

GOTTSHALL EARLY READING INTERVENTION: A PHONICS BASED APPROACH  
TO ENHANCE THE ACHIEVEMENT OF LOW PERFORMING,  
RURAL, FIRST GRADE BOYS

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Learning to read is critical for quality of life and success in our society. Children who cannot read well face unsuccessful educational careers and limited job choices. Recently, policy makers and educators have made progress toward increasing the reading achievement of America's children. Still up to 60% of boys who live in poverty cannot read or read two years below grade level.

In this experimental study, I designed and examined the effects of the Gottshall Early Reading Intervention (GERI) to determine if direct instruction with a small group, phonics based approach would increase the literacy achievement of low performing, rural, first grade boys. Participants were selected according to Texas Primary Reading Inventory (TPRI) scores, matched them across race, ethnicity, and socio-economic status, and randomly assigned them to experimental/control group. Three times per week for 15 weeks, boys in the experimental group attended 30-minute pullout sessions taught by trained professionals in addition to classroom reading instruction. Control group members received classroom reading instruction only.

Findings reveal no significant differences in reading gains across all variables. However, descriptive data indicate higher percentages of gains for the experimental group on four out of five reading components with rate of gain higher on fifth. Statistics also show that Hispanics are more likely to benefit.

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# CHAPTER I

## INTRODUCTION

### Background

Learning to read is an essential foundation for success in our society (Kauerz, 2002; Lyon & Chhabra, 2004; Snow, Burns, & Griffin, 1998). “The importance of success in reading for lifelong achievement must not be underestimated; how well a child learns to read may determine future opportunities, including the basic activities of daily life” (McCardle & Chhabra, 2004, p.3). Consequently, reading proficiency is significantly related to quality of life and health outcomes (Shapiro, 2000). Citizens who cannot read well face imperiled educational careers and diminished livelihoods because they lack the understanding to meet the demands of an increasingly competitive society. Being literate is highly regarded and even crucial for social and economic advancement in today’s world (Snow et al., 1998).

From the parent and the practitioner to the politician and the President, Americans, including researchers, are seriously concerned about our nation's children learning to read and write (Snow et al., 1998).

Without a doubt, the most important thing a school can do is to teach children how to read. All the rest of education depends upon the student’s ability to read, beginning with simple stories in the early years and culminating in complex texts such as *Moby Dick* and the Constitution. Even mathematics often involves the student in complicated word problems that require the ability to read. Beyond formal schooling, most careers nowadays demand a high degree of literacy. For people to be active and informed citizens, they have to be able to read and

understand important issues as they appear in newspapers and political journals. To say that reading is the *sine qua non* of education is simply to state the obvious. (Moore, 2004, p. 2)

Literacy acquisition has been the most critical curriculum issue in American education for many decades (Sweet, 2004). In 1955, Rudolf Flesch startled the nation into an awareness that all children were not learning to read in his highly controversial best-seller, *Why Johnny Can't Read and What You Can Do About It* (Flesch, 1955; Sweet, 2004). In the same decade, Russia's success with Sputnik further fueled America's focus on our children's academic excellence in reading as well as science (Lynch-Brown & Tomlinson, 2005). Almost 30 years later, Flesch published *Why Johnny Still Can't Read* (1981) and helped spark the beginning of "the reading wars" of the late eighties and nineties about how best to teach young children to read. Now, on entering the Information Age, our nation is concerned more than ever about getting all children off to a good start in reading (Morris & Slavin, 2003).

### *The Awareness*

"Literacy is the key to academic success. However, schools have historically had difficulty teaching a sizeable minority of children to read" (Morris & Slavin, 2003, p.vii). The goal of successfully teaching all children to read remains an educational enigma (Lyon & Chhabra, 2004). The National Assessment of Educational Progress (NAEP) began tracking reading achievement in 1971, and since then, scores for 9-year-olds (youngest tested by NAEP) have basically remained static (Campbell, Hombo, & Mazzeo, 2000). According to 1998 NAEP scores, 27% of Caucasian students scored below the "basic" reading level. Minority students fared much worse, with some

populations having more than 60% below “basic” (Morris & Slavin, 2003). More recent reports from NAEP confirm that 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> grade students score abysmally low, particularly disadvantaged students (National Center for Education Statistics [NCES], 2003).

Data from the Prospects study in 1997 support these disturbing figures, especially for disadvantaged or poor populations. Prospects’ national sample showed a mean weighted reading comprehension score for students in the fall semester of first grade at the 50<sup>th</sup> percentile. However, for students in schools with more than 75% of the children receiving free or reduced-price lunches (a measure of high poverty), the mean score was at approximately the 44<sup>th</sup> percentile (National Reading Council [NRC], 2000). “In many regards, this finding replicates those from the Coleman report (Coleman, 1966) of 30 years earlier, which highlighted the achievement gap related to low incomes” (Snow et al., 1998, p.98).

### *The Response*

Recognizing the need for reading improvement, researchers, pedagogists, and other decision-makers have made extensive efforts to determine the causes of reading difficulties and to improve instruction with the hopes of increasing students’ achievement (Coyne, Zipoli, & Ruby, 2006). “The knowledge base on beginning reading is so extensive that Stanovich (1999) said we know more about reading disabilities than all other learning difficulties combined” (p.161). According to public databases, approximately 100,000 research studies on reading have been published since 1966, with perhaps another 15,000 before then (National Reading Panel [NRP], 2000).

In 1997, through the National Institute of Child Health and Human Development (NICHD) and the U.S. Department of Education, Congress convened the 14-member National Reading Panel (NRP) “to assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read” (NRP, 2000). In 1998, The National Research Council (NRC), in a nation-wide effort to determine the most effective instructional practices for teaching young children to read, published *Preventing Reading Difficulties in Young Children*, a synthesis of clear recommendations for early reading practices based on expertise of psychologists, neurobiologists, and educators (Snow et al., 1998). The National Reading Panel expanded the Council’s foundational work “to determine the effectiveness of reading instructional methods and approaches” and reported to Congress in February 1999 (NRP, 2000). As a result of these findings, Congress legislated a plan for improving national reading scores: The No Child Left Behind Act (NCLB) of 2001. The NCLB appropriated over \$140 billion for reading improvement and mandated specific guidelines for reading research, instruction, and accountability (McCardle & Chhabra, 2004).

Because of these extensive efforts, overall reading achievement has improved (Allington, 2006). “For instance, in the most recent international comparisons of children’s reading achievement, U.S. fourth graders were ranked ninth in the world. U.S. ninth graders ranked right in the middle, at the international average” (p. 3). Despite these successes, however, a significant number of American children in particular populations are not learning to read (NCES, 2000). The number of students unable to

read at grade level in the target areas, including rural boys, is now more than 50% and in some groups as high as 66% (Grigg, Daane, Jinn, & Campbell, 2003).

## Statement of the Problem

### *The Critical Issue*

The problem remains: Our country has boys in poverty who cannot read (NCES, 2000; Shapiro, 2000; Snow et al., 1998). The concentration of struggling male readers in poor rural areas is worrisome. Not only is the difference in reading scores evident in 1st grade, but children living in high-poverty areas also tend to fall further behind by the spring of 3rd grade as the achievement gap widens (Snow et al, 1998). “The educational careers of 25-40% of American children are imperiled because they do not read well enough, quickly enough, or easily enough to ensure comprehension in their content courses in middle and secondary school” (Snow et al., 1998, p.98). Reading disabilities account for the overwhelming majority of students identified as having learning disabilities and receiving special education services (Pasternack, 2004).

In addition to rural poverty, disaggregated data further indicate that gender is a significant factor in predicting reading success or failure (Carroll, 2004): According to the National Center for Education Statistics (2000), boys tended to demonstrate lower achievement than girls. At ages of 9, 13, and 17, “females outscored males in reading performance across all age groups” (NCES, 2000). Boys are consistently more often identified with reading problems than girls, (Carroll, 2004; NICHD, 2002; Shaywitz & Shaywitz, 1999). A recent study into reading disabilities published in the *Journal of the American Medical Association* confirms that

Boys are much more prone to having trouble than girls, and it's not simply because they are more disruptive. Boys are at least twice as likely to have a learning disability that involves trouble with reading. About 20 percent of the boys had reading disabilities compared with about 11 percent of the girls. Clearly, there are a higher percentage of reading-disabled males, which is consistent with most earlier studies. As reading disability in childhood is associated with adjustment problems in later life, there is a definite need to recognize sex differences. (Carroll, 2004, p.1)

### *The Consequences*

"If you can't read, you're dead!" (Shuman, 1976, p. 219). A frustrated teenage boy made this disturbing statement in the mid-1970s (Shuman, 1976). Unfortunately, today, more than three decades later, too many children in America still experience the same unfair and unnecessary tragedy (Lyon & Chhabra, 2004). "I see far too frequently the terrible consequences of reading failure for the emotional, educational, and occupational outcomes of individuals who struggle to decipher and comprehend print" (Pasternack, 2004, p. xxvii). "This situation is especially distressing because we now know that the majority of students can learn to read..." (Lyon & Chhabra, 2004, p.13). Even with that knowledge, the problem remains: Children in the United States are not learning to read at shockingly and unacceptable rates (McCardle & Chhabra, 2004).

