; Elbaum et al., 2000; Vaugh & Linan-Thompson, 2003). Challenging the RTI model’s unwarranted emphasis on instructional fragmentation and
commercially-produced instructional packages, Allington proposed an alternate three-tied model for slow-progress children that offers small group instruction in addition to enhanced classroom instruction at Tier 2 and intensive intervention in the form of one-on-one tutoring with expert tutoring for the small percentage of children failing to make adequate progress in small group intervention at Tier 3.

Despite the unanswered questions and issues regarding the research, framework and implementation of RTI, its multi-layered structure can be placed in the early grades to strengthen the intensity and effectiveness of reading intervention for at-risk students and, as a result, serve as a pre-referral service to prevent chronic school failure and reduce the number of students who are placed inappropriately in long-term literacy support (Askew et al., 2002; Moore-Brown, Montgomery, Bielinski, & Shubin, 2005; Schwartz, 2005).

Factors that Influence Intervention and Tutoring

The most effective intervention programs that prevent early reading failure and accelerate the progress of low-achieving students are approaches that incorporate the highest degree of expert teaching and intensity of instructional support (Allington, 2005; National Institute of Child Health And Human Development, 2000). The important role of instructional expertise and intensity, in terms of scheduling and pacing of intervention lessons, as well as the teacher-student ratio, are presented.

Levels of expertise in interventions. The teacher’s (or tutor’s) level of expertise is considered critical to the success of the intervention. Wasik and Slavin (1993), in an early study of five tutorial programs, reported that programs that employed certified teachers as tutors obtained substantially larger impacts on student gains in reading than those using
paraprofessionals. Meta-analyses of early intervention programs (Pinnell et al., 1994) reported that professional development of tutors increased the effectiveness of interventions. While the meta-analyses of tutorial intervention programs (Elbaum et al., 2000) reported that volunteers, college students, and paraprofessionals may be as effective as certified teachers, the results were limited to only certain intervention programs.

Teachers and tutors need to develop a range of competencies and skills in order to tutor struggling readers. This comes with continuous professional development (Pressley & Roehrig, 2005), experience in the art of helping others (Wood, 2002), and thoughtful reflection and evaluation (Duffy-Hester, 1999). Intervention approaches that use non-certified tutors require knowledgeable teachers that provide consistent, ongoing coaching and close supervision of the tutors (Morris, 2006).

Research shows that the effectiveness of tutoring depends on the contingency of the teaching to accelerate learning for those who have fallen behind their peers (Cox & Hopkins, 2006). Possessing knowledge of the literacy task is not enough. The contingent tutor’s role is defined by the activity of the child. Contingent support for learning means that tutors appropriately interpret and react to the children’s variability in literacy development. Tutors present manageable problems for the child, highlighting what the child is likely to attend to. Knowing what to model and how to talk about the task are essential. Knowing when to intervene and how to extinguish support so the child can take control of the task are also important (Wood, 2002).

*Levels of intensity in interventions.* Intensity refers to the student’s level of engagement in the learning and the ratio of teachers to students in the intervention.
Studies show that one of the best predictors of learning outcomes is how long the child spends on the task (Ramey & Ramey, 1998). Highly intense interventions (indexed by variables including the number of hours per day, days in the week, and weeks per year) produce greater sustained effects than do less intensive intervention models. Intervention programs in which the students work with teachers or tutors at least three times a week consistently were more likely to generate positive achievement for students than programs in which teachers and students met twice a week (Baker & Wigfield, 1999; Wasik, 1998).

Struggling readers and writers need more time on task than peers that are meeting grade level benchmarks and working on text independently (Juel, 1996). Frequent, focused, and consistent intervention situations that engage students in the learning process with appropriate materials for longer periods of time maximize the benefit of targeted instruction and produce more positive experiences with literacy activities (Woo & Morrow, 2001), thus reducing the phenomenon called the “Matthew Effect” (Stanovich, 1986). Without targeted, intensive intervention, students fall further behind their peers, habituate ineffective literacy strategies, and cultivate a cycle of avoidance and dislike for reading and writing (Woo & Morrow, 2001); a student may “learn to be learning disabled” (Clay, 1987, p.155).

More intense literacy interventions require that the ratio of teachers to students is relatively small. Studies of literacy interventions show that small-group and individual tutorial programs effectively reduce the numbers of struggling readers despite a variety of instructional models (Mathes et al., 2005; O'Connor, 2000; Simmons et al., 2003; Torgesen et al., 2003). Small-group interventions, while different in how instruction is
provided and in the amount of emphasis placed on content, generally reduce the number of struggling readers to 4.5% or less of the school population (Mathes & Denton, 2002; Torgesen et al., 2003). One-on-one interventions, particularly those designed as early intervention measures, report the potential of closing the achievement gap between struggling reading and same-age peers (Rodgers, Gomez-Bellenge, Wang, & Schulz, 2005) and reducing the special education referral rate to less than 2% (Schwartz, 2005).

**Intervention Models**

Presently, a variety of intervention models have reported positive results. In many cases, studies on the levels and quality of success have been debated, yet the following intervention models are well-known, illustrate various levels of expertise and intensity and, regardless of serious scrutiny, cite evidence of effectiveness. An overview of the intervention models, their instructional components, and studies of their effectiveness will be presented.

**Success for All**. Success for All (Slavin & Madden, 2006; Slavin et al., 1996) is a comprehensive school reform program for low-achieving students in preschool through grade eight. It provides schools with extensive professional development in reading and writing, as well as detailed assessments and other school organization elements. It includes an early childhood program and developmental reading curriculum which incorporate an integration of phonics and direct instruction of comprehension strategies. Cooperative learning strategies and one-on-one tutorials are part of the school-wide intervention. The program also includes a comprehensive approach designed to increase parents’ participation in school and to provide family support and social services (Slavin & Madden, 2001).
There are three basic types of reading programs within Success for All: 1) a preschool or early kindergarten program; 2) a beginning reading program that usually begins in the second half of kindergarten; and 3) a reading program that extends from first grade through the elementary school years. The Success for All program utilizes classroom materials, such as basal readers and children’s literature, and commercial materials related to the program. Students are grouped across grade levels based on their reading levels and receive daily 90-minute direct instruction in reading provided by a certified teacher (Duffy-Hester, 1999; Pikulski, 1994).

As part of Success for All’s emphasis on prevention and early intervention, students are assessed every 8 weeks to determine whether they should be placed in a different reading group or if they need one-on-one tutorial services to improve their reading abilities. Individual tutoring sessions of 20 minutes supplement cross-grade group instruction. Tutoring sessions incorporate the same strategies and skills as classroom reading activities with additional, specific Success for All curriculum materials that focus on daily phonics instruction, decodable stories, lessons structured around authentic literature, and videos to model effective reading strategies (Success For All Foundation, n.d.).

Success for All is the most extensively and successfully evaluated of all reading reform models (Pearson & Stahl, 2002). It has been evaluated in more than 50 matched experimental comparisons and one randomized experiment involving 41 schools. Success for All has been found in several studies to increase students’ reading performances, reduce special education placements, reduce retentions, and increase student attendance (Borman & Hewes, 2003; Slavin & Madden, 2001; Slavin, 2005).
Reading Recovery. Reading Recovery, designed by Clay (1987; 1991; 2002; 2005), is the best known, replicable and researched early intervention program for low-progress first graders (Lyons, 2003; Schwartz, 2005). It involves daily one-on-one lessons of 30 minutes for a period of 12 to 20 weeks. The lessons consist of rereading familiar text, independent reading of the book read in the previous lesson, letter and word work, writing of a child’s story, and reading of a new story selected specifically on the emerging literacy strengths of the individual learner. Reading Recovery teachers are specifically trained to deliver the intervention. They receive extensive, ongoing training in theory, procedures and implementation of the program.

Rigorous studies have examined the effectiveness of Reading Recovery’s one-on-one model of intervention compared to small group remedial programs targeting low-achieving first graders (Pinnell et al., 1994; Wasik & Slavin, 1993), finding Reading Recovery to be at least as effective as the others and reporting statistically significant effect on four reading measures, including measures on standardized tests. The International Reading Association report (1995) and Shanahan and Barr (1995) concluded that Reading Recovery reduced the number of children who were labeled with learning disabilities and brought the level of learning of many children up to that of average-achieving peers. Elbaum et al. (2000) presented a meta-analysis of one-on-one tutoring research, and D’Agostino and Murphy (2004) conducted a meta-analysis of Reading Recovery, both finding positive program effects for Reading Recovery students.

The Howard Street Tutoring Program. The Howard Street Tutoring Program (Morris, 2005) is a supplemental intervention in which adult volunteers provide one-on-one tutorials twice a week during or after school to children in first through third grades.
who are having reading difficulties. Volunteers include college students, pre-service teachers, parents, church members, civic group members, business employees granted time to volunteer, retirees, and community volunteers. One of the key features of the model is the supervision of the tutoring by a knowledgeable reading teacher. The reading supervisor coaches the tutor and demonstrates teaching techniques, writes and monitors lesson plans, and provides performance feedback (Morris, 2006).

The intervention program is also guided by a manual authored by the originator of the program, The Howard Street Tutoring Manual: Teaching at-risk readers in the primary grades (Morris, 2005). Tutors and reading supervisors use the manual for program development and implementation.

The manual presents procedures for administering informal reading assessments and determining students’ reading levels. Tutoring sessions are designed according to three levels of reading acquisition: Emergent, Fledgling, and Late First-Second Grade levels (Morris, 2005). The manual recommends reading lessons, activities, and book lists according to the levels of reading.

The Emergent readers, which are generally beginning readers in first grade, receive 35-minute lessons which include: 1) rereading books, 2) word study, 3) sentence writing, and 4) introducing a new book. The Fledgling readers, described as low-reading second graders, receive 35-45 tutoring sessions consisting of: 1) guided reading, 2) word study, 3) easy reading, 4) stories read to student, and 5) optional writing exercises. The Late First-Second Grade readers, identified as at-risk according to their performance on the program assessments, receive 45-minute sessions which include: 1) guided reading,
2) easy reading, and 3) stories read to student. Vocabulary development, reading fluency, and comprehension activities are incorporated into each reading activity (Morris, 2005).

In five field trials that used variations of the Howard Street Tutoring Model, findings indicated that non-certified adult volunteers might be effective if provided with adequate training, coaching and evaluative feedback. Results of the studies showed that the tutored students outperformed the control group in areas of word recognition, passage reading, and comprehension (Ellison & Kritsonis, 2006; Morris, 2006).

**Book Buddies.** Book Buddies (Invernizzi, Rosemary, Juel, & Richards, 1997) is a volunteer reading tutorial model for first and second graders lagging behind their peers in literacy development. It adapted the Howard Street Tutoring Program, replicating its use of on-site knowledgeable supervision and lesson plans for an in-school context. Its inception in Charlottesville, Virginia drew the interest of the surrounding community, including the McGuffey Reading Center at the University of Virginia (UVA) (Invernizzi, 2001). Partnering with the UVA’s School of Education, the university faculty provided the overall design, the instructional leadership, and data analyses of the program, while graduate students in reading education served as the tutors’ supervisors.

In the Book Buddies model, tutors follow a sequence of literacy activities in their lesson plans designed by the reading supervisors. The core activities in the four-part plan, as described in the Book Buddies manual (Johnston, Invernizzi, & Juel, 1998), include: 1) independent, easy reading, 2) word study with elements of alphabet and phonics work, 3) writing for sounds, and 4) instructional level reading of new books. All activities are integrated in a 45-minute lesson.
Several different studies have evaluated the effectiveness of the Book Buddies program (Invernizzi, Rosemary, Juel, & Richards, 1997; Invernizzi, Juel, & Rosemary, 1997; Invernizzi, 1999). Each of the studies found that two sessions of one-on-one tutoring by a trained and supervised volunteer tutor for a minimum of twenty weeks increased student achievement and served as a viable and affordable intervention for children at-risk for reading failure.

*The America Reads Challenge.* A review of intervention models would not be complete without the mention of The America Reads Challenge Act. A decade ago, the subject of tutoring, relatively dormant in the national educational literature, became a very “hot” topic in the field of reading research and practice (Cassidy & Wenrich, 1997). Precipitated by a presidential initiative, the America Reads Challenge Act (Clinton, 1997), put out the call to build a “citizen army” of volunteers to tutor primary children in reading.

Professionals in the field of reading responded to the need for tutor training programs and published a variety of manuals and handbooks for prospective tutors (Morris, 2005; Pinnell & Fountas, 1997; Walker, Scherry, & Morrow, 1999). Articles in professional journals attempted to offer guidelines and synthesize research on various tutoring programs across the country (Elbaum et al., 2000; Juel, 1996; Wasik, 1998). These articles remain today as the bulk of information on one-on-one tutorials.

The America Reads Challenge tutoring programs across the country have vast differences and no one model can be described here. Implementation components such as tutor selection and training, supervision, tutor-student ratios, and durations of tutoring sessions have evolved over the past ten years, while many programs have simply
dissolved with the current federal educational legislature of the No Child Left Behind Act of 2001.

*The Role of Writing Assessment in Intervention*

Assessment is the process of gathering information about students’ literacy growth (Cooper & Kiger, 2005). It can be differentiated from evaluation, which is defined as a conclusive judgment of the students’ literacy performance based on a collection of information. Assessments do not utilize or assign grades on students’ literacy work, but can help determine or support a grade given to literacy work in a traditional classroom (Cunningham & Allington, 2003).

The best assessment informs decision-making about the needs of individual learners and documents student progress. Properly designed and utilized, assessment can lead to instruction that addresses students’ weaknesses and builds on their strengths (International Reading Association, 2006).

Four general steps outline the assessment process (Caldwell, 2002). First, the skill or activity to be assessed is identified. Second, evidence is collected. Third, the evidence is analyzed, and finally, a determination regarding the literacy skill is made and action in some form of teaching is taken.

Purposeful assessment leads to and is the result of effective instruction (Akhavan, 2004). Meaningful assessment embedded in instruction is particularly important for students identified as needing literacy intervention so that instruction is tailored to their idiosyncratic ways of working with and understanding print in message-getting and message-sending activities. The message-sending, problem-solving activity of writing can be assessed at the writing process level, the product level, and the word writing level.
Relevance of Writing Assessments

Writing is perhaps the most complex literacy act (Cunningham & Allington, 2003). Assessing students’ literacy performance in writing is essential to determining students’ knowledge of print, comprehension, self-monitoring strategies, and interest, as well as to track progress over time.