Dr. G. Reid Lyon of the National Institute of Child Health and Human Development (NICHD), in his testimony before the Senate Committee on Labor and Human Resources, further illustrates the magnitude of the problem with statistics from the organization's research: "For 60% of the nation's children...learning to read is a

much more formidable challenge, and for at least 20%-30% of these youngsters, reading is one of the most difficult tasks they will have to master throughout their schooling” (as cited in McCardle & Chhabra, 2004, p. 453-454). According to Lyon, illiteracy has far-reaching effects outside the school career.

The psychological, social, and economic consequences of reading failure are legion. It is for this reason that the National Institute of Child Health and Human Development considers reading failure to reflect not only an educational problem, but a significant public health problem as well. Framing the problem as a public health issue has effectively heightened its status on policy makers’ agendas by making low reading achievement seem even more compelling to policy makers, if not outright alarming (p. 454).

How well children acquire critical literacy skills is known to be a strong predictor of future academic success and has long-term social and economic implications for families and societies (Snow et al., 1998). The International Reading Association (IRA) and the National Association for the Education of Young Children (NAEYC) jointly agree on a position statement: “One of the best predictors of whether a child will function competently in school and go on to contribute actively in our increasingly literate society is the level to which the child progresses in reading and writing” (IRA/NAEYC, 1998, p.30).

Some far-reaching consequences of being a non-reader in our society are startling. One serious consequence of a school career with persistent reading difficulty is that students become discouraged and drop out of school. A Texas school’s dropout rate mirrored the percentage of ninth graders who were reading below the 25<sup>th</sup>

percentile. Unable to secure and maintain employment, these dropouts often turn to crime and end up in prison, creating the “school to prison pipeline”. In 1997, 68% of Massachusetts’ prisoners had not completed high school mostly because of poor reading ability (Cooter & Cooter, 2004). State planners in Ohio, learning of the correlation between slow learners and reading failure in U.S. schools, project how many prison beds will be needed in the future on the basis of how many children are reading below level in 3rd grade; “The connection between reading failure for slow learners and potential consequences is both clear and frightening.” (p. 681)

### *The Solution*

“Advances in our understanding of how children learn to read have been significant in understanding reading disabilities” (Fletcher, 2005, p.5). With these understandings in mind, this intervention’s author specifically designed the *Gottshall Early Reading Intervention (GERI)* to teach young boys to read, particularly those living in poverty. Therefore, the experimenter’s goals included gaining research-based knowledge, further determining best practices, and contributing to the prevention of life-long consequences of illiteracy. Previous inquiries support the belief that reading intervention should happen in the early years (International Reading Association, 2005) as does this research. More boys in poverty areas have reading difficulties than in high socio-economic (SES) areas (Stormont, et al., 2003). The *Gottshall* study’s participants included public school 1st grade boys in a low socio-economic rural setting.

Researchers have conducted thousands of reading studies (NRP, 2000), but too few are aimed directly at finding best practices for one of the most vulnerable school populations, young boys in poverty (Carroll, 2004). The *Gottshall* project has potential to



make a significant contribution to the reading research knowledge base in this limited area of study.

## Purpose of the Study

### *Research Question*

The purpose of this investigation was to determine if the original *Gottshall Early Reading Intervention (GERI)* improved the reading achievement of low performing, first grade boys in a rural setting. The intervention involved an intensive, explicitly scripted, phonics-based, direct instruction model. I investigated five reading components with the following quantitative research question:

1. To what extent does the *Gottshall Early Reading Intervention (GERI)* increase the mean reading achievement of low performing, rural, first grade boys?

### *Hypotheses*

I answered the question with the following hypotheses:

H<sub>01</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in phonemic awareness between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

H<sub>02</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in graphophonemic knowledge between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

- H<sub>03</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading accuracy between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>04</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading fluency between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>05</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading comprehension between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

### Significance of the Study

"If a child has not yet learned to read, then it is because we have not yet found the correct way to teach him" (Clay, 1993). This study's primary significance was to address the challenge Clay made by analyzing whether or not the *Gottshall Early Reading Intervention* is the best way to teach young boys to read. Has the author developed a unique reading intervention that successfully improves the literacy achievement of rural first grade boys, one of our nation's populations most at risk for reading failure? Our responsibility as educators and researchers is to discover the most successful way to teach boys to read in the early years. "Research evidence is essential for identifying effective educational practice. Responsible decisions about what is good

for students require scientific evidence” (Reyna, as cited in McCardle & Chhabra, 2004, p. 47). Teachers and parents need the information provided in this study and similar inquiries to best meet these struggling readers’ challenge.

The *Gottshall* inquiry is also significant because the research methods exemplify Scientifically Based Reading Research (SBRR). The National Reading Panel (2000) states that

To make a determination that any instructional practice could be or should be adopted widely to improve reading achievement requires that the belief, assumption, or claim supporting the practice be causally linked to a particular outcome. The highest standard of evidence for such a claim is the experimental study, in which it is shown that treatment can make such changes and affect such outcomes. (p. 4)

Early reading success is a predictor of later school achievement (Snow et al., 1998), and school achievement is directly related to quality of life in our society (Carroll, 2004). Therefore, studies to develop effective reading interventions like the *Gottshall* method for low achieving first grade boys are particularly important and have potential for increasing the knowledge base of the scientific education research community.

## Definition of Terms

### *Assessment*

For the purpose of assessment in this study, the following operational definitions of phonological awareness, graphophonemic knowledge, reading accuracy, fluency,

and comprehension, as defined by the *Texas Primary Reading Inventory* (TEA, 2006), were used:

*Phonemic awareness.* The ability to achieve Developed (D) level as defined by the Texas Primary Reading Inventory (TPRI). The TPRI defines Developed (D) level as 80% accuracy (4 out of 5 correct) on all Phonological Awareness tasks, Tasks 1-4.

*Graphophonemic knowledge.* The ability to achieve Developed (D) level as defined by the Texas Primary Reading Inventory (TPRI). The TPRI defines Developed (D) level as 80% accuracy (4 out of 5 correct) on all five Graphophonemic Knowledge tasks, Tasks 5-9.

*Reading accuracy.* The ability to achieve Developed (D) level in oral text reading as defined by the Texas Primary Reading Inventory (TPRI). The TPRI defines Developed (D) in oral text reading as 90-94% accuracy (Instructional level [INS]) on a minimum text difficulty of Grade 1, Story 1 (G1 S1) Beginning of Year (BOY) and Grade 1, Story 5 (G1 S5) Ending of Year (EOY).

*Fluency.* The ability to achieve Developed (D) level as defined by the Texas Primary Reading Inventory (TPRI). The TPRI defines Developed (D) level as a text reading rate at 40 Word Count per Minute (WCPM) on minimum text difficulty of Grade 1, Story 1 (G1 S1), Beginning of Year (BOY) and 60 WCPM, on minimum text difficulty of Grade 1, Story 5 (G1 S5), Ending of Year (EOY).

*Comprehension.* The ability to achieve Developed (D) status as defined by the Texas Primary Reading Inventory (TPRI). The TPRI defines Developed (D) level as 75% accuracy (6 out of 8 correct) on the comprehension questions at a minimum text

reading difficulty of Grade 1, Story 1 (G1 S1), Beginning of Year and Grade 1, Story 5 (G1 S5), End of Year.

### *Instruction*

For the purpose of instruction and discussion, the following operational definitions of phonological awareness, graphophonemic knowledge, reading accuracy, fluency, and comprehension, as defined by the National Reading Panel, (NRP, 2000) were used:

*Phonemic awareness.* The ability to hear, identify, and manipulate individual sounds, called phonemes, in spoken words (NRP, 2000).

*Graphophonemic knowledge/phonics/alphabetic principle.* The understanding that there is a predictable relationship between phonemes and graphemes, the letters and spellings that represent those sounds in written language (NRP, 2000).

*Reading accuracy.* The ability to read text accurately (95-100%), thereby providing a bridge between word recognition and comprehension (NRP, 2000).

*Fluency (WCPM)/Reading fluency, including oral reading skills.* The ability to read text quickly (first grade = 60 wcpm), thereby providing a bridge between word recognition and comprehension (NRP, 2000).

*Comprehension/Reading comprehension strategies.* The ability to understand, remember and communicate with others about what has been read (NRP, 2000).

### Summary

“Reading is a crucial skill for academic and occupational success” (Shapiro,

2000, Introduction section ¶ 1). “If you do not learn to read and you live in America, you do not make it in life” (McCardle & Chhabra, 2004, p.454). “Despite concentrated efforts across multiple disciplines, still too many of our nation’s children are not learning to read” (Coyne, Zipoli, & Ruby, 2006, p.161). Young boys in poverty are especially at risk of failure in literacy acquisition (Coyne et al., 2006). Educators, researchers, and policy makers share the responsibility to protect these children from failure and solve the dilemma now: What is the best way to teach young boys to read? Based on scholarly research methods and targeting rural 1st grade boys with scientifically based practices, the *Gottshall Early Reading Intervention (GERI)* shows worth as a viable solution.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

"Teaching all children to read requires that every child receive excellent reading instruction, and that children who are struggling with reading receive additional instruction..." (International Reading Association, 2000, p. 31). Research in recent years has begun to identify ways to prevent and remediate reading problems; "Recent research is identifying effective, practical, and replicable means of ensuring the reading success of almost all children" (Morris & Slavin, 2003).

From the literature, four questions emerge as critical topics regarding successful reading interventions for those students not learning to read:

- When to intervene
- What to teach
- How to teach
- Who is most vulnerable for reading difficulty

The *Gottshall* study considers converging evidence on these important issues.

#### Early Reading Intervention

Learning to read is a lifelong process; however, the early childhood years serve as an important foundation for subsequent literacy development (Neuman & Dickinson, 2003). Children who learn to read well at an early age will become better readers. Conversely, those readers who struggle in the early years seem to get worse and fall further behind (Stanovich, 1986).

Although some children have difficulty learning to read, a consensus is growing among experts that many reading problems can be prevented or at least minimized if intervention occurs in the early years (Elliott, Lee, & Tollefson, 2001; Good, Simmons, & Kameenui, 2001). “Effective interventions can and should be made early on a small-group basis for children with established risk” (Shapiro, 2000, Summary section, ¶ 2). Dr. Bennett Shaywitz, M.D., of the Yale University School of Medicine, reports that young children who read poorly and do not receive any help will eventually learn to read but will never do so with the same fluency as do good readers (NICHD, 2002). Allington (2004) states that

We have learned that for 90-95% of poor readers, prevention and early intervention programs that combine instruction in phonemic awareness, phonics, fluency development, and reading comprehension strategies provided by well-trained teachers, can increase reading skills to average reading levels. (p.22)

Other researchers clearly underscore the importance of this “window of opportunity” for improving children’s adjustment to literacy acquisition (Stormont, Espinosa, Knipping, & McCathren, 2003). For example, Dr. Marie Clay, noted New Zealand psychologist and reading researcher, also advocates intervening for reading problems in the beginning of first grade while the achievement gap is smallest as opposed to waiting until children fall further behind (Morris & Slavin, 2003).

### Phonics

In addition to early implementation, most of the recent reading research also advocates systematic phonics instruction as a critical element in successful literacy



interventions (Liben & Liben, 2004). Systematic phonics is the sequenced introduction of sound-symbol relationships, structured review and assessment, and in some cases, controlled readers. There is an increasing body of research which indicates that children at risk for reading failure can be successful in a reading program that includes intensive, comprehensive, explicit instruction in phonemic awareness, alphabetic principle, word identification, and comprehension (Chard & Dickson, 1999). The National Reading Panel identifies phonics as one of the five strongest predictors of early reading success (NRP, 2000).

### *The Debate*

Throughout the decades though, researchers and educators have not always agreed on how much direct phonics instruction is essential for teaching children to read; the debate has primarily focused on the whole language/meaning first (literature based) or the phonics (letter-sound) methods. In 1983, Jeanne Chall, (1987) whose research spans over 80 years, stated that the question can be traced to the 1920's as to whether children's original dictated stories or reading primers were the most effective text for early reading instruction. From the 30's and through the 1940's and 1950's, phonics instruction was not implemented in most American schools (Levine, 1994). Then in 1955, Rudolf Flesch convinced the public that children were not learning to read in *Why Johnny Can't Read* and instigated a wave of significant studies concluding that intensive phonics instruction worked better than the "look-say" method (sight word approach) in practice at that time. "By the early 1970's, most schools had returned to an essentially phonics-based program" (Werner, 2005, p. 21).

However, teachers and scholars criticized these methods for robbing children's joy and interest in reading. This movement led to the popularity of the whole-language approach of the 1980s and 1990s (Werner, 2000). More recent scientifically based reading research has re-directed focus toward systematic phonics-based instruction as the most effective method for teaching children to read, especially those students most at risk for reading failure (Fletcher, 2005; Liben & Liben, 2004; NRP, 2000).

### *The Consensus*

Although educators and researchers have disagreed across decades on exactly what proportion of phonics and literacy-based instruction is most effective for teaching children to read in America's classrooms, there appears to be a growing consensus among practitioners and scholars that within any literacy program, a child's ability to unlock the alphabetic principle (phonics) is crucial to successful reading (Morris & Slavin, 2003; NRP 2000; Pressley, 2006a; Snow, Burns, & Griffin, 1998). The late professor of educational psychology and teacher education at Notre Dame, Dr. Michael Pressley, and colleagues spent several years studying effective schools (some with 95-98% achievement on 4<sup>th</sup> grade reading test) and noted these findings about their reading programs: "At the center of the curriculum is a lot of reading, with students experiencing many books.... in support of such reading is much teaching of reading skills, including letter-sound, phonics, word-recognition, and spelling skills" (Pressley, 2006b, p. 4). In a recent survey of elementary school teachers in the United States, researchers found that "99% of teachers in grades K-2 reported that they viewed teaching phonics in their classrooms as being essential or important" (Duffy et al., 2003, p. 684). Presenting at a seminar in 2004 for Texas university faculty in teacher

education, Dr. Timothy Shanahan reports that the NRP's meta-analysis of reading research reveals that systematic phonics does help students in kindergarten through second grades, especially students with reading disabilities (Shanahan, 2005).

While learning the alphabetic principle is a crucial step for all readers, the importance of intensive, systematic phonics instruction for children who have difficulty learning to read cannot be emphasized enough. Brain researchers Shaywitz and Shaywitz (1999) explain how numerous neurological studies involving magnetic imaging illustrate that reading problems result from physiological differences in brain function resulting in children's inability to recognize and break up phonemes (individual sounds in words). Their work further explains that phonology (sound-symbol relationship) is what frees children from having to memorize every word and allows readers to decode unfamiliar words (1999).

### Direct Instruction

In addition to knowing when to intervene and what to teach for improving reading achievement, another critical issue is determining the best instructional delivery method. Seminal and current reading research literature supports the Direct Instruction approach for effectively teaching children the alphabetic principle, or phonics (Bereiter & Engelmann, 1966; Carnine & Silbert, 1979; Flesch, 1955; Tierney & Readence, 2005). "Direct Instruction procedures are intended to meet the needs of all students, but especially those who are incurring difficulty learning to read" (Tierney & Readence, 2005, p. 36).

“Direct Instruction is a rigorously developed curriculum, methodology, technology, and delivery system that is also a highly scripted method for teaching that is fast-paced and provides constant interaction between students and the teacher” (Werner, 2005, p. 29). In a Direct Instruction reading approach, the teacher is instructed when to teach, what to teach, how to teach, and exactly what to say to the students during the carefully sequenced lessons with detailed teaching objectives based on necessary component skills. For example, in a Direct Instruction model for teaching phonics, the teacher receives a sequence for the order in which letters/sounds are to be introduced; instructions on what procedures will be used to introduce/teach the letters/sounds; and a script to follow for explicitly teaching the letter/sound (Tierney & Readence, 2005).

Carl Bereiter and Siegfried Engelmann pioneered the Direct Instruction approach in the late 1960s as they worked with disadvantaged children in a school associated with the University of Illinois (Bereiter & Engelmann, 1966). The researchers were particularly interested in what impact systematic teaching of academic skills in small groups to economically deprived children could achieve (Werner, 2005). Engelmann and his colleagues developed more than forty curriculum programs over the past twenty-five years using the teacher-directed, scripted, systematic model (Tierney & Readence, 2005). Recently, in 1998, the U.S. Department of Education completed one of the most compelling studies supporting the effectiveness of Direct Instruction, *Project Follow Through* (1968-1977). “The study compared a systematic, comprehensive, phonics-based approach against eight other styles of teaching reading and the results indicated the overwhelming superiority of the Direct Instruction method” (Werner, 2005

p. 31). As discovered by Bereiter & Engelmann (1966) and recently re-established by the Department of Education study (1998), the practice of initial explicit instruction in phonics is useful for all children (Snow, Burns, & Griffin, 1998), but the benefits of this type of instruction are particularly strong for children who begin with weak phonological skills (Torgensen, 2004).

### Boys and Reading

Recent reading research clearly points to boys in answering the question as to what population of children is most in need of reading intervention (Carroll, 2004). According to Reading Highlights reported by the U.S. Department of Education in 2003, “female students scored higher on average than male students at both grades 4 and 8” (NCES, 2003, p.11). For example, in all fifty states, the District of Columbia, and the Department of Defense Schools, higher percentages of boys scored below basic in the 4<sup>th</sup> grade than girls (NCES, 2003). “It has long been observed that groups of children with RD [reading disabilities] tend to have a large proportion of boys” (Share & Silva, 2003, p. 10). Although factors other than gender play affecting roles, the fact remains: many boys are not learning to read well (Carroll, 2004).