Assessment that focuses on the students’ abilities and progress in writing can be examined and monitored in distinct ways. The process of writing can be assessed to determine where students are in their writing development of continuous text. Products that culminate from the writing work, such as reports, journals, or stories, can be additionally evaluated on usage of conventions, grammar, and spelling (Akhavan, 2004).

Word writing assessments include the examination of high frequency words, decoding skills, and immersing spelling strategies. Assessing word writing strategies is especially important for students moving into beginning reading and writing stages of literacy development (Cunningham & Allington, 2003).

Assessing Writing: Process and Product

The process of writing involves six steps identified as prewriting, drafting, revising, editing, sharing, and publishing (Ruddell, 2005). Writing process helps students understand the kinds of thinking processes skilled writers use in constructing different forms of text. It helps them learn how to become authors which, consequentially, helps them enjoy the works of other authors (Calkins, 1994).

The pre-writing stage of the writing process begins with selecting a topic, considering content and determining a form or design for the writing. In the drafting step, writers attempt to get words down on paper and develop their ideas. The revising stage
includes adding new ideas and improvements to the text. Editing includes content changes and attention to conventions and spelling. Sharing involves conferring with peers and teachers. Sharing is the only way writers know what the audience understands about their work (Graves, 1990). The publishing stage leads to the finished product, such as a classroom book, completed composition, report, or letter, which is formally shared with others in some manner. It is important to note that children do not progress through these steps in a linear way, nor do they progress through the stages in exactly the same order each time they write (Ruddell, 2005).

Students’ use of the writing process, as well the final product such as a report or a story, can be assessed in several ways that involve either authentic assessment, standardized assessment, or standardized, diagnostic assessment.

*Authentic assessments.* Authentic assessment activities involve writing for real and personal purposes. Lucy Calkins (1994), a prolific and recognized researcher in the educational field of writing, titles assessment as a “minds on” approach (p. 311). She delineates assessment and instruction as synonymous teaching activities and reading and writing as inter-connected literacy processes. She states that “when we (teachers) attend to the ways in which our children compose their lives as readers and writers, we help them claim who they are as readers and writers and invite them to become more deliberate about their choices, more conscious of what they are choosing for themselves. (p. 321)” Her comments echo the revolutionary work on writing by Frank Smith in the early 1980s. Smith (1983) suggested that for students to be writers, they had to be readers.
Authentic assessment of both the writing process and written product is informal and diagnostic in nature since it identifies and directs instructional planning along a continuous basis (Rubin, 1997). Graves (1983) stressed that to teach writing, knowledge of what the student knows is primary. Careful and continual assessment of students’ literacy performance informs decisions about literacy instruction and activities while every teaching move reveals information on students’ understanding and performance. There are two broad forms that authentic assessment may take in this process: qualitative and quantitative assessment.

1) Qualitative assessments are descriptive measures of the students’ writing development. These kinds of assessments include portfolios and writing folders, as well as anecdotal notes.

   a. Individual writing folders, portfolios, and notebooks are sources for documenting the stages of the writing process (Tierney, Carter, & Desai, 1991). Each are a collection of students’ work put together over time. Folders or portfolios include evidence of each stage of the writing process and can be referenced during writing conferences. Writing conferences are brief conversations between the teacher and student about the student’s attitudes, knowledge, strategies and skills as a writer. The goal of the conference is to observe the student’s writing process, confirm writing strategies, or teach something new (Pinnell & Fountas, 1998). Writing conferences are a critical part of an assessment-based literacy classroom (Cooper & Kiger, 2005).
b. Anecdotal records are informal assessments that note students’ growth toward goals and objectives in writing (Reutzel & Cooter, 2003). Teachers compile written observations and interpretations of students’ writing samples over time.

2) Quantitative assessments use numbers rather than descriptors to explain student development and performance in writing. There are two general types of quantitative assessment: holistic and analytic (Reutzel & Cooter, 2003).

a. Holistic scoring of writing involves assigning a single score to the finished written piece based on the overall content and mechanics (Cooper & Kiger, 2005). Rubrics are often designed to holistically assess written products. A single score from a rubric, usually ranging from a high 6 to a low 1, is assigned to the written piece. Scores equate to a specific criteria and a comparison to anchor papers or sample responses which accompany the rubric. An analysis of students’ scores reveals their understandings and application of the writing process as well as a judgment of how well writing is being taught (Akhavan, 2004).

b. Analytic scoring of writing is similar to holistic scoring systems, yet involves assigning numbers to multiple criteria. Often, the varied criteria are weighted because they are of unequal value. Checklists use a form of analytic scoring. Checklists itemize features or components required for the written product.
Guidelines or descriptors are assigned to each component and assigned a number of points based on the quality of the component (Cooper & Kiger, 2005). Descriptors may include elements related to the overall content, organization or thoroughness of the work, as well as the conventions, such as spelling, punctuation and grammar. Weighted values are assigned to criteria, ranging from the least important skill rated as 1 to the most important skill rated as 5 (Reutzel & Cooter, 2003).

Authentic, holistic assessment measures like rubrics are an important instructional tool for students in addition to teachers. Students can be involved in the design of rubrics so they better understand the descriptor statements corresponding to the scores. They can refer to the descriptors as they write to judge their own progress (Akhavan, 2004).

Moreover, the most effective way to score writing work is with students. Self-evaluation benefits both student and teacher. As students’ ideas and opinions are crucial to the assessment process, students can take more responsibility in discussing each element and pointing out exactly where they are in relation to the descriptors while teachers can gain information relative to instruction based on students’ point of view (Rasinski & Padak, 2001).

Presently, states and local school districts are required to assess students’ writing holistically by a standardized measure. In contrast to the negotiation between the teacher and students in the design of a rubric and an examination of students’ writing in an authentic learning experience, specific directions for administration of the writing assessment and specific rubrics for precise scoring are employed (Rubin, 2001). A special
reader outside the school system is trained in applying the rubrics and assigns the scores to students’ work. These standardized assessments are more accurately defined as an evaluation or testing tool because they show only limited information about the literacy levels of individual students (Cunningham & Allington, 2003).

*Standardized assessments.* Standardized assessments are designed to measure how well children have achieved various levels of learning and to compare one group of children to the rest of the school system, county, state, or country. They are to be administered under identical conditions every time. Although the underlying ideal of standardized measurement is to justify that schools are indeed educating children, the entire process is fraught with criticism and limitations (Cooper & Kiger, 2005).

Esteemed literacy researcher Donald Graves (2002) reflects on the process of writing in an atmosphere of hurry-up-and-write an answer for standardized tests. He addresses national mandates for testing:

When large amounts of money are expended on educational improvement, some sort of accountability is needed. Current tests that rely heavily on computer scoring to measure quickly and cheaply, fail to measure such elements as student initiative, relating book sources, and good, long thinking. Many states have high-stakes testing where monetary rewards are given to schools and teachers whose students do well. Students in many of these districts prepare for months taking test after practice test in order to test well. Enormous amounts of time that should be spent in teaching are stolen by the efforts to prepare for the tests. Instead of preparing children for tests, teachers need to be teaching the skills that will, in fact, make them better readers. Teachers should be using this time to give longer
assignments that require them to read, write, handle different points of view, and solve real problems within disciplines. Currently, we are testing what we value, quick thinking. There is a mistaken notion that a test is good just because it is a test. Current tests require one right answer and are conditioning American children to think that is what learning is about. (pp.1-2)

One major type of standardized test that provides discrete information about individual student’s literacy performance is a diagnostic test. Diagnostic tests are a standardized measure in that the tester must follow precise directions for administration. Diagnostic tests assess various components of literacy achievement, such as oral reading, silent reading, comprehension, phonemic analysis, high frequency word vocabulary, and fluency (Rubin, 2001). The results expose which areas need instruction for individual children. In this way, diagnostic tests bridge the aims of authentic assessments in classrooms with the standardized qualities of published tests.

*Bridging authentic and standardized assessments.* There are few examples of diagnostic assessments that fulfill the stringent requirements of a standardized test and, at the same time, provide specific information about the students’ literacy strengths and needs in writing. Two such assessments will be described: Clay’s (2002) An Observation Survey of Early Literacy Achievement and Leal’s (2005/2006) Word Writing CAFÉ.

An Observation Survey of Early Literacy Achievement (Clay, 2002) is a diagnostic test as well as an authentic assessment that relies on systematic observation of young children’s work on early literacy tasks. It adheres to characteristics of standardized measurement: standard ways of administering the tasks of the assessment, standard
literacy tasks, ways of knowing the reliability of observation, and real-world tasks that establish validity of the observation (Schmitt et al., 2005).

The Observation Survey (Clay, 2002) consists of six literacy tasks for assessment: 1) letter identification, 2) word reading, 3) writing vocabulary, 4) hearing and recording sounds and words, 5) concepts about print, and 6) text reading. Two tasks, writing vocabulary and hearing and recording sounds and words, capture writing performance in the early stages of literacy development. The writing vocabulary task involves students’ written production of known words in a ten-minute period. The hearing and recording sounds in words task is a measure of the students’ ability to hear and record sounds in words in a given sentence.

The Word Writing CAFÉ (Leal, 2005/2006) is another diagnostic assessment of writing. It utilizes standardized directions for administration and scoring. Students’ written responses produce clear examples of students’ strengths and weaknesses in word writing. Three aspects of word writing are assessed by the CAFÉ: fluency, accuracy, and complexity. Teachers can use the assessment results to improve individual student word writing, track student progress in word writing over time, and evaluate how their instruction is affecting student growth of writing in general.

Assessing Word Writing Skills

Words and attempted words (fluency), correctly spelled words (accuracy), and multi-syllabic words (complexity) are three aspects of word writing that can be assessed. Instruction on word learning can result from determining children’s understanding of these aspects of word writing.
**Fluency.** Fluency means to read expressively and meaningfully, in appropriate syntactic units of phrasing and clauses, at appropriate rates, and without word recognition difficulty (Rasinski & Padak, 2001). As an important part of fluency, word recognition refers to the ability to identify words quickly and with minimal visual analysis. Automatic word recognition is achieved through practicing reading stories and words, as well as writing words.

The writing vocabulary task in Clay’s (2002) An Observation Survey of Early Literacy Achievement is not designed to measure fluency in word writing. By comparison, Leal’s (2005-2006) Word Writing CAFÉ includes a measure for assessing fluency in word writing. During the administration of the assessment, the child is directed to write all the words he knows how to write in a ten-minute period. The teacher gives the child categorical prompts, such as: “Write words that tell what you like to do” or “Write words that describe what is in your school.”

All word attempts, correctly or incorrectly spelled, are scored in the fluency computation of the Word Writing CAFÉ (Leal, 2005/2006) because each written attempt indicates what a child knows about words and parts of words. Having a repertoire of known words and being able to recognize known features of words and use these features to get to unknown words without slowing down is vital to fluency in both reading and writing (Fountas & Pinnell, 1996).

Approximations that children make writing words can be used in a diagnostic manner. Approximations or inventions of written words reveal what children are noticing about letter-sound relationships, letter patterns, and irregularities. Appropriate emphases
for instruction on word learning can result from determining children’s understanding of graphophonic knowledge (Bear, Invernizzi, Templeton, & Johnston, 2003).

**Accuracy.** Accuracy of a word is basically judged by the correct spelling of the word. There is generally one correct standard way to spell a word. This is considered a convention of written language. Conventions for written language, such as spelling and punctuation, are important as they permit others to read what is written (Barr, Blachowics, Katz, & Kaufman, 2003).

Traditionally, weekly classroom spelling tests assess the accuracy of words written from a prescribed list. Formal spelling tests are generally graded as words written correctly or incorrectly.

Word spelling, assessed in an authentic manner on a natural writing task, captures students’ developmental stages of spelling or knowledge of orthography (Laminack & Ray, 1996). Developmental spelling tests and inventories (Bear et al., 2003; Morris & Perney, 1984), which include words of various complexities, are also sensitive to changes that occur in students’ stages of spelling development.


The words students know in every detail make up their writing vocabularies. Personal writing vocabularies can be used in a diagnostic manner to teach new words (Clay, 2001).

Thirty-seven dependable spelling patterns represent nearly 500 primary-grade words (Wylie & Durrell, 1970). These spelling or rhyming patterns represent rimes, or
the sounds of the spelling patterns of vowels and consonants such as -at, -up, and -in.

Using the principle of rime, children can be shown how to use their known words to generate new words in reading and writing. This teaching approach is also called analogy-based phonics (Fox, 2004) or word family instruction (Cunningham, 2004).

Approximately 300 words make up 85 percent of the running words in all text (Samuels, 2002). These words are known as high-frequency words. Identifying known words from the word writing assessments as high-frequency words and learning how to spell new high-frequency words accurately also contributes to automatic word recognition in reading and writing which, in turn, promotes fluency (Rasinski & Padak, 2001).

**Complexity.** Complexity is associated with readability. Readability formulas measure text difficulty using a calculation of two elements: sentence length and complexity of vocabulary. The Fry (1977) readability formula bases its estimates on the number of sentences and the total number of syllables in a 100 word passage. The Raygor (1977) readability formula counts sentences and the number of words with six or more letters in a 100-word passage in the determination of the text difficulty.

Of the two assessments discussed in this section, Clay’s (2002) An Observation Survey of Early Literacy Achievement and Leal’s Word Writing CAFÉ (2005/2006), it is only the CAFÉ that includes a measure for assessing complexity in word writing. The complexity factor is drawn from the readability formulas. Scoring for complexity is calculated by the sum of the number of syllables in the total written words spelled correctly divided by the total written words spelled correctly.
Knowing how to write a wide range of different words allows students to begin to understand and apply the regularities of English spelling, the irregularities of spellings, and the rules of English orthography to their reading and writing (Clay, 2001). Research shows that children appear to use a strategy when constructing and de-constructing more complex words similar to what they did when reading and writing one-syllable words. Readers and writers search through their cognitive store of known words in order to solve new words with like parts in similar places (Cunningham, 2004).