### Rural Children

Torgenson reports that

Most children who enter school at risk for difficulties learning to read fall into one of two broad groups. Many children enter school with adequate oral language ability but have weaknesses in the phonological domain. Then in

contrast, many other children, coming largely from families of lower socioeconomic or minority status, enter school with significant delays in a much broader range of pre-reading skills (as cited in McCardle & Chhabra, p. 355).

These students often do not “catch up” and remain at risk for failure as indicated by the Nation’s Report Card in 2003: In the state of Texas alone, 52% of the 4<sup>th</sup> grade students eligible for free and reduced meals (poverty indicator) scored below basic as compared to only 28% failure rate for non-eligible peers (NCES, 2003). Most other states showed similar discrepancies (2003).

On entering school, most children from low socioeconomic backgrounds experience a gap in vocabulary and background knowledge that undermines reading achievement (Moats, 2004). If these children do not receive adequate instruction to acquire basic reading skills, they will fall further behind in literacy acquisition (2004). Fortunately, these disadvantaged children can be taught to read and write well with an effective intervention that includes a structured and comprehensive program (Moats, 2004; Snow, Burns, & Griffin, 1998).

### Summary

What are the critical issues for improving reading achievement in America’s schools today? The converging evidence overwhelmingly supports small group, early interventions using a direct instruction, phonics-based approach that targets boys in poverty. The *Gottshall Early Reading Intervention* includes all these elements for enhancing the achievement of rural first grade boys.

CHAPTER III  
METHODOLOGY

Participants

Participants in the study included 16 volunteer first grade teachers (teacher group) and 64 randomly selected identified low performing first grade male students (student group) in a rural Texas school district, Nacogdoches Independent School District (NISD). At the time of the study, NISD's student population included 6,485 students: 0.14% Native American, 1.08% Asian, 30.18% Black, 37.05% Hispanic, and 31.55% White.

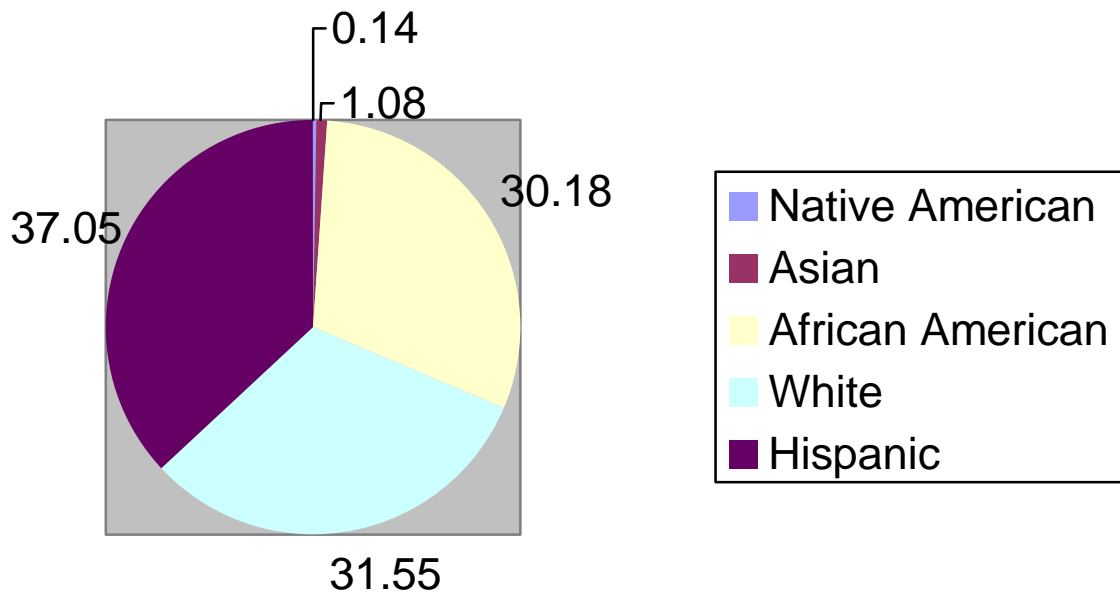


Figure 1. Demographic data for Nacogdoches Independent School District.

The district qualifies for Title I status and participates in the Reading First Initiative as of September 2005. Title I designation indicates that the district receives

additional education funds from the federal government by qualifying as a low socio-economic district with 50% of the students qualifying for free or reduced meals. A district must have at 40% or more of their students participating in the free or reduced meal program to be classified as a Title I school. The Reading First Initiative is a component of the No Child Left Behind Act (2002) and requires schools to demonstrate that federal dollars are benefiting struggling readers in high-poverty areas (Allington, 2006). One requirement of Reading First is implementation of a reading curriculum recognized as scientifically based (NCLB, 2001). All elementary schools had implemented the phonics-based, scripted Scott Foresman reading program beginning Fall 2005 (Addison-Wesley, 2000).

#### *Teacher Group Identification*

I invited all seven elementary schools in the Nacogdoches Independent School to participate in this study. One school declined because no students met the criteria for participation. I eliminated a second school because only one student qualified as a participant. No instructional groups could be created on those campuses, as minimum group number was three students.

From the five remaining schools, all first grade teachers volunteered to participate; therefore, all first grade teachers from those five schools who had qualifying students in their classes became potential participants. Teachers became participants if there were low performing boys in their classes. Number of student participants from each class depended on 1) number of low performing boys in each class, 2) random selection, and 3) parent permission to participate. The teacher group included 16 teachers.



### *Student Group Identification*

Research participants in the student group included 1st grade boys identified as performing below grade level in reading achievement according to scores on the Beginning of Year (BOY) Texas Primary Reading Inventory (TPRI) (Texas Education Agency [TEA], 2006). To qualify as participants, the students must have scored “Still Developing (SD)” in at least three of the five assessed reading components on the TPRI. The components included phonemic awareness, graphophonemic knowledge, reading accuracy, fluency, and comprehension. Criteria for scoring “Still Developing” according to TPRI are defined in Chapter I of this paper, Definition of Terms.

At the beginning of the study, research participants in the student group included 37 matched pairs ( $n = 74$ ) of first grade boys identified as performing below grade level in reading achievement. Due to attrition and scheduling conflicts, the total number of student participants at the end of the study was 64 ( $n = 64$ ), including 35 boys in the experimental group and 29 boys in the control group.

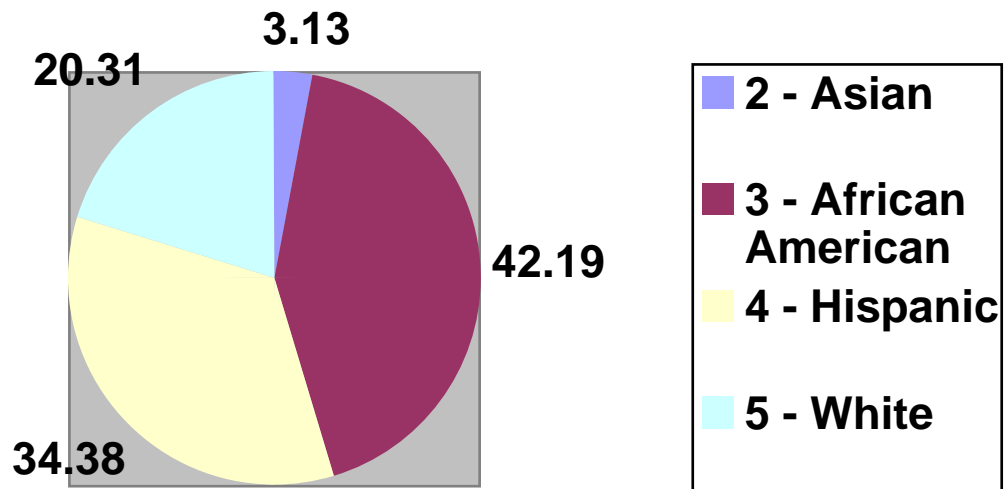


Figure 2. Demographic data for study sample.

#### *Randomization*

I randomly selected identified students through the following process: All first grade boys in each participating school who scored “Still Developing” in at least three out of five assessed reading components on the TPRI comprised the population from which the examiner selected participants for the experimental and control groups. Then, I divided the population into matched pairs according to the following criteria:

- Beginning of Year TPRI scores
- Ethnicity
- Age in months
- Socio-economic status (participation or non-participation in free or reduced meal program)

A non-interested third party randomly selected one name from each pair. I assigned the selected student to the experimental group and the other student to the control group. The examiner notified parents before asking them to sign the Informed Consent Form (Appendix A) that there would be a 50% chance of each student being placed in the experimental group or the control group.

### *Grouping*

Once the experimental group was identified, I formed instructional groups of 3-4 students for each school. The examiner grouped the students based on class schedules and similar instructional needs as indicated by the Beginning of Year (BOY) TPRI scores. Of the five participating schools, one school implemented 3 instructional groups, three schools implemented 2 instructional groups, and one school implemented 1 instructional group for a total of ten 10 groups. Seven highly qualified interventionists delivered the lessons. Three interventionists taught 2 groups each while four taught 1 group each.