Kaye (2006), in her recent study of second graders’ word solving behaviors, reported that readers never engaged in isolated phoneme-by-phoneme or letter-by-letter word solving attempts across an entire word. She found instead that word parts (syllables, rimes, half of a compound word, or any other part larger than one phoneme) were used in nearly 75% of all word solving attempts.

Teacher’s understanding and recognition of a child’s use and knowledge of more complex words can be used in a diagnostic manner. Helping children to get from a word they know to something new by themselves in reading and writing is a powerful generative method for literacy learning.

**Summary**

Research has found that literacy interventions can prevent and accelerate the literacy learning of students at-risk for reading failure. More intensive literacy interventions, as are one-on-one tutorials instructed by a certified teacher, produce the greatest effects on students’ learning.

Literacy interventions are informed by theories of reading and teaching. Approaches to literacy learning that emphasize writing and its reciprocal relationship to
reading, that acknowledge the developmental stages of literacy development as flexible stages of learning to read and write, and that recognize the critical role of the teacher as primary to the literacy growth of students are essential to the understanding of effective literacy interventions.

Many of the components of effective literacy interventions are reflective of research on effective literacy classrooms, yet literacy interventions call for higher levels of expertise and intensity to bring low-performing students to average levels of achievement in literacy learning. The goals of both preventive interventions and interventions for acceleration are to reduce the number of students needing long-term supplemental literacy support.

Finally, writing in effective literacy interventions can be assessed and monitored by authentic and diagnostic evaluations that, when used to inform individualized instruction, will help to bring struggling readers and writers along their right path of literacy learning.
CHAPTER THREE

Methodology

This study explored the effects of tutoring low-performance reading students on the word writing abilities in fluency, accuracy, and complexity when using the Word Writing CAFÉ (Leal, 2005/2006) as an evaluation instrument. A total of 25 students were tutored one-on-one by university pre-service teachers and a total of 91 students were not tutored. The tutoring program took place in a small rural elementary school in the Appalachian area of the Midwest from January 2002 to May 2002 with grade level being the independent variable. This study investigated the following research questions:

1. Are there significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?
   1a. Are there significant differences in gains in word writing fluency between grade levels?
   1b. Does grade level interact with tutor group with respect to gains in word writing fluency?

2. Are there significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?
   2a. Are there significant differences in gains in word writing accuracy between grade levels?
   2b. Does grade level interact with tutor group with respect to gains in word writing accuracy?
3. Are there significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

3a. Are there significant differences in gains in word writing complexity between grade levels?

3b. Does grade level interact with tutor group with respect to gains in word writing complexity?

Population Identification and Sampling Plan

The population of participants used in this study consisted of two groups: elementary students in a small school in the rural Appalachian area of the Midwest and university students enrolled as early childhood education majors in large state university located within five miles of the elementary school.

Student Identification

The elementary student participants attended a small rural school designated as a School-wide Title I Preschool through Grade 6 building that serviced 248 students. Students came from impoverished rural homes with 86% of the students qualifying for free or reduced lunch. Thirty-one percent of the kindergarten students had no previous school experience such as preschool or Head Start. One out of four students was identified with special educational needs and an additional one out of three students was identified as at-risk for lack of school success. No student in the building qualified for the district’s Gifted Education program. School intervention efforts included the following:

- Reduced class size,
- Reading Recovery (Clay, 2005),
• Ohio State Literacy Collaborative (The Ohio State University, n.d.),
• Fast ForWord (Scientific Learning, n.d.),
• Computer Curriculum Corporation Success Maker (Pearson Digital, n.d.),
• Write Track (Educational Consultants And Publishers, n.d.), and
• All day kindergarten.

Typically students entered the small rural elementary school with limited language experience. Many came from single parent families with high rates of family illiteracy and limited academic support at home.

In the school year prior to the study, March of 2001, state proficiency tests were required in grades 4, 6 and 9 in reading, writing, mathematics, citizenship and science. The proficiency tests were state-developed, standardized measures of student literacy and basic competency. Fourth grade students at the elementary school (with the exception of those with Individual Education Plans) took the reading portion of state 4th grade proficiency test. Only 13% of the students scored at or above proficiency in reading.

Off-grade state proficiency tests were also required in grades 1, 2, 3, 5, 7, and 8 to measure district achievement in reading, writing, mathematics, citizenship, and science. These tests met a state requirement that districts report on student achievement in each of the areas every year. The results were also used by schools to help students progress toward proficiency at the grade levels tested and publicly reported by the state. The off-grade proficiency tests were administered to all first, second, and third grade students in the school. The school’s March 2001 scores were as follows:

Grade 1 32% scored at or above proficiency; 68% failed,
Grade 2  17% scored at or above proficiency; 83% failed,
Grade 3  56% scored at or above proficiency; 44% failed.

In response to the literacy needs of the student population in the school, administrators and teachers designated several key goals on the school’s 2001-2002 Continuous Improvement Plan: opportunities for one-on-one instruction, highly qualified teachers and tutors, individual assessment and intervention, and instructional materials presented at appropriate levels.

University student participants were twenty-five early childhood education majors that, through a series of qualifying academic reviews and interviews, were selected to spend a yearlong field placement at the small rural elementary school while completing courses required for a reading endorsement on their state teaching license. Twenty-four of the university students were female and one was male.

Sampling Plan

The 116 elementary students utilized in this study included all first, second, third and fourth graders in the small rural elementary school during the school year 2001-02. Every student completed a word writing assessment as part of a school plan to evaluate students’ word writing abilities. No student was exempt from the assessment for reasons of lower intelligence, second language, low language skills, poor readiness skills, or diagnosis of learning disability. Table 1 denotes the data regarding students in grades one through four that were administered the assessment used for this study.
Table 1

Number of Students According to Grade Level

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>22</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Grade 2</td>
<td>28</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Grade 3</td>
<td>31</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Grade 4</td>
<td>35</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>50</td>
<td>66</td>
</tr>
</tbody>
</table>

With the medium effect size (Cohen, 1987) of \( f = 0.25 \) and \( \alpha = 0.05 \), the two-way ANOVA would have power of approximately 0.75 the tutor effect and power = 0.59 for the grade level and interaction effect.

Data Collection Procedures

The data for measuring the influence of one-on-one tutoring on first through fourth grade at-risk students were collected in the school year 2001-2002. This data were collected through a school-wide plan to evaluate the word writing abilities of students. IRB approval was received from Ohio University in May 2006 prior to the analyses of the existing data from the school (Appendix A).

The following description includes the identification of the researcher, the selection of university tutors, the courses of study for the university tutors, the selection
of the elementary student tutees, the procedures for the tutoring sessions, and the parallel school-wide plan to assess student word writing assessment.

Identification of the Researcher

The researcher in this study served as the university literacy instructor for a major portion of the time relevant to this study. The researcher was a doctoral student of the full university professor that originated the university-school literacy partnership four years prior to the study. The researcher taught the university courses pertinent to the tutors’ reading endorsement for their state licensure and supervised the university-school tutoring sessions at the small rural elementary school during the academic year 2001-2002.

Selection of Tutors

Twenty-five university student tutors were selected in the spring prior to the school year 2001-2002 from a pool of sophomore-year early childhood teacher education students. Approximately 50 interested students filed an application for the university-school literacy partnership with the university college of education. The application documented student status, previous experiences working with children, and community or volunteer work. Applicants attached personal letters outlining professional goals, a statement of commitment to the university-school literacy partnership, a current university academic performance report, and references to the application.

Student applicants then interviewed in groups of three or four with a panel that consisted of the university coordinator, the elementary school coordinator for the university-school tutoring program, teachers from the elementary school, and past university tutors. The panel rated the applicants on academic performance, strength of the
application letter, enthusiasm and interest, and clarity of responses during the interviews. Selections for the university-school literacy partnership were made on this basis.

Following the receipt of an acceptance letter, the group of twenty-five newly-selected tutors met for an orientation. During the orientation meeting, introductions were made, university courses were scheduled, coursework requirements were reviewed, and general information regarding the elementary school and the university-school literacy partnership were discussed. Videos of the university tutors were made during their introductions to assist the placement of tutors in appropriate classrooms.

During the interim months between the spring and fall quarters 2001, the university instructor and the school coordinator reviewed the tutor videos and matched their placements to teachers in the school based on the tutors’ requests for particular grade levels, availability of cooperating teachers in those grade levels, and a subjective prediction of how the tutor and the teachers would form a collaborative working relationship.

Course of Study for Tutors

The university tutors were required to complete four literacy courses in addition to general education methods courses as a cohort during the academic year 2001-2002. These courses were offered during the three semesters comprised of ten weeks of classes on the university academic calendar. The courses were scheduled Monday, Wednesday and Friday, with every Tuesday and Thursday from the hours of 9:00 a.m. to 3:30 p.m. designated as full days of field placement in the elementary school. Students were placed in two different grade levels, preschool through grade six.
Fall. The fall quarter covered nineteen hours of early childhood coursework in addition to the literacy coursework required for the reading endorsement. University students took the following courses:

- Reading and Literature in Early Childhood Classrooms
- Social Studies in Early Childhood and Clinical Experience
- Parent Education
- Observing Children for Reading Strategies and Skills and Clinical Experience
- University-School Literacy Partnership Seminar

Winter. The winter quarter consisted of twenty hours of the following methods courses and literacy courses:

- Math in Early Childhood and Clinical Experience
- Instructional Adaptations
- Reading Diagnosis
- Creative Experiences in Early Childhood
- University-School Literacy Partnership Seminar

Spring. The spring quarter was comprised of nineteen hours of methods and literacy coursework:

- Science in Early Childhood and Clinical Experience
- Content Area Reading
- Reading Remediation
- Family Development
- University-School Literacy Partnership Seminar
Selection of Students

Twenty-five students from grades one through four were selected to participate in a university-school tutoring program during the winter and spring quarters of the academic year 2001-2002. Teacher recommendations approved by the elementary school principal were the initial determining factor in the identification and selection of students to take part in the university-school tutoring program. These recommendations were based on any, or all, of the following criteria:

- Proficiency Test scores
- Off-grade Proficiency Test scores
- Reading Recovery assessment
- Intervention Assistance Team observations
- State Reading/Language Arts Benchmarks
- Literacy Collaborative assessments
- Classroom performance

Parental consent was the final decisive factor for student participation in the university-school tutoring program. Table 2 presents the data on the student selection for the university-school tutoring program used in this study.
Table 2

*Number of Tutored Students According to Grade Level*

<table>
<thead>
<tr>
<th>Tutored Group</th>
<th>N</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Grade 2</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Grade 3</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Grade 4</td>
<td>12</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>15</td>
<td>10</td>
</tr>
</tbody>
</table>

University tutors requested the gender and age of the students with which they preferred to work over the two-quarter sequence. The university instructor and school coordinator matched the university tutors to students based on the tutors’ requests and the availability of the students nominated by the principal and authorized to participate in the university-school tutoring program by parental permission.

*Procedures for Tutoring Sessions*

The university-school tutoring program was held during the winter and spring quarters of the academic year 2001-2002. The tutoring sessions were held after the regular school day for one hour, twice a week at the elementary school. Twenty-eight one-hour tutoring sessions per student were executed during the two quarters of the university-school tutoring program. Fourteen tutoring sessions were implemented during seven weeks of the winter quarter from January 22, 2002 to March 7, 2002, and fourteen
tutoring sessions were held during the spring quarter from April 2, 2002 to May 16, 2002.

Tutoring sessions missed due to absences of either the student or tutor were made-up during opportune times within the regular school day or additionally requested tutoring sessions held after-school. Tutoring sessions took place in the school classrooms with no more than two pairs of tutors and students working in any one room.

All tutoring sessions were observed by either the university coordinator or a graduate student in reading with prior experience as a university tutor. When tutoring sessions were going well, observations were usually a five-minute constructive check on the rapport between the university tutor and the student, the preparation of assessments and instructional materials, and the accuracy and capability of administering assessments and instructional interventions. If the tutor was having difficulty, the coordinator or graduate student stepped in to model appropriate assessment procedures or instructional activities.

Written feedback after each tutoring session was documented by the university instructor or reading graduate student on duplicate evaluation forms called the “Tutoring Observation Report.” One copy of the report remained with the university tutor and the other copy was filed by the university instructor. Issues or concerns unique to individual tutors were addressed through individual conferences or email. Common issues or difficulties and new understandings and successes as a result of the tutoring sessions were discussed during class time of the winter and spring quarter literacy courses.

There were common practices required of the tutors for each of the quarters of tutoring. Activity plans and reflection journals were requisite assignments for each tutoring session in both quarters. Plus, each quarter had a unique focus for the literacy
work with tutees that was reflected in the activity plans and journals. The winter quarter of tutoring focused on literacy assessment and the spring quarter of tutoring focused on literacy remediation.

Winter quarter tutoring plan. The focus of the winter quarter tutoring was literacy assessment. Required texts for the literacy courses offered various literacy assessments. The texts used by the university students were the following:

- Clay, M. M. (2000). *Concepts about print: What have children learned about the way we print language*. Portsmouth, NH: Heinemann,

- Clay, M. M. (2000). *Follow me, Moon*. Portsmouth, NH: Heinemann,


Thirty to forty minutes of each tutoring session was devoted to the administration of a literacy assessment. University tutors completed an “Activity Plan” prior to each tutoring session which gave a description of the assessment and the materials or books to be used during the session.
The activity plan for each tutoring session during the winter quarter tutoring included the following components: (a) 5-10 minutes of fluency reading, including repeated readings, paired readings, or echo readings, (b) 30-40 minutes of assessments, (c) 5-10 minutes of reading aloud, (d) 10-15 minutes of an interactive reading or writing activity or game, as well as initial discussion and brainstorming about the student’s authoring of a children’s book in the spring quarter tutoring sessions, and (e) 2-5 minutes of evaluation by the university tutor and student in which each shared and recorded thoughts on their favorite and least favorite parts of the tutoring session.

Activity plans were reviewed by the instructor or the graduate assistant during the observation of the tutoring session and critiqued further by the instructor after the tutor noted personal evaluations of the tutoring session and future plans for working with their student. Copies of all activity plans for each university tutor were filed with the instructor.

To provide the university tutor with an opportunity for deeper self-reflection of the literacy work with their student, each tutor was required to submit an email journal entry to the instructor within a day following the tutoring session. The journal entry was a thoughtful account of the tutoring in which the tutor described: (a) the purpose for each assessment or activity in their activity plan, (b) an analysis of what worked or didn’t work and any problematic consequences, and (c) a thorough plan of action for the next tutoring session based on the results of the current tutoring. Authentic dialogue, particularly comments by the student, was encouraged as part of the reflection journal entries. The journal entries were emailed to the university instructor within a day following the tutoring session, reviewed and filed by the university instructor.
**Winter quarter tutoring: assessment.** Interest inventories were used during the first tutoring session of the winter quarter to aid the tutor-tutee pair in getting to know each other. The Stieglitz Informal Reading Inventory (IRI) (Stieglitz, 2001) was administered during the second and consecutive sessions. University tutors administered the IRI to determine a baseline of their student’s levels of oral reading accuracy, oral reading comprehension, word recognition ability, and listening comprehension. Tutors analyzed the results of the IRI and identified reading strengths and needs for their student.

If the student scored at a first grade level or higher on the reading of words in context sub-test of the IRI, then a Stanford Reading Diagnostic Test (Karlsen & Gardner, 1995) was administered. If the student could not score at the first grade level of the reading words in context sub-test of the IRI, then the Stieglitz Dictated Story Assessment, the listening comprehension sub-test of the IRI, and the Concepts about Print (Clay, 2002) assessment were administered.

Based on information gained from the tutor’s examination of the two initial assessments, university tutors chose additional tests in phonics, sight words, structural analysis, vocabulary, comprehension monitoring strategies and fluency to administer during the winter quarter tutoring. The following assessments were recommended and available to the tutors by the university instructor: the Names Test (Cunningham, 2004), the El Paso Phonics Survey (Ekwall & Shanker, 2000), the Dolch Sight Word Test (Shanker & Ekwall, 2002), the Yopp-Singer Phonemic Awareness Test (Yopp, 2005), the Slosson Intelligence Test (Nicholson, Hibpshman, & Slosson, 2002), and Repeated Readings (Samuels, 2002), as well as running records and story retellings.
Spring quarter tutoring plan. The focus of spring quarter tutoring was literacy remediation. Reading and writing remediation were based on the findings from the winter quarter assessments. University tutors created 4 to 8 instructional objectives for each student at the beginning of the spring quarter. For each instructional objective, two to three remediation strategies were researched and identified by the university tutor, then implemented during tutoring sessions.

The activity plan for each tutoring session during the spring quarter tutoring emphasized reading and writing remediation. It included the following components: (a) 5-10 minutes of fluency reading, (b) 20-30 minutes of strategic reading activities based on the individualized, instructional objectives, (c) 5-10 minutes of reading aloud, (d) 15-20 minutes of interactive writing in the form of student’s authoring a book and, as in the previous quarter, (e) 2-5 minutes of evaluation by the university tutor and student in which each shared and recorded thoughts on their favorite and least favorite parts of the tutoring session.

Activity plans were again examined by the instructor or the graduate assistant during the observation of the tutoring session. Appropriateness of the remediation strategies to the student’s identified literacy needs was evaluated by the instructor after tutoring sessions and feedback was provided to the tutor. Copies of activity plans for each university tutor were filed with the instructor.

The use of email journal entries, as previously described, continued to provide the tutor with an extensive opportunity for reflection during the spring quarter. Thoughtful and continual analyses of each tutoring session, particularly regarding the student’s
progress in reading and writing, helped to foster the tutors’ abilities to problem solve their student’s individual difficulties with literacy tasks and present fitting solutions.

*Spring quarter tutoring: remediation.* Strategies for literacy intervention based on each student’s instructional objectives were researched by the university tutor. Required texts for the literacy courses offered numerous remediation strategies. The texts used by the university students were the following:


Course packets of current education articles, internet websites, and searches through reading journals also supplied many intervention strategies. Dialogue between fellow university tutors in the partnership seminar held every week of the each quarter offered a valuable time for tutors to share successful, or ineffective, remediation strategies. Discussions with mentor classroom teachers in their field placements also provided helpful suggestions for remediation.

The student’s self-authoring of a children’s book presented an authentic activity for reading and writing remediation. Each student, supported by the tutor, wrote and illustrated an information book during the spring quarter of tutoring. The use of the student’s knowledge of the world, language skills, and writing abilities were used as part
of the remediation process. The tutor used the student’s own writing of continuous text as a basis for instruction in identified areas of need. The student’s own book became a familiar text, read over and over, and consequently reinforced specific reading remediation like fluency, vocabulary development, and comprehension.

*Parallel School-wide Plan to Assess Student Word Writing Skills*

During the first week of tutoring in the winter quarter 2002, the word writing assessment was administered by classroom teachers to 116 students in grades one through four at the small rural elementary school. Of the 132 students in regular or inclusion first-fourth grade classrooms, seven children did not take the January pre-test of the word writing assessment, but completed the May post-test. Nine children did not complete the May post-test, but took the January pre-test. Lack of participation in the assessment was due to school absence or general student unavailability. Ultimately, the total of 116 represents the number of students that took both pre-test and post-test of the word writing assessment.

Student participants remained in their assigned appropriate grade-level classrooms for both pre-test and post-test administrations of the word writing assessment. Classroom teachers chose the most productive or suitable time for the pre-test of the word writing assessment on January 22, 2002. Classroom teachers re-administered the post-test at the same time of the day on May 24, 2002.

*Procedures for winter quarter word writing assessment.* The data for the word writing pre-test was collected in the following manner:

1. The Word Writing CAFÉ (Leal, 2005/2006) was administered by eight individual classroom teachers to their separate group of classroom students. The assessment
was given in the individual classrooms. Any print in the classrooms was requested to be covered or removed.

2. Student participants were given a pencil and writing forms appropriate to their grade levels.

3. The classroom teachers read the directions exactly as written on the Word Writing CAFÉ Administration Directions. Any additional writing prompts or changes in writing prompts made by the classroom teacher were recorded for the intention of replication during the administration of the post-test.

4. Student participants were given the opportunity to ask questions.

5. A timer was used so that student participants were given exactly 15 minutes to complete the word writing assessment during the pre-test. The classroom teacher monitored the time of the administration, announcing a 5-minute notice to complete writing.

6. At the end of 15 minutes, the student participants were instructed to put their pencils down. The student writing forms were collected by the classroom teachers.

7. The classroom teachers gave all testing materials, including student writing forms and individual, anecdotal notes on administration to the university instructor.

*Procedures for spring quarter word writing assessment.* The Word Writing CAFÉ (Leal, 2005/2006) was re-administered in the spring of 2002 by classroom teachers as described above. Careful attention was given to replication of testing environment, appropriate student writing forms, and word writing prompts.
**Instrumentation**

The data collection instrument used in this study was the Word Writing CAFÉ (Complexity, Accuracy, and Fluency Evaluation), created by Leal (2005/2006). The Word Writing CAFÉ is an objective, group-oriented tool that assesses three aspects of word writing: student fluency in writing words, student accuracy in writing words, and student written production of complex words. For standardization purposes, the word writing assessment has specific directions for administration and scoring, but does not require specific training for administering the test.

The Word Writing CAFÉ was first piloted with a small group of second graders at the same rural elementary school in the spring of 2001 prior to this study. The pilot study was an attempt to resolve practical issues of the instrument, such as time allotted for the test and formatting the writing forms. During the trial run of the CAFÉ, students were asked to write words or sentences on blank paper for a period of ten minutes. After analyzing the procedures and results with the classroom teachers, several significant changes were made to the instrument. The focus of the assessment became writing words, not sentences, particularly for students in grades one, two, and three. Specific writing forms were designed with appropriate spaces, either word boxes or lines, so as to facilitate the writing of individual words and enhance the ease of scoring the assessment. Teachers requested that the time for the test be increased to 15 minutes rather than 10 minutes.

The data collection instrument utilized in this study reflected the changes from the pilot study. They consist of the following: (1) Administration Directions (Appendix A), and (2) Scoring Directions (Appendix B).
Administration Directions for the Word Writing CAFÉ

Specific steps for administering the Word Writing CAFÉ were given to classroom teachers of grades one through four along with recommendations concerning the availability of multiple copies of student writing papers and pencils, and covering words written in the classroom to minimize students’ production of copied words. The directions for administration were scripted for teachers. The specific student directions were written in italics. Classroom teachers could choose from among several writing prompts listed in italics in the directions.

Scoring Directions for the Word Writing CAFÉ

The steps in scoring the Word Writing CAFÉ consisted of analyzing the word writing components of fluency, accuracy and complexity. Word writing fluency, according to the assessment directions, was determined from the number of words written. All attempts were counted, whether correctly spelled or not, except for words written illegibly. Accuracy was determined as the number of written words spelled correctly and not duplicated. Complexity was determined by the number of syllables in written words spelled correctly. A complexity score was entered on the coding sheet (Appendix C) under the corresponding number of syllables. A complexity mean was calculated by dividing the sum of the number of syllables in the total written words spelled correctly by the total written words spelled correctly.

Inter-rater Reliability

The precision of the scoring of the students’ word writing assessments was controlled by inter-rater reliability. At two separate times, both at the completion of the pre-test administration in January 2002 and the post-test administration in May 2002, a
university student employee made three copies of all grade one through four student
writing forms. Original student writing forms and anecdotal remarks made by the
classroom teachers were filed with the university instructor. Each set of the student
writing forms was individually scored by three separate raters. The three raters were the
university instructor, the graduate reading student for the university-school tutoring
program, and an undergraduate early childhood teacher education student.

The three university raters discussed the scores for each set of student writing
forms. Any discrepancies regarding scoring on word writing fluency, accuracy, or
complexity were re-examined, discussed, and collectively resolved for the purpose of
reducing error and confirming exactness in recording and reporting student word writing
scores.

Data Analysis Procedures

The data were analyzed by utilizing three separate 2 (groups: treatment, control) x
4 (grade level: first, second, third, fourth) Analysis of Variance (ANOVA) design; one
for each dependent variable (fluency, accuracy, and complexity). Data were collected
during two separate assessment times for 116 students in attendance.

The independent variables were tutor groups and grade level. The tutor groups
were the treatment and control groups. The treatment group received 14 weeks of one-on-
one tutoring during a five-month period. The tutoring was provided by a pre-service
reading endorsement university tutor in two sessions per week, one hour each, after-
school tutoring program. The control group did not receive one-on-one tutoring in the
school-university tutoring program, but instead received appropriate grade level
instruction from school personnel. Grade level (as denoted by first grade, second grade, third grade, and fourth grade) is an independent variable in this study.

The dependent variables are the gains in word writing scores for fluency, accuracy, and complexity taken from the CAFÉ student writing forms at the beginning and end of the study. The fluency score is the total words written on the CAFÉ. The accuracy score is the total written words spelled correctly. The complexity score is derived by taking the cumulative number of syllables in the words written accurately divided by the total number of words written accurately.

The data were analyzed using an Analysis of Variance (ANOVA) to determine the main effects of tutoring and the interaction effect of tutoring and grade level. Analysis on the difference scores of the three dependent variables determined if there is significant improvement after tutoring. The difference was the gain scores of the three dependent variables calculated by the post-test score minus the pre-test score for fluency, accuracy, and complexity.

Summary

This study explored the effects of tutoring students at-risk for reading failure on the word writing abilities in fluency, accuracy, and complexity when using the Word Writing CAFÉ (Leal, 2005/2006) as the evaluation instrument.

The sample for this study consisted of two groups: twenty-five low-performing students in grades one through four in a small Midwest elementary school and twenty-five university students enrolled as early childhood teacher education majors in a local, large state university. The university students completed one academic year of coursework that incorporated one-on-one tutoring with a student participant and fulfilled
the requirements for an endorsement in reading for their state teaching certificate. The focus of the coursework and tutoring evolved around assessment and remediation of reading and writing difficulties.

During the same school year, the participating small Midwest school administered the Word Writing CAFÉ to all students in grades one through four as part of a school plan to assess children’s growth in word writing abilities for fluency, accuracy, and complexity. The students’ word writing assessments from the pre-test and post-test administrations were scored by three raters associated with the university. Data were statistically analyzed using an ANOVA to determine the main effects of tutoring and the interaction effect of tutoring and grade level.
CHAPTER FOUR

Data Analysis

Introduction

The purpose of this study was to investigate the effectiveness of one-on-one tutoring on the writing abilities of low-progress children as compared to non-tutored children when using the Word Writing CAFÉ (Leal, 2005/2006) as the assessment instrument. This study looked at the effects of tutoring and not tutoring on three specific aspects of word writing: 1) fluency, 2) accuracy, and 3) complexity for children in grades one, two, three and four. Therefore, a 2 x 4 Univariate Analysis of Variance was used to examine the effects of tutoring and grade level and their interactions on word writing fluency, accuracy, and complexity.

The independent variables in this study were the two groups, tutored and not tutored, and the grade level (one through four). The dependent variables were fluency, accuracy, and complexity scores from the word writing assessment. These dependent scores are presented as gain scores because they reflect the differences in the pre-test and post-test scores for fluency, accuracy, and complexity.

The sample used in this study consisted of 116 children in grades one through four in a rural elementary school in the Appalachian area of the Midwest during the school year 2001-2002. Every student completed a word writing assessment in January and May of 2002 as part of a school plan to evaluate students’ word writing abilities.

Twenty-five students were selected in January 2002 to be part of a treatment group for this study. Students were chosen for the tutoring program in the following manner:
1) Classroom teachers in grades one through four made student recommendations based on low test scores, poor classroom performance, and teacher observation to the school principal.

2) School principal discussed student recommendations with teachers and made final selection of twenty-five at-risk students.

3) School principal contacted parents of selected students and requested written permission for student participation in the tutoring program.

The twenty-five students in the treatment group received one-on-one tutoring in an after-school tutoring program provided by pre-service reading endorsement university tutors. The one-hour tutoring sessions were held twice a week over the two-quarter, 14-week sequence. Individualized instruction was based on the results of a battery of assessments administered throughout the winter quarter of the tutoring program. Literacy activities designed to remediate reading and writing difficulties were the focus of the spring quarter tutoring.