Faculty members in the Elementary Education Department at Stephen F. Austin State University, Nacogdoches, Texas, served as interventionists and taught the lessons. The instructors were professionals in teaching young children to read. I conducted one full day of formal training for the interventionists on the *Gottshall* approach. The teachers also received weekly and daily feedback as needed based on my observations using an Integrity Checklist for lesson consistency.

## Research Design

The *Gottshall Early Reading Intervention (GERI)* study was a 15-week

experimental pre-test/post-test control group design with randomization and matched pairs of low performing, rural, first grade boys. A pilot study was conducted prior to data collection. This investigation was designed to determine if the *Gottshall Early Reading Intervention (GERI)* would improve the reading achievement of low performing, rural, first grade boys by answering the following research question:

1. To what extent does the *Gottshall Early Reading Intervention (GERI)* increase the mean reading achievement of rural first grade boys?

#### Instrumentation

I accessed internal data for each participant in the experimental and control groups at the pre- and post- data collection points from scores on the Texas Primary Reading Inventory (TPRI) (TEA, 2006). “The TPRI is an early reading instrument designed to identify the reading and comprehension development of students in kindergarten and Grades 1-2. Early identification of these skills will help support you in providing appropriate reading instruction and ensuring students receive the targeted attention they need” (TEA, 2006, p. iii). The purpose of the first grade TPRI is to assess students’ reading development in phonemic awareness, graphophonemic knowledge, reading accuracy, fluency, and comprehension (2006). According to current reading research, these five components have been identified as strong predictors of early reading success—whether or not a child will learn to read and read well (NRP, 2000). Information gained through TPRI administration can identify those students who will fall at least one-half a year behind and will require intervention (TEA, 2006)).

The TPRI is a criterion-referenced measurement. “With respect to the stories, this means the phonic elements and story grammar elements increase in difficulty across grades 1 and 2, as validated in an empirical study in Texas schools” (Texas Education Agency, 2006, p. 6). The study was conducted in 1999-2000 and included 3,000 students in public schools across Texas (2006).

## Intervention

### *Experimental Group*

The experimental group, or treatment group, received a 15-week series of intensive, direct instruction scripted phonics lessons in addition to regular classroom reading instruction. Every first grade classroom in the school district adhered closely to the scripted, direct instruction Scott Foresman reading curriculum (Addison-Wesley, 2000).

The pull-out sessions occurred outside the classroom reading instructional block and were conducted in a small group format with approximately 3-4 students per group. The experimental group attended three 30-minute sessions per week for 15 weeks or 45 sessions. Seven faculty members in the Department of Elementary Education from Stephen F. Austin State University, Nacogdoches, Texas, delivered instruction during the 45 sessions. Each faculty member had vast experience and training to identify them as “highly qualified” to teach young children to read. The author designed and created the intervention and served as program monitor to enhance the study’s fidelity and to reduce researcher bias. I recorded fidelity ratings on an Integrity Checklist. The

interventionists and I communicated weekly and daily as needed to ensure lesson consistency.

### *Control Group*

The participants in the control group did not receive any reading instruction in addition to the regular classroom reading program. All first grade classrooms in the school district implemented the Scott Foresman reading curriculum for a minimum of 90 minutes per day. The purpose of this study was to examine the effectiveness of the *Gottshall Early Reading Intervention*, not to compare it to classroom instruction or other instructional methods.

### Data Collection Procedures

Data collection occurred in three phases: Phase I (Pre-assessment), Phase II (Intervention), and Phase III (Post-assessment).

#### *Phase I: Pre-assessment*

Accessing internal data, I collected existing scores for all student participants in the experimental and control groups on the Beginning of Year (BOY) Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006) from the school district's records immediately prior to the intervention. The district routinely administers the TPRI within 6 weeks of the fall school start date. "It is generally preferable to gather available data from primary sources—those that initially gather the data..." (Sanders & Smidt, 2000, p.10). Therefore, I used existing data from the school district to generate the student participant selection pool and to assess the boys' reading achievement at pre- and post data points.

### *Phase II: Intervention*

*Lessons.* Research assistants (interventionists) conducted a 15-week series of 45 explicit, scripted phonics lessons in a small group, pullout format of three 3 to 4 student participants from the experimental group. The groups were pulled out during the regular school day but not during the classroom reading instructional block.

The lessons occurred 3 times per week for 15 weeks or 45 lessons. Each lesson contained teaching strategies and learning activities to highlight the five predictive components as determined by the National Reading Panel: phonemic awareness, graphophonemic knowledge (phonics), vocabulary, fluency, and comprehension (NRP, 2000) (Appendix B). The author established lesson sequence by 1) teaching the most frequently used phonemes and corresponding graphemes in the English language first, 2) separating similarly sounding phonemes by several lessons, 3) presenting graphemes with similar forms for upper and lower case simultaneously, and 4) presenting graphemes with differing forms for upper and lower case separately (Bursuck & Damer, 2007) (Appendix C).

*Research Materials.* The research team used the following items to implement the *Gottshall Early Reading Intervention*:

1. Existing Beginning of Year (BOY) and End of Year (EOY) TPRI scores
2. *Gottshall Early Reading Intervention* lessons, materials, supplies  
(Appendix B)
3. *Scott Foresman Reading Street* leveled texts (Pearson, 2006)

### *Phase III: Post-assessment*

The participating school district administers the TPRI at the end of each academic year. The End of Year (EOY) TPRI administration coincided with the end of the 15-week lesson series. For post assessment, I accessed internal data and collected the End of Year (EOY) TPRI scores for all student participants in the experimental and control groups immediately after the intervention.

## Data Analyses

### *Hypotheses*

The statistical tool applied to hypotheses 1, 2, 3, and 5 was the Chi-Square Test of Homogeneity. This statistical tool is appropriate because gain is measured as a categorical value in each variable, and the experimental/control group is a categorical value. The statistical tool applied to hypothesis 4 was the Two-sample *t*-test. This tool is appropriate because gain is measured as a continuous variable (word count per minute) and the experimental/control group is a categorical value at two levels.

### *Demographic Data*

The statistical tool applied to the question of whether or not demographic data (age, ethnicity, or socioeconomic status) affected participant outcomes was the Chi-Square Test of Homogeneity. This tool is appropriate in all cases because all variables were categorical and the experimental/control group is a categorical value at two levels.

When testing to determine if the student group (experimental or control) or the age of a student (one of seven categories) impacted overall performance, I applied Nominal Logistic Regression. This statistical tool is appropriate because age is



measured as a categorical value, the experimental/control group is a categorical value, and the response variable is dichotomous (Unsatisfactory or Satisfactory) (Appendix D).

### *Overall Achievement*

The statistical tool applied to compare rates of going from Unsatisfactory to Satisfactory (Appendix D) from Beginning of Year to End of Year was the Chi-Square Test of Homogeneity. This tool is appropriate because Age is measured as a categorical value (either 2, 3, 4, 5, 6, or 7) and the experimental/control group is a categorical value.

### *Validity*

The combination of random assignment, the establishment of a control group, and the use of a pre- and post assessment serve to eliminate the majority of threats to both the internal and external validity of the study.

## Summary

Based on assessed need and converging scientific evidence, I designed and tested a Tier III reading intervention, the *Gottshall Early Reading Intervention (GERI)*. Tier III programs target students whose performance is below grade level after participation in whole group and small group classroom reading instruction (Texas Education Agency, 2003). The phonics based approach, *GERI*, targeted low performing 1st grade boys in rural, low-income schools. The intervention included forty-five 30-minute scripted lessons highlighting the five predictive reading components identified by the National Reading Panel (NRP, 2000).

I conducted a pre-test/posttest, control group design to test the intervention's effectiveness for improving the boys' reading achievement. Five public elementary schools, including 16 first grade teachers and 64 first grade boys participated in the 15-week study in the Nacogdoches, Texas, Independent School District. Seven interventionists implemented the lessons while I served as program monitor.

## CHAPTER IV

### RESULTS

#### Research Question

The *Gottshall Early Reading Intervention (GERI)* involved an intensive, explicitly scripted, phonics-based, direct instruction model. I investigated five reading components with the following quantitative research question:

1. To what extent did the *Gottshall Early Reading Intervention (GERI)* increase the mean reading achievement of low performing, rural, first grade boys?

#### Hypotheses

I answered the question with the following hypotheses:

- H<sub>01</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in phonemic awareness between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>02</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in graphophonemic knowledge between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>03</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading accuracy between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

H<sub>04</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading fluency between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

H<sub>05</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading comprehension between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

### Demographic Data

#### *Age in Months*

I also examined the intervention's effects across demographic data including Age in Months, Ethnicity, and Socioeconomic Status. The participants' ages ranged from 71 months to 98 months. The examiner categorized the participants into age groups according to the following scale:

1 = 71-74 months

2 = 75-78 months

3 = 79-82 months

4 = 83-86 months

5 = 87-90 months

6 = 91-94 months

7 = 95-98 months

### *Ethnicity*

Ethnic groups represented in the study sample included Asian, Black, Hispanic, and White. The study sample did not include Alaskan/Native American. Public school records indicated ethnic group classification for each participant. The code for identifying Ethnicity is listed below:

1 = Alaskan/Native American

2 = Asian

3 = Black

4 = Hispanic

5 = White

### *Socioeconomic status*

Participation or non-participation in free or reduced meal program determined socioeconomic status. Public school records indicated membership in each status. The code for identifying Socioeconomic Status is listed below:

0 = Full pay

1 = Free

2 = Reduced

### Overall Achievement

Additionally, I investigated Overall Achievement between the experimental and control groups. The examiner consulted co-author of the 2006 TPRI, Dr. Dennis J.

Ciancio (personal communication, July 22, 2007), and jointly developed criteria to quantify the scores in all sub-tests. Dr. Ciancio is an assistant professor in the Center for Academics and Reading Skills at the University of Texas Health Science Center in Houston, Texas. The resulting point value scale for TPRI data allowed a Beginning of Year and End of Year overall individual rating of Unsatisfactory or Satisfactory. I studied the rate of change from Unsatisfactory (0) to Satisfactory (1) between the experimental and control groups at the pre and post data points (Appendix D).

### Data Analyses

The findings for each hypothesis are discussed separately in the following sections. Each section includes statistical and descriptive analyses.

#### *Hypothesis 1, Phonemic Awareness*

There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in phonemic awareness between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

#### *Statistical analysis.*

Finding: There is no significant difference in the mean reading performance gains in phonemic awareness between the experimental group and the control group. The Chi-Square Test of Homogeneity showed a resulting  $p$ -value of .7853. This statistical tool is appropriate because gain is measured as a categorical value (0, 1, 2, 3, or 4), and the experimental/control group is a categorical value.

Table 1

*Research Hypothesis 1. Phonemic Awareness Gains Comparing Experimental Group to Control Group*

<b>Group</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>% 0-4</b>
<b>C</b>	3	3	11	8	4	13.8
<b>E</b>	3	8	12	7	5	14.3

Note: *P*-value = .7853, No significant difference

*Descriptive analysis.*

Percentages in gains in phonemic awareness from raw data reveal that 0.5% more participants reached Satisfactory rating in the experimental group than in the control group. This finding means that participants in the experimental group had a slightly better chance of progressing from Unsatisfactory at beginning of year to Satisfactory at end of year in phonemic awareness than did participants in the control group.

*Hypothesis 2, Graphophonemic Knowledge*

There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in graphophonemic knowledge between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

*Statistical analysis.*

Finding: There is no significant difference in the mean reading performance gains in graphophonemic knowledge between the experimental group and the control group.

The Chi-Square Test of Homogeneity showed a resulting *p*-value of .7309. This

statistical tool is appropriate because gain is measured as a categorical value (1, 2, 3, 4, or 5), and the experimental/control group is a categorical value.

Table 2

*Research Hypothesis 2. Graphophonemic Knowledge Gains Comparing Experimental Group to Control Group*

<b>Group</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>% 1-5</b>
<b>C</b>	5	7	8	5	4	13.8
<b>E</b>	5	13	8	3	6	17.1

Note: *P*-value = .7309, No significant difference

*Descriptive analysis.*

Percentages in gains from raw data regarding graphophonemic knowledge reveal that 3.3% more participants reached Satisfactory rating in the experimental group than in the control group. This finding means that participants in the experimental group had a slightly better chance of progressing from Unsatisfactory beginning of year to Satisfactory at end of year in graphophonemic knowledge than did participants in the Control Group.

*Hypothesis 3, Reading Accuracy*

There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading accuracy between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).



*Statistical analysis.*

Finding: There is no significant difference in the mean reading performance gains in reading accuracy between the experimental group and the control group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .0650. This statistical tool is appropriate because gain is measured as a categorical value (0, 1, or 2), and the experimental/control group is a categorical value.

This resulting  $p$ -value could be interpreted as reflecting a mild statistical significant difference between the experimental and control group. However, a look at the data indicates that the chance of a gain of 0 or 2 is larger for the experimental group than the control group. On the other hand, a gain of 1 is more probable for the control group.

Thus, the conclusion here is not as simple as that one group is superior to another in terms of its gains. The conclusion is more intricate than that, and in statistical terms, cannot be easily explained. The chi-square test is looking only to see if a difference in rates (not a *uniform* difference in rates) exists between the two groups. Uniform differences are easier to interpret since they imply that one group is superior/inferior to another group. That is not the case here as the trend in percentages alternates between gains of 0, 1, and 2.

Table 3

*Research Hypothesis 3. Reading Accuracy Gains Comparing Experimental Group to Control Group*

<b>Group</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>% 0-2</b>
<b>C</b>	3	11	15	51.7
<b>E</b>	8	5	22	62.9

Note: *P*-value = .0650, No significant difference

*Descriptive analysis.*

Percentages in gains from raw data regarding reading accuracy reveal that 11.2% more participants reached a Satisfactory rating in the experimental group than in the control group. This finding means that subjects in the experimental group had a somewhat better chance of progressing from Unsatisfactory at beginning of year to Satisfactory at end of year in reading accuracy than did participants in the control group.

*Hypothesis 4, Reading Fluency*

There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading fluency between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

*Statistical analysis.*

Finding: There is no significant difference in the mean reading performance gains in reading fluency between the experimental group and the control group. The Two-sample *t*-test resulted in a *p*-value of .8966 (*t*-statistic = 0.131). This statistical tool is appropriate because gain is measured as a continuous variable (word-count per

minute), and the experimental/control group is a categorical value at two levels.

Resulting data is shown below:

Table 4

*Research Hypothesis 4. Reading Fluency (Word-Count per Minute) Gains Comparing Experimental Group to Control Group*

<b>Group</b>	<b>BOY</b>	<b>EOY</b>	<b>Gain</b>
<b>C</b>	12.6	47.7	35.1
<b>E</b>	5.8	40.3	34.5

Note: *P*-value = .8966, No significant difference

*Descriptive analysis.*

Differences in gains from raw data on reading fluency, or word count per minute (WCPM), reveal that the control group gained .06 more words per minute from beginning of year to end of year than did the experimental group. However, the control group average WCPM at the beginning of the year was 12.6 WCPM and the experimental group average WCPM was 5.8. Therefore, I suggest that, although the two groups' gains in WCPM from beginning of year to end of year showed no statistical difference, the rate at which the experimental group gained in WCPM is noteworthy.

*Hypothesis 5, Reading Comprehension*

There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading comprehension between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

*Statistical analysis.*

Finding: There is no significant difference in the mean reading performance gains in reading comprehension between the experimental group and the control group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .6285. This statistical tool is appropriate because gain is measured as a categorical value for number of correct questions gained (-1, 0, 1, 2, 3, 4, 5, 6, or 7), and the experimental/control group is a categorical value. Gain represents the change in the number of questions answered correctly from beginning of year to end of year. For example, the “-1” row indicates the number of students who answered 1 less question at the end than at the beginning. The student would have given 1 correct response in the beginning and 0 correct responses in the end. Similarly, the “7” row indicates those students who answered seven more questions at the end than at the beginning (which would be a perfect score of 8).

Table 5

*Research Hypothesis 5. Reading Comprehension Gains Comparing Experimental Group to Control Group*

<b>Group</b>	<b>-1</b>	<b>0</b>	<b>+1</b>	<b>+2</b>	<b>+3</b>	<b>+4</b>	<b>+5</b>	<b>+6</b>	<b>+7</b>
<b>C</b>	2	2	2	7	10	7	2	0	0
<b>E</b>	2	3	7	6	8	4	4	0	1

Note:  $P$ -value = .6285, No significant difference

*Descriptive Data*

TPRI criteria for Satisfactory rating in comprehension states the reader must correctly respond to at least 6 of the 8 questions at the end of text reading or listening.

Raw data reveals that 14.28% (5) of the 35 subjects in the experimental group and

6.89% (2) of the 29 subjects in the control group responded correctly to at least 6 of the 8 comprehension questions at the post intervention data point. The examiner noted that the difference of 7.39%, although not statistically significant, suggests that approximately twice as many subjects in the experimental group reached the Satisfactory status in reading comprehension at the end of the year compared to the number of subjects in the control group reaching Satisfactory status.

### *Demographic Data*

#### *Achievement across age.*

Finding A: There is no significant difference between age groups in the rate of overall unsatisfactory versus satisfactory performance from beginning of year to end of year in the experimental group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .1059 (chi-square = 12.28). This statistical tool is appropriate because age is measured as a categorical value (2, 3, 4, 5, 6 or 7), and the experimental/control group is a categorical value.

Some experimenters consider a  $p$ -value of this magnitude indicative of a mild statistical significance. However, since virtually all students belong to the Unsatisfactory to Unsatisfactory (0-0) group, a difference in rates—even if judged moderately significant—should be handled with caution. The fact that most students are 0-0 types is masking the effect due to age.