The other ninety-one students did not receive one-on-one tutoring, but instead received grade level instruction from school personnel. They were part of the control group for this study.

The word writing abilities of the 116 students were measured through the administration of the Word Writing CAFÉ. The writing assessment evaluated three aspects of word writing: student fluency in writing words, student accuracy in writing words, and student written production of multi-syllabic words. The first administration of the CAFÉ was given to the students as a pre-test before the tutoring program began. The
second administration of the CAFÉ served as the post-test at the conclusion of the tutoring program and school year.

Research Questions

This study investigated the following research questions:

1. Are there significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?
   
   1a. Are there significant differences in gains in word writing fluency between grade levels?
   
   1b. Does grade level interact with tutor group as with respect to gains in word writing fluency?

2. Are there significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

   2a. Are there significant differences in gains in word writing accuracy between grade levels?
   
   2b. Does grade level interact with tutor group with respect to gains in word writing accuracy?

3. Are there significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

   3a. Are there significant differences in gains in word writing complexity between grade levels?
3b. Does grade level interact with tutor group with respect to gains in word writing complexity?

**Data Entry**

The data from the pre-test and post-test administrations of the Word Writing CAFÉ were reviewed before statistical analyses were conducted. Any student with missing or incomplete data due to absences or unavailability was not included in the analyses. Students with incomplete information numbered twenty-seven and their data was not input as part of the hypotheses testing. A final review of the data confirmed complete sets of pre-test and post-test information for 116 students in grades one through four.

**Descriptive Measures**

A variety of statistical techniques were utilized to analyze the data. The Statistical Package for the Social Sciences (SPSS) was utilized for the purpose of analyses by the researcher. A test of Univariate Analysis of Variance was used to analyze the effects of the independent variables and their interactions on the dependent variables.

Effect size will be assessed with the partial eta-squared. The partial eta-squared statistic reports the “practical” significance of each term, based on the ratio of the variation (sum of squares) accounted for by the term, to the sum of the variation accounted for by the term and the variation left to error. Larger values of partial eta-squared indicate a greater amount of variation accounted for by the model term, to a maximum of 1. Even though an effect may be statistically significant, the partial eta-squared statistic helps with determining if the variation in the model is meaningfully large.
Quantitative Findings

This study analyzed the quantitative data of two independent groups, tutored and not tutored across four grade levels, and their outcomes, or dependent scores of the two groups, when using a writing assessment as an evaluation instrument. The results of the analyses of the dependent variables follow.

Dependent Variables

There were three dependent variables used in this study. The first dependent variable was the fluency gain score. Fluency is defined as the total number of words written by the student. A fluency gain score was derived by taking the mean of the difference between the post-tutoring test fluency score and the pre-tutoring test fluency score. Table 3 presents the means and the standard deviations for the fluency gain scores.
Table 3

*Descriptive Statistics for Fluency Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Tutor Group</th>
<th>Grade Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not tutored</td>
<td>1</td>
<td>17</td>
<td>16.8235</td>
<td>11.7219</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>22</td>
<td>13.5909</td>
<td>16.9639</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>29</td>
<td>2.6897</td>
<td>17.2649</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>23</td>
<td>-4.8261</td>
<td>15.4615</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>91</td>
<td>6.0659</td>
<td>17.6760</td>
</tr>
<tr>
<td>Tutored</td>
<td>1</td>
<td>5</td>
<td>17.0000</td>
<td>13.3791</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>17.8333</td>
<td>19.5899</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>8.5000</td>
<td>21.9203</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>12</td>
<td>-8.2500</td>
<td>19.7674</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>25</td>
<td>4.4000</td>
<td>21.6449</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>22</td>
<td>16.8636</td>
<td>11.7809</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>28</td>
<td>14.5000</td>
<td>17.2637</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>31</td>
<td>3.0645</td>
<td>17.2142</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>35</td>
<td>-6.0000</td>
<td>16.8471</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>116</td>
<td>5.7069</td>
<td>18.5139</td>
</tr>
</tbody>
</table>
Table 4 presents the ANOVA table.

Table 4

*Tests of Between-Subjects Effects for Fluency Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor Group</td>
<td>40.903</td>
<td>1</td>
<td>40.903</td>
<td>.151</td>
<td>.698</td>
<td>.698</td>
</tr>
<tr>
<td>Grade Group</td>
<td>8548.885</td>
<td>3</td>
<td>2849.628</td>
<td>10.518</td>
<td>.000</td>
<td>.226</td>
</tr>
<tr>
<td>Tutor*Grade</td>
<td>239.448</td>
<td>3</td>
<td>79.816</td>
<td>.295</td>
<td>.829</td>
<td>.829</td>
</tr>
</tbody>
</table>

The alpha level for all analyses was set at α = 0.05. The results of the analysis for the dependent variable of fluency gain indicate there was no significant main effect of tutor group, $F(7, 108) = 0.151, p = 0.698$. There was a significant main effect of grade group, $F(7, 108) = 10.518, p = 0.000$. There was no significant interaction between tutor group and grade group, $F(7, 108) = 0.295, p = 0.829$.

While there is a statistically significant main effect of grade group on the fluency gain score, the amount of variation in fluency gain explained by the grade group is indicated by an η² value of 0.226. Cohen (1987) would likely refer to this as a ‘very large’ effect size since he indicates ‘large’ effects are where η² = 0.14.
Figure 1 presents the plot of the estimated marginal means for the dependent variable of fluency gain.

![Estimated Marginal Means for Fluency Gain](image)

*Figure 1. Estimated Marginal Means for Fluency Gain.*

The estimated marginal means for fluency gain indicated that the fluency gain score is decreasing as the grade level increases and, since the lines are mostly parallel, there is little interaction between grade level and tutoring effects. This is supported in the statistical analysis for fluency gain when the grade and tutor interaction term was statistically insignificant at $F (7, 108) = 0.295$ and $p = 0.829$. 
The second dependent variable of this study was the accuracy gain score. The accuracy score is the total number of words written correctly by the student. The accuracy gain score was derived by taking the mean of difference between the post-tutoring test and the pre-tutoring test. Table 5 presents the means and the standard deviations for the accuracy gain scores.
Table 5

*Descriptive Statistics for Accuracy Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Tutor Group</th>
<th>Grade Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not tutored</td>
<td>1</td>
<td>17</td>
<td>12.9412</td>
<td>10.3045</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>22</td>
<td>7.8182</td>
<td>27.3663</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>29</td>
<td>1.0690</td>
<td>14.0660</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>23</td>
<td>-2.1739</td>
<td>14.0377</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>91</td>
<td>4.0989</td>
<td>18.2896</td>
</tr>
<tr>
<td>Tutored</td>
<td>1</td>
<td>5</td>
<td>15.4000</td>
<td>12.0540</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>13.5000</td>
<td>20.8878</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0.5000</td>
<td>3.5355</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>12</td>
<td>-4.1667</td>
<td>18.7899</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>25</td>
<td>4.3600</td>
<td>19.0085</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>22</td>
<td>13.5000</td>
<td>10.4733</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>28</td>
<td>9.0357</td>
<td>25.8635</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>31</td>
<td>1.0323</td>
<td>13.6051</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>35</td>
<td>-2.8571</td>
<td>15.5774</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>116</td>
<td>4.1552</td>
<td>18.3633</td>
</tr>
</tbody>
</table>
Table 6 presents the ANOVA table.

Table 6

*Tests of Between-Subjects Effects for Accuracy Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor Group</td>
<td>27.489</td>
<td>1</td>
<td>27.489</td>
<td>.087</td>
<td>.768</td>
<td>.108</td>
</tr>
<tr>
<td>Grade Group</td>
<td>4119.500</td>
<td>3</td>
<td>1373.167</td>
<td>4.367</td>
<td>.006</td>
<td>.108</td>
</tr>
<tr>
<td>Tutor*Grade</td>
<td>186.717</td>
<td>3</td>
<td>62.239</td>
<td>.198</td>
<td>.898</td>
<td>.108</td>
</tr>
</tbody>
</table>

The alpha level for all analyses was set at α = 0.05. The results of the analysis for the dependent variable of accuracy gain indicate there was no significant main effect of tutor group, $F(7, 108) = 0.087, p = 0.768$. There was a significant main effect of grade group, $F(7, 108) = 4.367, p = 0.006$. There was no significant interaction between tutor group and grade group, $F(7, 108) = 0.198, p = 0.898$.

While there is a statistically significant main effect of grade group on the accuracy gain score, the amount of variation in the model explained by the grade group is indicated by an η² value of 0.108. Cohen (1987) would likely refer to this as a rather ‘large’ effect size since he indicates ‘large’ effects are where η² = 0.14. The amount of variation in the model for fluency gain is more than two times the variation in the model for accuracy gain.
Figure 2 presents the data of the estimated marginal means for the dependent variable of accuracy gain.

The estimated marginal means for accuracy gain indicated that the accuracy gain score is decreasing as the grade level increases and, since the lines are mostly parallel, there is little interaction between grade level and tutoring effects. This is supported in the statistical analysis for accuracy gain when the grade and tutor interaction term was statistically insignificant at $F (7, 108) = 0.198$ and $p = 0.898$.

Figure 2. Estimated Marginal Means for Accuracy Gain.
The third dependent variable of this study was the complexity gain score. The complexity score is the sum of the number of syllables in the total words written accurately divided by the total number of words written accurately by the student. The complexity gain score was derived by taking the mean of the difference between the post-tutoring test complexity score and the pre-tutoring test complexity score. Table 7 presents the means and the standard deviations of the complexity gain scores.
Table 7

*Descriptive Statistics for Complexity Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Tutor Group</th>
<th>Grade Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not tutored</td>
<td>1</td>
<td>17</td>
<td>-0.0412</td>
<td>0.1583</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>22</td>
<td>0.0318</td>
<td>0.1961</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>29</td>
<td>0.0241</td>
<td>0.1745</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>23</td>
<td>0.0217</td>
<td>0.1042</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>91</td>
<td>0.0132</td>
<td>0.1620</td>
</tr>
<tr>
<td>Tutored</td>
<td>1</td>
<td>5</td>
<td>-0.1600</td>
<td>0.2302</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>-0.1833</td>
<td>0.0983</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>-0.2000</td>
<td>0.1414</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>12</td>
<td>-0.0167</td>
<td>0.1403</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>25</td>
<td>-0.1000</td>
<td>0.1658</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>22</td>
<td>-0.0682</td>
<td>0.1783</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>28</td>
<td>-0.0143</td>
<td>0.1994</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>31</td>
<td>0.0097</td>
<td>0.1795</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>35</td>
<td>0.0086</td>
<td>0.1172</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>116</td>
<td>-0.0112</td>
<td>0.1687</td>
</tr>
</tbody>
</table>
Table 8 presents the ANOVA table.

Table 8

*Tests of Between-Subjects Effects for Complexity Gain Dependent Variable*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor Group</td>
<td>0.314</td>
<td>1</td>
<td>0.314</td>
<td>12.130</td>
<td>0.001</td>
<td>0.101</td>
</tr>
<tr>
<td>Grade Group</td>
<td>0.150</td>
<td>3</td>
<td>0.050</td>
<td>1.926</td>
<td>0.130</td>
<td></td>
</tr>
<tr>
<td>Tutor*Grade</td>
<td>0.115</td>
<td>3</td>
<td>0.038</td>
<td>1.486</td>
<td>0.223</td>
<td></td>
</tr>
</tbody>
</table>

The alpha level for all analyses was set at $\alpha = 0.05$. The results of the analysis for the dependent variable of complexity gain indicate there was a significant main effect of tutor group, $F(7, 108) = 12.130$, $p = 0.001$. There was no significant main effect of grade group, $F(7, 108) = 1.926$, $p = 0.130$. There was no significant interaction between tutor group and grade group, $F(7, 108) = 1.486$, $p = 0.223$.

While there is a statistically significant main effect of tutor group on the complexity gain score, the amount of variation in the model explained by the tutor group is indicated by the $\eta^2$ value of 0.101. Cohen (1987) would likely refer to this as a rather ‘large’ effect size since he indicates ‘large’ effects are where $\eta^2 = 0.14$. 
Figure 3 presents the data of the estimated marginal means for the dependent variable of complexity gain.

![Graph](image)

**Figure 3. Estimated Marginal Means for Complexity Gain.**

The estimated marginal means for complexity gain scores for the not tutored group shows an increase for grade 1 to grade 2 and then there is essentially no gain or loss from grade 2 to grade 4. For the tutored group, there is a decrease in grade 1 to grade 3. This indicates a divergent interaction between the two groups from grade 1 to grade 3. From grade 3 to grade 4, the tutored group shows a sharp increase in the estimated marginal mean. This gives a crossover interaction effect at grade 4.
Pearson Correlation

A correlation analysis was run to determine if there was a relationship between the pre-test scores for the dependent variables of fluency, accuracy, and complexity, and the post-test scores for the dependent variables of fluency, accuracy, and complexity.

The degree of correlation is the extent to which there is a linear relationship between two variables (Aron & Aron, 1997). When the high scores of one variable go with high scores of another variable and the low scores of the two variables go together, a positive linear correlation exists. When the high scores of a variable go with the low scores of another variable, then a negative linear correlation exists. The Pearson Correlation coefficient is between –1 and 1. A –1 indicates a perfect negative correlation and a 1 indicates a perfect positive correlation. Generally, the Pearson Correlation coefficient falls between –1 and 1, and the closer the coefficient is to –1 or 1, the stronger the relationship between the two variables.

A review of the correlations between the pre-test scores for the dependent variables of fluency, accuracy, and complexity, and the post-test scores for the dependent variables of fluency, accuracy, and complexity shows strong correlations between fluency and accuracy scores and weaker correlations between fluency, accuracy, and complexity scores.

Table 9 presents the data of the correlations between the pre-test scores and the post-test scores for the dependent variables of fluency, accuracy, and complexity.
Table 9

*Pearson Correlation Coefficients*

<table>
<thead>
<tr>
<th></th>
<th>Pre Test Fluency</th>
<th>Pre Test Accuracy</th>
<th>Pre Test Complexity</th>
<th>Post Test Fluency</th>
<th>Post Test Accuracy</th>
<th>Post Test Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test Fluency</td>
<td>0.842*</td>
<td>0.190*</td>
<td>0.751*</td>
<td>0.646*</td>
<td>0.244*</td>
<td></td>
</tr>
<tr>
<td>Pre Test Accuracy</td>
<td></td>
<td>0.172</td>
<td>0.637*</td>
<td>0.699*</td>
<td>0.178</td>
<td></td>
</tr>
<tr>
<td>Pre Test Complexity</td>
<td></td>
<td>0.205*</td>
<td>0.169</td>
<td>0.428*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Test Fluency</td>
<td></td>
<td></td>
<td>0.897*</td>
<td>0.132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Test Accuracy</td>
<td></td>
<td></td>
<td></td>
<td>0.099</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

The Pearson Correlation coefficient for the dependent variable of pre-test fluency and the dependent variable of pre-test accuracy is 0.842 and p = 0.000, indicating a very strong positive correlation between the two dependent variables that is statistically significant. When students score high on the pre-test fluency score, it is very likely they will score high on the pre-test accuracy score.

The same holds true for the relationship between the dependent variables of pre-test fluency and post-test fluency. The Pearson Correlation coefficient is 0.751 and p = 0.000. The relationship between pre-test fluency and post-test accuracy on the post-test shows the Pearson Correlation coefficient is 0.646, p = 0.000. This indicates that students
who score well on the pre-test fluency variable will likely score well on the post-test fluency and the post-test accuracy portions of the word writing assessment.

The correlation between the dependent variable of pre-test fluency and the dependent variable of pre-test complexity with a Pearson Correlation coefficient = .190, p = 0.034, as well as the dependent variable of pre-test fluency and the dependent variable of post-test complexity (Pearson Correlation coefficient = 0.244, p = 0.008) is statistically significant; however, the degree of correlation is weaker than the previous dependent variables fluency and accuracy.

Examining the correlations for the dependent variable of pre-test accuracy reveals a strong correlation to the dependent variable of post-test fluency (Pearson Correlation coefficient = 0.637, p = 0.000) and to the dependent variable of post-test accuracy (Pearson Correlation coefficient = 0.669, p = 0.000). The results are also statistically significant. This indicates that students who score well on the pre-test accuracy variable will likely score well on the post-test fluency and the post-test accuracy portions of the word writing assessment.

The correlations for the dependent variable of pre-test accuracy to both the dependent variables of pre-test and post-test complexity are not significant at the p = 0.05 level.

The dependent variable of pre-test complexity and the dependent variable of post-test complexity do not show strong correlations with any other dependent variable. Even the correlation between the pre-test complexity score and the post-test complexity score is only moderate with the Pearson Correlation coefficient = 0.428, p = 0.000.
In addition to the correlation analysis between the pre-test scores and the post-test scores for the dependent variables of fluency, accuracy, and complexity, a similar analysis was run to see if there was a relationship between the accuracy gain scores, fluency gain scores, and the complexity gain scores. Table 10 presents the data of the correlations between the gain scores for the dependent variables of fluency, accuracy, and complexity.

Table 10

Pearson Correlation Coefficients for Dependent Variable Gain Scores

<table>
<thead>
<tr>
<th></th>
<th>Accuracy Gain</th>
<th>Fluency Gain</th>
<th>Complexity Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy Gain</td>
<td>0.787*</td>
<td>-0.137</td>
<td></td>
</tr>
<tr>
<td>Fluency Gain</td>
<td>-0.225*</td>
<td>-0.225*</td>
<td></td>
</tr>
</tbody>
</table>

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

The correlation between the accuracy gain score and the fluency gain score is a very strong, positive correlation as indicated by the Pearson Correlation coefficient = 0.787, p = 0.000. Student who score high in accuracy gain will more than likely score high in fluency gain. Conversely, a low accuracy gain score will almost guarantee a low fluency gain score. The correlation between accuracy gain scores and complexity gain scores is statistically insignificant and the correlation is a weak, negative relationship as indicated by the Pearson Correlation coefficient = -0.137, p = 0.144. The correlation between fluency gain scores and the complexity gain scores is statistically significant at the 0.05 level; however, it is weak and negative as shown by the Pearson Correlation coefficient = -0.225 and p = 0.015.
Supplemental Analyses of Grade Level Differences

The Univariate ANOVAs clearly show there is a significant main effect for grade level with the accuracy gain score and the fluency gain score; however, the ANOVA analysis does not identify which means are statistically different from the other means. A post hoc test identified which means of the grade levels are statistically different. In this analysis, the Bonferroni method was selected because there are a small number of comparisons between means to be made and it is more sensitive when the number of comparisons is small.

The post hoc test shows that the only grade level means that are significantly different for accuracy gain are grade levels 1 and 4. They have a mean difference of 16.35, with a p-value of 0.006. The 95% confidence interval is 3.39 to 29.32, a range of numbers which do not contain zero. This is another indication that the difference in accuracy gain scores is statistically significant between grade levels 1 and 4.

The difference between grade levels 2 and 4 is large, although it does not meet the strict adherence to the p-level requirement of being below 0.05 for statistical significance. The p-value = 0.056 and the 95% confidence interval for the difference in means is –0.1913 to 23.98.

The difference between grade levels 1 and 3 is also large, although it does not meet the strict adherence to the p-level requirement of being below 0.05 for statistical significance. The p-value = 0.079 and the 95% confidence interval for the difference in means is –25.75 to 0.82.

The post hoc test of multiple comparisons of fluency gain scores for grade level shows there is a statistically significant difference in fluency gain scores between grade
levels 1 and 3, grades 1 and 4, and grades 2 and 4. The analysis for fluency gain between grade levels 1 and 3 shows $p = 0.020$ and the 95% confidence interval is 1.47 to 26.13. The analysis for grade levels 1 and 4 shows $p = 0.000$ and the 95% confidence interval is 10.83 to 34.90. The analysis for grade level 2 and 4 shows $p = 0.000$ and the 95% confidence interval is 9.28 to 31.72. The difference between grade level 2 and 3 is just outside the strict adherence to $p<0.05$ with a $p = 0.053$ and a 95% confidence interval – 0.097 to 22.97.

The complexity gains analysis shows a statistically significant main effect due to tutoring. Post Hoc tests were not conducted because there are fewer than three treatment groups for tutoring. A two sample t-test confirms the ANOVA findings that there is a difference between the two tutoring treatments. The t-statistic is –3.078 and $p = 0.003$.

Summary

In summary, 116 students participated in this study that examined the effectiveness of one-on-one tutoring on the word writing abilities of students at-risk for reading and writing difficulties. The dependent variables, or outcomes, were the gain scores for fluency, accuracy and complexity, as determined from the Word Writing CAFÉ assessment instrument, for the tutored and not tutored groups.

Results indicate there was no significant effect for the dependent variables of fluency gain and accuracy gain for students tutored or not tutored. There was a significant effect on grade level. For the dependent variable complexity gain, there was a significant effect for tutor group, but not a significant effect by grade level. None of the dependent variables were affected by the interaction of grade level and tutoring. These findings are discussed in chapter 5.
CHAPTER FIVE

Summary, Discussion, Implications, and Recommendations

The purpose of this study was to analyze the effects of one-on-one tutoring on the word writing abilities of students identified as at-risk for literacy difficulties. The study took place in a small rural elementary school in the Appalachian region of the Midwest from January 2002 to May 2002. A total of 116 students in grades one through four participated in the study. Every student completed a word writing assessment as part of a school plan to evaluate students’ word writing abilities. These results were compared with students tutored in an after-school reading tutoring program. A summary of the statistical analyses of the findings, a discussion of the findings, implications of the findings, and recommendations are presented below.

Research Questions and Design

This study attempted to answer the following research questions:

1. Are there significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?
   
   1a. Are there significant differences in gains in word writing fluency between grade levels?
   
   1b. Does grade level interact with tutor group with respect to gains in word writing fluency?

2. Are there significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?
2a. Are there significant differences in gains in word writing accuracy regarding grade levels?

2b. Does grade level interact with tutor group with respect to gains in word writing accuracy?

3. Are there significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

3a. Are there significant differences in gains in word writing complexity between grade levels?

3b. Does grade level interact with tutor group with respect to gains in word writing complexity?

The independent variable used in this study involved two groups, a treatment group and a control group. The treatment group was twenty-five students selected for an after-school reading tutoring program. School personnel selected students for the tutoring based on identified needs in reading and writing. In addition to grade level instruction during the regular school day, students in the treatment group received one-hour of individualized instruction twice a week after-school for fourteen weeks provided by a pre-service reading endorsement university tutor. The control group consisted of ninety-one students. Students in the control group received instruction during the regular school day.

Grade level for grades one, two, three, and four was the second independent variable. Grade level was used as a moderating independent variable for the purpose of
the statistical analyses. Grade level was expected to influence the gain scores for the word writing abilities in fluency, accuracy, and complexity.

The dependent variables were the gain scores of word writing fluency, accuracy, and complexity. A gain score for fluency (the total number of words written) is defined as the mean of the difference between the post-tutoring test fluency score and the pre-tutoring test fluency score. A gain score for accuracy (the total number of words written correctly) is derived by taking the mean of difference between the post-tutoring test and the pre-tutoring test. A gain score for complexity (the sum of the number of syllables in the total words written accurately divided by the total number of words written accurately) is calculated by taking the mean of the difference between the post-tutoring test complexity score and the pre-tutoring test complexity score.

The data were analyzed using the Statistical Package for Social Sciences (SPSS) to conduct a $2 \times 4$ Univariate Analysis of Variance. The following are the results of the hypotheses testing.

**Summary of the Findings**

The summary of the findings recaps the effects of tutoring group and grade level group on the word writing aspects of fluency, accuracy, and complexity for children in grades one, two, three, and four.

*Word Writing Fluency*

The first dependent variable was the fluency gain score. It was derived by taking the mean of the difference between the post-treatment test word writing fluency score and the pre-treatment test word writing fluency score. Findings of the hypothesis testing relate to the following research question:
1. Are there significant differences in gains in word writing fluency between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

The statistical test showed that there was no significant difference between groups that were tutored and not tutored, \( F(7, 108) = 0.151, p = 0.698 \). There is no significant difference in the two means. The tutored group did not make significant gains in word writing fluency compared to the group that was not tutored.

*Grade level.* 1a. Are there significant differences in gains in word writing fluency between grade levels?

The statistical test shows there is a significant difference in the fluency gain scores due to grade level, \( F(7,108) = 10.52, p= 0.000 \). Both the tutored and the not tutored means for grade levels 1 and 2 were much higher than grade levels 3 and 4. In other words, the tutored and not tutored groups in grade levels 1 and 2 made significant gains in word writing fluency compared to the tutored and not tutored groups in grade levels 3 and 4.

*Tutor group.* 1b. Does grade level interact with tutor group with regard to gains in word writing fluency?

The statistical test demonstrated that there was no significant interaction between tutor group and grade level, \( F(7, 108) = 0.295, p = 0.829 \), for fluency gain. The tutor group did not interact with grade level concerning fluency gain scores.

*Word Writing Accuracy*

The second dependent variable was the accuracy gain score. It was derived by taking the mean of the difference between the post-treatment test word writing accuracy
score and the pre-treatment test word writing accuracy score. Findings of the hypothesis testing relate to the following research question:

2. Are there significant differences in gains in word writing accuracy between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

The statistical test demonstrated that there was no significant difference between groups that were tutored and not tutored, $F(7, 108) = 0.087, p = 0.768$. There is no significant difference in the two means. The tutored group did not make significant gains in word writing accuracy compared to the group that was not tutored.

Grade level. 2a. Are there significant differences in gains in word writing accuracy between grade levels?

The statistical test shows there is a significant difference in the accuracy gain scores due to grade level, $F(7,108) = 4.367, p= 0.006$. Both the tutored and the not tutored means for grade levels 1 and 2 were much higher than grade levels 3 and 4. In other words, the tutored and not tutored groups in grade levels 1 and 2 made significant gains in word writing accuracy compared to the tutored and not tutored groups in grade levels 3 and 4.

Tutor group. 2b. Does grade level interact with tutor group with respect to gains in word writing accuracy?

The statistical test demonstrated that there was no significant interaction between tutor group and grade level, $F(7, 108) = 0.198, p = 0.898$, for accuracy gain. The tutor group did not interact with grade level concerning accuracy gain scores.
Word Writing Complexity

The third dependent variable was the complexity gain score. It was derived by taking the mean of the difference between the post-treatment test word writing complexity score and the pre-treatment test word writing complexity score. Findings of the hypothesis testing relate to the following research question:

3.  Are there significant differences in gains in word writing complexity between students that received one-on-one tutoring and students that did not receive one-on-one tutoring?

The statistical test demonstrated that there was a significant difference between groups that were tutored and not tutored, $F(7, 108) = 12.130$, $p = 0.001$. There is a significant difference in the two means. The not tutored group made significant gains in word writing complexity compared to the tutored group; however, it is interesting to note that the findings show the gains were very close to zero.

Grade level. 3a. Are there significant differences in gains in word writing complexity between grade levels?

The statistical test shows there is no significant difference in the complexity gain scores due to grade levels, $F(7,108) = 1.926$, $p= 0.130$. The complexity gain means for all grade levels were near zero.

Tutor group. 3b. Does grade level interact with tutor group with respect to gains in word writing complexity?

The statistical test demonstrated that there was no significant interaction between tutor group and grade level, $F(7, 108) = 1.486$, $p = 0.223$, for complexity gain. The tutor group did not interact with grade level concerning complexity gain scores.
Pearson Correlation

A correlation analysis was run to determine if there was a relationship between the pre-test scores for the dependent variables of fluency, accuracy, and complexity, and the post-test scores for the dependent variables of fluency, accuracy, and complexity. The statistical test demonstrated strong correlations between fluency and accuracy scores and weaker correlations between fluency, accuracy, and complexity. Thus, when students score high on the pre-test fluency score, it is very likely they will score high on the pre-test accuracy score, as well as the post-test fluency and post-test accuracy portions of the word writing assessment. When students score well on the pre-test accuracy variable, it is also very likely they will score well on the post-test fluency and the post-test accuracy portions of the word writing assessment.