Table 6

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Age in Months for Experimental Group*

<b>Age Group</b>	<b>0-0</b>	<b>0-1</b>
<b>2</b>	5	0
<b>3</b>	12	1
<b>4</b>	6	1
<b>5</b>	7	0
<b>6</b>	2	0
<b>7</b>	0	1

Note:  $P$ -value = .1059\*, No significant difference

\* Some experimenters consider a  $p$ -value of this magnitude indicative of a mild statistical significance

Finding B: There is no significant difference between age groups when it comes to the rate of overall Unsatisfactory versus Satisfactory performance from beginning of year to end of year for the control group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .1210 (chi-square = 10.08). This statistical tool is appropriate because age is measured as a categorical value (1, 2, 3, 4, 5, 6, or 7), and the experimental/control group is a categorical value. However, since virtually all students belong to the Unsatisfactory to Satisfactory (0-0) group, the fact that most students are 0-0 types is masking the effect due to age.

Table 7

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Age in Months for Control Group*

<b>Age Group</b>	<b>0-0</b>	<b>0-1</b>
<b>1</b>	0	1
<b>2</b>	5	1
<b>3</b>	7	0
<b>4</b>	3	2
<b>5</b>	5	0
<b>6</b>	2	1
<b>7</b>	2	0

Note: *P*-value = .1210, No significant difference

Finding C: Neither the student group (experimental or control) nor the age of a student (one of seven categories) significantly impacts the rate of overall Unsatisfactory versus Satisfactory performance from beginning of year to end of year. Nominal Logistic Regression analysis resulted in a *p*-value of .6116 for the effect of student group and .7850 for the effect of age. This statistical tool is appropriate because age is measured as a categorical value (1, 2, 3, 4, 5, 6, or 7), the experimental/control group is a categorical value, and the response variable is dichotomous (0-0 or 0-1).

*Achievement across ethnicity.*

Finding A: There is a significant difference between ethnicity groups when it comes to the rate of overall Unsatisfactory versus Satisfactory performance from the beginning to the end of the year for the experimental group. The Chi-Square Test of

Homogeneity resulted in a  $p$ -value of .0133 (chi-square = 13.73). This statistical tool is appropriate because ethnicity is measured as a categorical value (2, 3, 4, or 5), and the experimental/control group is a categorical value. The rate of progressing from Unsatisfactory to Satisfactory for ethnic group 4 is significantly higher than the other ethnic groups and is the sole reason for the significant effect.

Table 8

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Ethnicity for Experimental Group*

<b>Ethnic Group</b>	<b>0-0</b>	<b>0-1</b>
<b>2</b>	0	1
<b>3</b>	15	0
<b>4</b>	10	2
<b>5</b>	7	0

Note:  $P$ -value = .0133, Significant difference

Finding B: There is no significant difference between ethnic groups when it comes to the rate of overall Unsatisfactory versus Satisfactory performance from the beginning of year to end of year for the control group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .3366 (chi-square = 4.004). This statistical tool is appropriate because ethnicity is measured as a categorical value (2, 3, 4, or 5), and the experimental/control group is a categorical value.



Table 9

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Ethnicity for Control Group*

<b>Ethnic Group</b>	<b>0-0</b>	<b>0-1</b>
<b>2</b>	1	0
<b>3</b>	8	4
<b>4</b>	9	1
<b>5</b>	6	0

Note: *P*-value = .3366, No significant difference

Finding C: Neither the student group (experimental or control) nor the ethnicity of a student (one of four categories) significantly impacts the rate of overall Unsatisfactory versus Satisfactory performance from beginning of year to end of year. Nominal Logistic Regression resulted in a *p*-value of .2928 for the effect of student group and .6891 for the effect of ethnicity. This statistical tool is appropriate because ethnicity is measured as a categorical value (2, 3, 4, or 5), the experimental/control group is a categorical value, and the response variable is dichotomous (0 -0 or 0 -1).

The explanation as to why the effect of ethnicity is found to be insignificant now when it was found to be significant on the experimental students is the following: Now that all the students are pooled together in one analysis, the lack of an effect of ethnicity on the control group "mixes back in" and nullifies the effect found on the experimental group. Thus, *overall* (collectively) Ethnicity does not affect the rates of Unsatisfactory to Unsatisfactory and the rates of Unsatisfactory to Satisfactory. However, on the experimental group alone, ethnicity did have an impact.

*Achievement across socio-economic status (SES).*

Finding A: There is no significant difference between SES groups when it comes to the rate of overall Unsatisfactory (0) versus Satisfactory (1) performance from beginning of year to end of year for the experimental group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .710 (chi-square = 0.9722). This statistical tool is appropriate because SES is measured as a categorical value (either 0 or 1), and the experimental/control group is a categorical value. Since virtually all students belong to the 0-0 group, the fact that most students are Unsatisfactory to Satisfactory types is masking the effect due to SES.

Table 10

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Socioeconomic Status for Experimental Group*

<b>SES Group</b>	<b>0-0</b>	<b>0-1</b>
<b>0</b>	8	0
<b>1</b>	24	3

Note:  $P$ -value = .5710, No significant difference

Finding B: There is no significant difference between SES groups when it comes to the rate of overall Unsatisfactory versus Satisfactory performance from the beginning of year to end of year for the control group. The Chi-Square Test of Homogeneity resulted in a  $p$ -value of .6304 (chi-square = 1.498). This statistical tool is appropriate because SES is measured as a categorical value (either 0, 1, or 2) and the experimental/control group is a categorical value. Again, since virtually all students belong to the

Unsatisfactory to Unsatisfactory (0-0) group, the fact that most students are 0-0 types is masking the effect due to SES.

Table 11

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year by Socioeconomic Status for Control Group*

<b>SES Group</b>	<b>0-0</b>	<b>0-1</b>
<b>0</b>	4	2
<b>1</b>	19	3
<b>2</b>	1	0

Note: *P*-value = .6304, No significant difference

Finding C: Neither the student group (experimental or control) nor the SES of a student (one of three categories) significantly impacts the rate of overall Unsatisfactory versus Satisfactory performance from beginning to end of Year. Nominal Logistic Regression analysis resulted in a *p*-value of .2790 for the effect of student group and .9724 for the effect of ethnicity. This statistical tool is appropriate because SES is measured as a categorical value (0, 1, or 2), the experimental/control group is a categorical value, and the response variable is dichotomous (0-0 or 0-1).

*Overall Achievement*

*Statistical analysis.*

Finding: There is no significant difference between the control and experimental groups when it comes to the rate of Overall Unsatisfactory versus Satisfactory performance from beginning of year to end of year (Appendix D). The Chi-Square Test of Homogeneity resulted in a *p*-value of .4510 (chi-square = 1.09). This statistical tool is

appropriate because Satisfactory/Unsatisfactory is measured as a categorical value (either 0 or 1) and the experimental/control group is a categorical value.

Table 12

*Unsatisfactory/Satisfactory from Beginning of Year to End of Year Comparing Experimental Group and Control Group*

<b>Group</b>	<b>0-0</b>	<b>0-1</b>
<b>C</b>	24	5
<b>E</b>	32	3

Note: *P*-value = .4510, No significant difference

*Descriptive analysis.*

Percentages of experimental and control group members going from Unsatisfactory to Satisfactory show that 8.67% (3) of the 35 experimental group participants and 17.24% (5) of the control group participants reached Satisfactory status from Beginning of Year to End of Year. The researcher notes two potentially confounding factors:

- Good classroom reading instruction for the control group

The Nacogdoches Independent School District became a Reading First School two years prior to the study. This identification carries requirements for improved reading instruction, including direct teaching, and gives financial support for improved instructional efforts. The district has noted increased scores on state-mandated assessments since becoming a Reading First School.

- 17.14% attrition rate in the control group

At the beginning of the study, the control group included 35 participants. However, at the end of the study, only 29 participants remained in that group. In this school district, students who move typically move frequently and are often the lower-performing students because of missed instruction and multiple environments. With caution, the experimenter suggests that the unequal rate of attrition between the experimental and control groups could account for some of the difference in Overall Achievement statistics.

### Summary

#### *Reading Components*

I implemented a 15-week pre-test, post-test experiment to examine the effects of the phonics based *Gottshall Early Reading Intervention* on achievement scores of low-performing, rural, first grade boys. Assessment data included scores on the *Texas Primary Reading Inventory* at beginning of year and end of year data points.

Variables included phonemic awareness, graphophonemic knowledge, reading accuracy (WCPM), reading fluency, and reading comprehension. Statistical data reveal no significant differences between the experimental and control groups in all areas. Small sample sizes contributed to the inability to find significant differences in all cases (Miller, 2007).

However, descriptive data (gains in percentages) indicate that the experimental group achieved more gain than the control group in four out of the five reading components: phonemic awareness, graphophonemic knowledge, reading fluency, and reading comprehension. On the other variable, reading fluency (word count per minute [WCPM]), the control group gains were slightly higher than the experimental group

gains. However, the Experimental Group began at a 50% lower WCPM than did the control group, therefore showing a higher *rate* of gain.