In addition to the correlation analysis between the pre-test scores and the post-test scores for the dependent variables of fluency, accuracy, and complexity, a similar analysis was run to see if there was a relationship between the accuracy gain scores, fluency gain scores, and the complexity gain scores. The statistical analysis demonstrated a very strong, positive correlation between the accuracy gain scores and the fluency gain scores. Therefore, students who score high in accuracy gain will more than likely score high in fluency gain. The correlation between fluency gain scores and the complexity gain scores were weak and negative. Students who score high in fluency gain may score low in complexity gain.
Supplemental Analyses of Grade Level Differences

The Univariate ANOVAs clearly demonstrated the anticipated main effect for grade level with the accuracy gain score and the fluency gain score. A post hoc test was then used to identify which means of the grade groups were statistically different.

The post hoc test shows there is a statistically significant difference in fluency gain scores between grades 1 and 3, grades 1 and 4, and grades 2 and 4. The difference between grades 2 and 3 is also large, although it is not statistically significant. These findings support results from the ANOVA statistical test. The tutored and not tutored groups in grade levels 1 and 2 made significant gains in word writing fluency compared to the tutored and not tutored groups in grade levels 3 and 4.

The post hoc test shows there is a statistically significant difference in accuracy gain scores between grades 1 and 4. The difference between grades 2 and 4, and grades 1 and 3, are also large, although the differences are not statistically significant. These findings support results from the ANOVA statistical test. The tutored and not tutored groups in grade levels 1 and 2 made significant gains in word writing accuracy compared to the tutored and not tutored groups in grade levels 3 and 4.

Discussion of the Findings

Based on the results of the hypotheses testing, this section discusses the findings concerning the outcomes, or dependent variables of word writing fluency, accuracy, and complexity, for the treatment and control groups and grade levels.
Word Writing Fluency

A discussion of the findings for word writing fluency is presented in regards to the independent variables of grade level and tutor group.

Grade level. Grade level was an important and anticipated aspect that affected the outcome of word writing fluency. There was a significant main effect of grade level. The students in grade levels 1 and 2 made significant gains on word writing fluency compared to the students in grade levels 3 and 4.

Young children in these primary grades, especially first and second grades, are considered to be in a beginning reading and writing stage of literacy development (Cooper & Kiger, 2005). During this stage, children are learning to read and write in conventional ways. They are expanding personal vocabularies of words for reading and writing (Clay, 2001) through classroom instruction (Bear et al., 2003; Cunningham, 2000). Early readers learn small, monosyllabic words. These small words will help them to use what they know about structure and spelling of words to generate new, bigger, and more difficult words in later grades (Taberski, 2000).

Although a review of the words written by the students was not conducted, an inference can be made that students in the earlier grades made greater gains in word writing fluency because they were writing smaller words like high-frequency words and sight words, and because they were writing smaller words, they could write more words during the time allotted for the word writing assessment.

Older children, primarily the fourth grade students, are working in a stage of fluency reading and writing (Cooper & Kiger, 2005). They are working at aspects of writing with growing complexity and flexibility. This may mean that task of writing
becomes one of writing longer, more sophisticated words. Thus, the gains in word writing fluency will be smaller as students advance in grade level.

Therefore, it may mean that word writing for the assessment is one of a student choosing to write either small words or long words. As first and second graders are developing a reading and writing vocabulary of smaller words as part of their instruction in the early grades, it is expected that they would make greater gains in writing words than third and fourth graders who have a store of these words (Cunningham, 2000) and are learning to write longer, more complex words as part of their instruction in higher grades, resulting in smaller gains of word writing.

*Tutor group.* The statistical analyses regarding word writing fluency indicated there was no main effect of tutor group. The tutored group did not make significant gains on word writing fluency compared to the group that was not tutored. Regardless of tutor group, most students in grades one, two, and three made gains in word writing on the post-test administration of the word writing assessment.

Fourth graders in this study, whether tutored or not, did not make gains in writing words on the post-test administration. Fourth graders wrote fewer words as reflected in the negative means for fluency gain. To clarify, the means represent the change from the pre-test and the post-test in the fluency of total words written. Most fourth graders wrote more words during the pre-test administration of the CAFÉ, thus the gain score is calculated as a negative score for mean difference.

Although these findings do not show the influence of the tutoring treatment, it may not mean that the treatment was ineffective. Consideration may be given to the selection of students for the one-on-one tutoring intervention. Randomized assignment of
students to a treatment and control group was a study limitation. Instead, students identified as most at-risk for literacy failure were assigned to the treatment group. Findings show that these low-performance students made similar gains to the control group. The results of the treatment may be interpreted as successful since the at-risk students maintained the same gains in word writing fluency as their peers.

**Word Writing Accuracy**

A discussion of the findings for word writing accuracy is presented in regards to the independent variables of grade level and tutor group.

**Grade level.** Grade level group was again an important and anticipated aspect that affected the outcome of word writing accuracy. There was a significant main effect of grade level. The students in grade levels 1 and 2 made significant gains on word writing accuracy compared to the students in grade levels 3 and 4.

As indicated in the discussion of findings regarding word writing fluency, younger students are making greater gains in the stages of beginning writing, while older students gains in writing are smaller as they are learning to write longer words based on the generative nature of words. References to stages of literacy development (Cooper & Kiger, 2005) and emphases of classroom instruction on building small or more complex words for reading and writing dependent on the grade level support this finding (Clay, 2001; Cunningham, 2000).

**Tutor group.** The statistical analyses regarding the word writing accuracy indicated there was no main effect of tutor group. The tutored group did not make significant gains in word writing accuracy compared to the group that was not tutored.
Regardless of tutor group, most students in grades one, two, and three made gains in writing more accurately spelled words on the post-test administration of the word writing assessment. These results support the findings of the correlation analyses between the fluency gain scores and the accuracy gain scores as strong, positive correlations. If students, particularly students in grades one and two, made fluency gains, they made accuracy gains as well.

Similar to findings for fluency gain, fourth graders, whether tutored or not, did not make gains in writing accurately spelled words on the post-test administration. Fourth graders wrote less accurate words as reflected in the negative means for accuracy gain. Most fourth graders wrote more words accurately during the pre-test administration of the CAFÉ, thus the gain score is calculated as a negative score for mean difference. It may be that the written responses from fourth graders during the test administration in the form of sentences rather than lists of words had an impact on the number of different words fourth graders, in both the tutored and not tutored groups, could write in the time allotted for the test.

Comparable to the findings of tutor group effect on fluency gain, these findings do not show main effect of tutor group on accuracy gain. Nonetheless, the results of the treatment may be interpreted as effective since the lowest-performing students selected for the study made similar gains to their average-performance peers in word writing accuracy.

*Word Writing Complexity*

A discussion of the findings for word writing complexity is presented in regards to the independent variables of grade level and tutor group.
Grade level. There was no main effect of grade level. A look at the mean scores for complexity gain for the total of all students shows that first and second graders had negative gains. This might reinforce the suggestion that students, particularly younger students that are building cognitive stores of words for reading and writing, prefer to write smaller words or interpret the task of writing as getting down as many words as possible rather than writing more complicated, longer words. Older students, while learning about the orthography of longer words, write fewer words and thus make gains, although slight, in word writing complexity.

Tutor group. The statistical analyses regarding word writing complexity indicated there was main effect of tutor group. It is important to note that the effect was not a result of adding the treatment. Instead, the not tutored group made significant gains in word writing complexity as compared to the tutored group in this study.

Although there is a significant effect for the independent variable of tutoring group, it is important to see that the not tutored group did not make substantial gains in word writing complexity. The minute gains in complexity represent a fraction of a point of increase. This means that the not tutored group made less than a one word gain in the post-test administration and, as indicated in the findings, not tutored first graders made negative gains in complexity during the second administration of the writing assessment as compared to the pre-test.

The tutored group in every grade level, compared to the not tutored group, wrote less complex words during the post-treatment administration of the writing assessment than during the pre-treatment assessment, thus the results of the analysis show a negative gain score for word writing complexity.
This may mean that the quantitative formula for calculating the complexity score in the word writing assessment (the sum of the number of syllables in the total written words spelled correctly divided by the total written words spelled correctly) nullifies the qualitative work the students are putting forth in approximating the correct spelling of a longer word. In other words, the complexity score does not value the estimations students are making in writing more complex words. Because the approximations the students are making in writing longer words do not count towards scoring for complexity, very little can be calculated in the complexity score, resulting in very small gains for word writing complexity. Identifying and following the developmental spellings of children is essential for accelerated progress in writing (Bear et al., 2003). It may be that the complexity variable, as calculated, is less significant when compared to the outcomes for fluency and accuracy.

Implications of the Study

There are several implications that can be drawn from the findings of this study. This section will discuss implications for teachers and for research in regards to word writing fluency, accuracy, and complexity.

Word Writing Fluency

Although the quantitative results did not show statistically significant results for one-on-one tutoring on the word writing abilities of fluency, findings do indicate that children in primary grades, especially grades one and two, made gains in word writing fluency despite the tutor group.

Implications for teachers. Word recognition is critical to reading and writing with fluency (Fountas & Pinnell, 1996). Classroom instruction should incorporate word study
in various ways. Explicit instruction in word work or demonstration of the generative nature of words (how to get to new words using what children know about words and word parts) and the reciprocity of reading and writing are essential (Bear et al., 2003, Taberski, 2000).

Teachers should incorporate massive amounts of text read by students at their appropriate independent and instructional levels to reinforce automatic word recognition and develop strategies for noticing and learning new words. In addition, books read aloud to students would expose them to new words and different ways to use words.

Teachers should plan daily, authentic writing activities. Writing activities encourage children to notice finer details of print and develop phonemic awareness and sequential organizations of text (Schmitt et al., 2005).

Teachers should administer word writing assessments, such as Leal’s (2005/2006) CAFÉ, frequently and ongoing as a check on each student’s progress in writing more words. Teachers can analyze the results to inform their instruction in word study, demonstration, writing conferences, and book choice for students, as well as track the progress of the student’s writing.

**Implications for research.** Findings from this study regarding the impact of one-on-one tutoring show that students identified as the lowest-performing can make gains in word writing fluency commensurate with their average-performing peers. This may help to justify the importance of literacy intervention as a preventive measure for children that are at-risk for reading and writing failure. Individualized instruction that identifies the strengths and needs of struggling students and provides high levels of expertise and intensity to unravel confusions in literacy learning and build an effective processing
system that problem solves and grows should be further researched. Studies on the effectiveness of one-on-one tutoring should incorporate random assignment of students to treatment and control groups. Additionally, studies on the effectiveness of one-on-one tutoring should involve larger numbers of student participants.

*Word Writing Accuracy*

Although the quantitative results did not show statistically significant results for one-on-one tutoring on the word writing abilities of accuracy, findings do indicate that children in primary grades, especially grades one and two, made gains in word writing accuracy despite the tutor group.

*Implications for teachers.* Gains in word writing accuracy are highly correlated to gains in word writing fluency. Thus, implications for teachers regarding word writing accuracy are very similar to implications for teachers regarding word writing fluency. Quality classroom instruction that emphasizes speaking, reading, and writing is vital to developing word knowledge and usage (Clay, 2004).

Teachers should incorporate instructional approaches related to building fluency with words and known word parts. Words that students know how to spell correctly make up their personal writing vocabularies (Clay, 2001). These vocabularies of known words should be used to teach new words for both reading and writing purposes.

*Implications for research.* Analyses of existing studies on the Word Writing CAFÉ (Leal, 2005/2006) reveal commonly-written words. These words can be used for instructional purposes to build word stores or as a meter of teacher’s instruction. Additional research on high-frequency word development and sight word development in early grades should continue and inform classroom instruction.
Further research, particularly with older students, on the development of accuracy in spelling of longer words in isolation and within the context of authentic writing, should be explored and studied. More information is needed in regards to making gains in word writing fluency and accuracy as compared to making gains in word writing complexity.

**Word Writing Complexity**

Although the quantitative results indicated statistical significance regarding the word writing complexity between students who were tutored and students who were not tutored, it was the not tutored group that made significant gains in word writing complexity compared to the tutored group in this study.

**Implications for teachers.** Teachers should use ongoing assessments to inform their instruction for children. Diagnostic writing assessments track students’ progress or signal areas of need. Teachers should provide daily opportunities for writing for different purposes such as journal writing and self-authored books that involve self-evaluation and rubric usage. Teachers should explore different genres of both reading and writing, including poetry.

Teachers and schools should consider designing intervention programs based on the continual analyses of children’s progress. This is not a call for more standardized testing, but rather an opportunity for schools to form study groups or maintain common planning time so that colleagues can discuss and plan for intervention.

Professional development for teachers is crucial. Students that continue to experience difficulty need expert instruction based on their individual needs. Specialists working collaboratively with classroom teachers can provide instruction for acceleration.
Implications for research. An analysis of the data indicates a sharp contrast regarding the gain differences for fluency and accuracy between first and second graders compared to third and fourth graders. Although third graders, especially those in the tutored group, did make gains in fluency, it was not to the extent that first and second graders made gains in fluency word writing. Fourth graders, as previously noted, made negative gains in all areas of word writing. The written responses from fourth graders during the test administration in the form of sentences rather than lists of words most likely had an impact on the number of different words fourth graders could write in the time allotted for the test.

A look at ongoing intervention for children who continue to lag behind peers after second grade and a thoughtful look at assessment and instruction for classrooms may help to accelerate children that remain at-risk for reading failure in higher grades. Research shows that children who experience continued failure in school will dislike reading, writing and school (Juel, 1988).

The Word Writing CAFÉ (Leal, 2005/2006) is evolving as a result of current studies on its procedures and effectiveness. Recent recommendations to refine the instrument include plans to establish national averages for word writing in grades 1-6, as well as to amend directions for administration and scoring. A nationwide sampling is being conducted to establish grade-level benchmarks for word writing abilities in fluency, accuracy, and complexity. Directions for administering the assessment with specific directions for children to write smaller words for a period of five minutes, followed by specific directions to write longer, harder words for five minutes, may be a more precise indicator of fluency and accuracy, as well as complexity. Adaptations in scoring will
include an additional aspect that requires students to read back their written responses, thus emitting more qualitative information about the students’ areas of needs and strengths, particularly in their approximations of more complex and longer words. Continued research on the CAFÉ will make it a stronger and more valuable tool for assessing students’ word writing abilities and for informing student-centered literacy instruction.

Recommendations for One-on-One Literacy Tutoring

The university-school tutoring program was a unique one-on-one literacy intervention program and was studied to determine its effectiveness on the word writing abilities of low-performing students. Although results indicate there was no statistically significant effect on word writing abilities for tutored students participating in the study, further research is needed. Aspects such as duration of the program and enhancement of the word writing assessment might be considered in follow-up studies. Consideration regarding instructional components of the intervention lessons may include more specific word writing activities integrated into the reading and writing plans for remediation. Word writing activities for younger children could emphasize building personal vocabularies of high-frequency words and sight words, while word writing activities for older children in grades three and four could focus on constructing longer words with particular stress on generative patterns within words, meaningful units such as prefixes and suffixes, syllables, and common derivations of words.

The activity plan for each tutoring session during the winter quarter tutoring could include the following components: (a) 2-3 minutes of fluency writing, (b) 5-10 minutes of fluency reading, including repeated readings, paired readings, or echo readings, (c) 30-40
minutes of assessments, (d) 10-15 minutes of an interactive reading or writing activity or game, as well as initial discussion and brainstorming about the student’s authoring of a children’s book in the spring quarter tutoring sessions (e) 5-10 minutes of reading aloud, and (f) 2-5 minutes of evaluation by the university tutor and student in which each shared and recorded thoughts on their favorite and least favorite parts of the tutoring session.

The activity plan for each tutoring session during the spring quarter tutoring could include the following components: (a) 2-3 minutes of fluency writing, (b) 5-10 minutes of fluency reading that includes anything the child has written, as well as a variety of texts for paired reading and echo reading, (c) 5 minutes of word work in which tutors assist students in changing known words into new words using magnetic letters to modify onsets, inflectional endings, and word parts, (d) 20-30 minutes of interactive writing in the form of student’s authoring a book, (e) 10 minutes for sharing writing in which no less than three students and their tutors cluster to talk about students’ books and writing, (f) 5-10 minutes of reading aloud by the tutor to the cluster of students and, as in the previous quarter, (g) 2-3 minutes of evaluation by the university tutor and student in which each shared and recorded thoughts on their favorite and least favorite parts of the tutoring session.

In the following sections, word writing aspects of fluency, accuracy and complexity for tutoring sessions will be further explained.

Word Writing Fluency

Fluency writing for two or three minutes at the beginning of the tutoring sessions involves the student writing words in a speeded manner of production. The tutor calls out known words or partially known words to the student who, in turn, writes the words on a
chalkboard or whiteboard. The student writes the word quickly and checks the word by reading it back to the tutor, running a finger under the word to check for accuracy. If a word is written incorrectly (partially known), the tutor shows the student correct spelling of the word and the student writes the word again several times. The written production helps the child to learn the word in all its detail, meaning all the letters of the word in correct sequence from left to right. Tutors should focus on 2-3 partially known words during this activity.

Interactive word writing activities for the tutoring sessions should include explicit instruction of how words work. Generally referred to as word work (Bear et al., 2003), tutors can show students how to use known words or parts of words to figure out new words. Using magnetic letters or showing the relationships in written form, tutors can show students how to change a known word to a new word by changing or adding word parts. For example, if the child wants to write “book” and knows the word “look,” the teacher can show how to change the onset of “look” to make “book.” Such direct instruction can be integrated in the reading or writing activities of the winter quarter tutoring sessions or during the interactive writing of the student’s book during the spring tutoring sessions. The goal of word work is to show students how to get to new words from known words so that word recognition is speeded and increased during acts of literacy.

*Word Writing Accuracy*

Tutor’s observation of students must include systematic record keeping of accurately-spelled words. Students are building their personal vocabularies with each experience with text that fits their independent or instructional level of learning. Records
of known words in writing should document words students write during the tutoring sessions. These words can be used for word work activities and integrated into authentic writing activities. The goal is to help the students use what they know to increase their writing vocabularies and writing accuracy.

The word writing assessment described in this study can also help tutors to track the students’ personal vocabularies. In concert with the assessment, the records of known writing words can be compared to the words produced in the word writing assessment. Results from the word records and assessments can guide targeted instruction in word learning.

Frequent checks on word writing can also be integrated in the spring quarter tutoring sessions using a modified CAFÉ. A five-minute word writing assessment could be administered every two weeks to determine gains in word written accurately. Accurately-spelled words can be documented in student’s records.

*Word Writing Complexity*

There is no limit to the kinds and numbers of words students can generate from their personal vocabularies. Explicit word work that shows the student how to change a known word to a new word, and records of writing words used together with word writing assessments, should assist the tutor in providing individualized instruction to continually increase students’ word writing abilities in complexity, particularly those students in higher grade levels.

Students can record their expanding vocabularies in personal dictionaries. As students notice and learn longer, harder words, they can add the words to their own
dictionaries and use it as a reference for reading and writing in both tutoring sessions and their classes.

Summary

The intent of this study was to examine the effects of a literacy intervention for low-performance students on gains in word writing abilities for fluency, accuracy, and complexity when using the Word Writing CAFÉ (Leal, 2005/2006) as an evaluation instrument. This study specifically explored the impact that one-on-one tutoring had on students’ gains in writing words, correctly spelled words, and multi-syllabic words over a 14-week period in a university-school tutoring program.

Literacy interventions, as defined for the purpose of this study, are extraordinary instructional supports for children who have difficulties in reading and writing (Allington, 2002; Snow, Burns, & Griffin, 1998). Research shows that one-on-one tutoring, an instructional method in a literacy intervention, has produced successful results (D'Agostino & Murphy, 2004; Duffy-Hester, 1999; Elbaum, Vaughn, Hughes, & Moody, 2000).

The use of purposeful writing assessments embedded in instruction is essential for students identified as needing literacy intervention so that intervention is individualized to their needs (Akhavan, 2004). Three different types of writing assessments including authentic, standardized, and diagnostic assessments were explained in this study. Two assessments were identified as standardized measures that provide specific information about a student’s writing: Clay’s (2001) An Observation Survey of Early Literacy Achievement and Leal’s (2005/2006) Word Writing CAFÉ.
This study considered the significant differences in gains in word writing for fluency, accuracy, and complexity between students that were tutored and students that were not tutored. Additionally, this study measured significant differences in gains in word writing for fluency, accuracy, and complexity between grade levels, as well as grade level interaction with tutor group with respect to gains in word writing fluency, accuracy, and complexity.

Two groups of participants were involved in this study: twenty-five low-performing students in grades one through four in a small Midwest elementary school and twenty-five university students enrolled as early childhood teacher education majors in a local, large state university. The students were recommended to the tutoring program based on poor classroom performance and low school test scores. The university students were selected through a formal application process with the university college of education. They completed one academic year of university coursework that incorporated one-on-one tutoring with a student participant at the local elementary school twice a week after-school for two quarters. The focus of the coursework and tutoring evolved around assessment and remediation of reading and writing difficulties.

During the same two quarters of the school year, the participating elementary school administered the Word Writing CAFÉ to all 116 students in grades one through four as part of a school plan to assess children’s growth in word writing abilities for fluency, accuracy, and complexity. The students’ word writing assessments from the pre-test and post-test administrations were scored by three raters associated with the university. Data were statistically analyzed using an ANOVA to determine the main
effects of tutoring, grade level, and the interaction effect of tutoring and grade level on
gains in word writing.

The dependent variables, or outcomes, were the gain scores for fluency, accuracy
and complexity, as determined from the Word Writing CAFÉ assessment instrument. The
independent variables were the two groups, tutored and not tutored, and the grade level.
Quantitative findings indicated there was no statistically significant effect for the
dependent variables of fluency gain and accuracy gain for students tutored or not tutored.
There was a significant effect for grade level. For the dependent variable complexity
gain, there was a significant effect for tutor group, but not a significant effect by grade
level. None of the dependent variables were affected by the interaction of tutor group and
grade level.

Although these findings do not show the influence of the tutoring treatment, it
may not mean that the treatment was ineffective. Consideration may be given to the
selection of students for the one-on-one tutoring intervention. Randomized assignment of
students to a treatment and control group was a study limitation. Instead, students
identified as most at-risk for literacy failure were assigned to the treatment group.
Findings show that these low-performance students made similar gains to the control
group. The results of the treatment may be interpreted as successful since the at-risk
students maintained the same gains in word writing as their peers.

Recommendations for one-on-one tutoring in a university-school program include
further research on the duration of the tutoring program and enhancement of the word
writing assessment. Instructional components of the intervention lessons include more
specific word writing activities integrated into the reading and writing plans for
remediation. Suggestions for the activity plans during the tutoring sessions include fluency writing, word work, personal dictionaries especially for older students, frequent checks of word writing abilities using a modified Word Writing CAFÉ, and tutor record keeping of student writing vocabularies.

One-on-one tutoring in a university-school program impacts both the university tutors and the struggling students in school. University tutors enrolled in an early childhood teacher education program learn how to assess and remediate reading and writing difficulties of struggling students with the support of university faculty and school personnel. School students receive individualized instruction tailored to their needs in reading and writing. It is the recommendation that further studies with a larger sample size and randomized assignment of students to control and treatment groups take place to inform research on one-on-one tutoring in university-school partnerships as a viable, effective literacy intervention.
References


The Ohio State University. *Literacy Collaborative at the Ohio State University*. Retrieved from http://www.lcosu.com


Appendices
Appendix A

Administration Directions for the Word Writing CAFÉ
Administration Directions for the Word Writing CAFÉ

1. Give children the special paper with word boxes or lines and a pencil. Before giving the word writing assessment, cover all words written in the classroom, including word walls.

2. Explain the following instructions to the students. Say to the students what is written in italics:

- *First, write your name, date, grade, and teacher at the top.* (You may do some or all of this for your students if you choose.)

- *Now listen carefully to the following directions: I want to see how many words you can write in 15 minutes.*

- *Put only one word in each box or line.*

- *Do not write the same words over and over.*

- *If you want to write a sentence, place each word in a separate box or line and write from left to right.* (Demonstrate this on the board.)

- *Do not use names or a list of names of people. Only use a name if it is part of a sentence.*

- *You may want to use some of the following categories of words to write.*

Teachers must decide which prompts to use and then use the same prompts with each time of evaluation. Choose from the following:

- *Write things you like to do.*

- *Write things you see, hear or listen to.*

- *Write things in your house and in your bedroom.*

- *Write things in the classroom and on the playground.*
- Write things you ride on or in.
- Write things you eat.
- Write things you play with.
- Write things you wear.
- Write games you play.

- You may want to write sentences or stories. Teachers must decide which prompts to use and then use the same prompts with each time of evaluation.

Choose from the following:

- Write sentences or stories about a favorite hobby.
- Write sentences or stories about the funniest thing to ever happen to you.
- Write sentences or stories about the best present you ever received.

3. Ask: Are there any questions? (Answer any questions before beginning to time the 15 minutes.)

4. Say: I will tell you when there are only 5 minutes left. Please begin now. (Write the time begun on the board. Give the class a 5-minute notice to complete all writing.)

5. Collect papers after 15 minutes.
Appendix B

Scoring Directions for the Word Writing CAFÉ
Scoring Directions for the Word Writing CAFÉ

The following guidelines will help you score the word writing assessment. Record your information using the coding sheet (refer to Appendix C).

1. For each child’s writing, count the total number of words, correct or incorrect, written in boxes or lines. Enter this number. Do not count words that are illegible. The following rules apply:
   a. COUNT WORDS ONCE: NO DUPLICATES.
   b. Each abbreviation counts as one word with one syllable: Mr., Mrs., Ms. are each one word. If the abbreviation has two parts separated by a space, like “250 RX”, then it is one word, but with two syllables: one syllable for 250 and a second syllable for RX.
   c. Names, such as Ms. Lee, count as one word if they are in the same box or line. If names are in separate boxes or lines, then they count as two words.
   d. If two words are written together in one box or line, such as “base ball,” count them as one word. If the student puts the words in two different boxes or lines, then count them as two words.
   e. Hyphenated words in one box count as one word.
   f. Numbers written as 1,2,3,22,33,100, etc. count as one word only.
   g. If little words are put together in one box or line, such as “I liktoplagams,” count the whole grouping as one incorrect word. If multiple words are in one box and spaced and spelled correctly, only count the first word correct.

2. Circle, count, and enter all correctly spelled words. Use the dictionary if in doubt.
a. All proper nouns must be capitalized to be counted correct.

b. If handwriting is illegible, count it wrong.

c. If a word is written in singular form (cat) in one box, then written in plural form (cats) in another box, both are counted correct if spelled correctly.

3. Mark above each spelled word the number of syllables. Follow these guidelines:

a. Names with more than one syllable that are spelled correctly receive credit for the correct number of syllables.

b. Each abbreviation counts as one syllable: Mr., Mrs., Ms. are one syllable.

   If the abbreviation has two parts like “250 RX”, then it is still one word, but with two syllables.

c. Names, such as Ms. Lee, written in one box, count as two syllables. If they are in separate boxes, then they count as two words, each with one syllable.

d. If two words are written together in one box, such as “base ball,” count them with multiple syllables.

e. Hyphenated words in one box count as one word, but with two or more syllables.

f. Each numeral in a number counts as one syllable up to a maximum of 4.

   Example: 1= 1 syllable; 22 = 2 syllables; 100 = 3 syllables.

4. Count and enter the number of correct words with 1, 2, 3, 4 or more syllables in the appropriate coding sheet box (refer to Appendix C).

5. Repeat the evaluation process after writing projects have been completed.
Appendix C

Coding Sheet for Recording Number of Words and Syllables Written
Coding Sheet for Recording Number of Words and Syllables Written

<table>
<thead>
<tr>
<th>Students Identification</th>
<th>Total Words</th>
<th>Words Correct</th>
<th># of 1 syl</th>
<th># of 2 syl</th>
<th># of 3 syl</th>
<th># of 4 syl</th>
<th># of 5 syl</th>
<th># of 6 syl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>