### *Demographic Data*

The examiner also studied the effects of age, ethnicity, and socioeconomic status on reading scores for the experimental group and control group. Statistical data indicate that there is no significant difference between groups with regard to age, ethnicity, or socioeconomic status except in one case. In the experimental group, the rate of overall achievement is significantly higher for the Hispanic participants than the other ethnic groups, and ethnicity is the sole reason for the significant effect (Miller, 2007).

### *Overall Achievement*

This inquiry also included examining the Overall Achievement gains for the experimental group and control group. Statistical data indicate there is no significant difference between the two groups in Overall Achievement gains. Again, small sample sizes contributed to the inability to find significant differences. Unequal attrition between the experimental and control groups could also confound the results.

### *Summary Statements*

There were no significant statistical differences between the experimental and control groups in all five reading components assessed. However, descriptive data (percentage of gains) showed the experimental Group made greater gains in four out of five areas. Although the control group showed greater gains on the other component, the experimental group demonstrated a higher *rate* of gain by going from a lower starting point to an equal ending point. Age and socioeconomic status did not affect outcomes. According to statistically significant data, the Hispanic participants were more

likely to benefit from the intervention (G.K. Miller, personal communication, October 3, 12, & 17, 2007).

## CHAPTER V

### SUMMARY AND CONCLUSIONS

Learning to read is an essential foundation for success in our society (Kauerz, 2002; Lyon & Chhabra, 2004; Snow, Burns, & Griffin, 1998). “The importance of success in reading for lifelong achievement must not be underestimated; how well a child learns to read may determine future opportunities, including the basic activities of daily life” (McCardle & Chhabra, 2004, p. 3). Because reading is extremely critical, America’s parents and practitioners, as well as researchers and politicians, are seriously concerned about our nation’s children learning to read (Snow et al., 1998).

For many decades, learning to read and write has been the most crucial curriculum issue in American education (Sweet, 2004). “Literacy is the key to academic success. However, schools have historically had difficulty teaching a sizeable minority of children to read” (Morris & Slavin, 2003, p. vii). Recent reports from NAEP confirm that 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> grade students score abysmally low, particularly disadvantaged students in rural environments (National Center for Education Statistics [NCES], 2003).

Educators, researchers, and other policy makers have recognized the problem and are making extensive efforts to improve reading instruction in hopes of increasing students’ reading success (Coyne, Zipoli, & Ruby, 2006). According to public databases, approximately 100,000 research studies on reading have been published since 1966, with perhaps another 15,000 before then (NRP, 2000). Federal and state governments have allocated billions of dollars targeted at improving literacy scores through reading research, instruction, and accountability (McCardle & Chhabra, 2004).



Because of these intensive measures, overall reading achievement has increased in some areas (Allington, 2006). Despite this success, however, a significant number of children in specific populations are not learning to read (NCES, 2000). The number of students unable to read at grade level in the target areas, including rural boys, is now more than 50% and in some groups as high as 66% (Grigg, Daane, Jinn, & Campbell, 2003). In all 50 states, higher percentages of boys scored below basic in the fourth grade than girls (NCES, 2003). The problem remains: America still has boys who cannot read and are at risk for failure, particularly those living in poverty (NCES, 2000; Shapiro, 2000; Snow et al., 1998).

#### *Gottshall Early Reading Intervention (GERI)*

A consensus of the literature journaling extensive scientific research strongly advocates that children with reading disabilities need early intervention (Clay, 1999) including explicit, systematic phonics instruction (Chard & Dickinson, 1999; Tierney & Readence, 2005) and multiple opportunities for repeated readings in relevant texts (Tompkins, 2003). In 2000, the federal government established the National Reading Panel (NRP) in a concentrated effort to study data and recommend ways to improve reading scores (NRP, 2000). The group identified five reading components that consistently predict early reading success and recommended they be systematically included in effective reading instruction: phonemic awareness, graphophonemic knowledge, reading accuracy, fluency, and comprehension (2000).

Recognizing the need for an intervention targeting low performing, rural boys, I designed and implemented the *Gottshall Early Reading Intervention (GERI)* based on

the NRP's recommendations and scientific reading research findings. The intervention included a 15-week small group pullout format with a phonics based direct instruction model. The 30-minute lessons occurred three times per week and included regular and systematic instruction on the five reading components identified as predictors of early reading success by the National Reading Panel (2000) (Appendix A). Also, the participants consistently engaged in repeated readings of relevant texts of interest to boys containing content about animals, actual photographs, expository text, and boys as main characters (Tompkins, 2006).

The purpose of this investigation was to determine if the *Gottshall Early Reading Intervention (GERI)* improved the TPRI scores of low performing, first grade boys in a rural setting. *GERI* involved an intensive, explicitly scripted, phonics-based, direct instruction model. I investigated the five reading components with the following quantitative research question:

To what extent does the *Gottshall Early Reading Intervention (GERI)* increase the mean reading achievement of rural first grade boys? I answered this question with the following hypotheses:

H<sub>01</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in phonemic awareness between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

H<sub>02</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in graphophonemic knowledge between the

experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

- H<sub>03</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading accuracy between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>04</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading fluency between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).
- H<sub>05</sub> There is no significant difference ( $\alpha = .05$ ) in the mean reading performance gains in reading comprehension between the experimental group and the control group as measured by the Texas Primary Reading Inventory (TPRI) (Texas Education Agency, 2006).

## Summary of the Results

### *Reading Components*

I implemented a 15-week pre-test, post-test experiment to examine the effects of the phonics-based *Gottshall Early Reading Intervention* on achievement scores of low-performing, rural, first grade boys. Scores on the *Texas Primary Reading Inventory* at beginning of year and end of year data points served as assessment data.

Variables included phonemic awareness, graphophonemic knowledge, reading accuracy, reading fluency, and reading comprehension. Statistical data revealed no

significant difference between the experimental and control groups in all areas. Small sample sizes contributed to the inability to find significant differences in all cases (G.K. Miller, personal communication, October 3, 12, & 17, 2007).

However, descriptive data comparing percentages of gain indicate the experimental group achieved more gain than did the control group in four out of the five reading components: phonemic awareness, graphophonemic knowledge, reading fluency, and reading comprehension. On the remaining variable, reading fluency (word count per minute [WCPM]), the control group gains were slightly higher than the experimental group gains. Thus, the experimental group showed a higher *rate* of gain, beginning at a 50% lower WCPM than did the control group.

#### *Demographic Data*

The examiner also studied the effects of age, ethnicity, and socioeconomic status on reading gains for the experimental group and control group. Statistical data indicate that there is no significant difference between groups with regard to age, ethnicity, or socioeconomic status except in one case. In the experimental group, the rate of overall achievement is significantly higher for Hispanic participants than other ethnic groups, and ethnicity is the sole reason for the significant effect (G.K. Miller, personal communication, October 3, 12, & 17, 2007). Hispanic boys had a higher rate of going from Overall Unsatisfactory at beginning of year to Overall Satisfactory at end of year (Appendix D).

### *Overall Achievement*

This inquiry also examined overall achievement gains for the experimental group and control group. Statistical data indicate there is no significant difference between the two groups in overall achievement gains in all five reading components. However, when examined across ethnicity, data reflected that Hispanic participants in the experimental group were more likely to have a higher rate of reaching Overall Satisfactory status (Appendix D). Again, small sample sizes contributed to the inability to find significant differences (G.K. Miller, personal communication, October 3 12, & 17, 2007). Unequal attrition between the experimental and control groups could have also altered the results.

### *Conclusions*

There were no significant statistical differences between the experimental and control groups in all five reading components assessed. However, descriptive data showed the experimental group made greater gains in four out of five areas. Although the control group experienced greater gains on the fifth component, the experimental group demonstrated a higher *rate* of gain by going from a lower starting point to an equal ending point. Age and socioeconomic status did not affect outcomes. However, data indicated that ethnicity did have a significant effect in the experimental group: Hispanic participants were more likely to benefit from the intervention (G.K. Miller, personal communication, October 3 12, & 17, 2007).

### Contributions of the Study

Our responsibility as educators and researchers is to discover the most successful way to teach boys to read in the early years. The *Gottshall Early Reading*

*Intervention* shows promise in this quest. What makes the Gottshall approach unique and important? The study contributes to the knowledge base of best reading practices in the following ways:

1. Scientifically based reading research (SBRR) model— I conducted the investigation with scholarly research methods including the experimental design with randomization (NRP 2000). Also, I created and implemented an Integrity Checklist and served as project monitor to reduce researcher bias and to ensure program fidelity. Similarly, proven results in previous scientific reading research guided decisions for selecting grouping formats, teaching strategies, instructional materials, and leveled texts.
2. Intervention targeting boys—Very few, if any, reading interventions exist that are designed specifically for low performing, rural boys, the population most at risk for reading failure. Lessons included relevant texts, engaging materials, and creative strategies based on the author’s knowledge and skills gained from years of experience and reading research.
3. Multiple modalities—The lessons included instruction involving five pathways to the brain: auditory (phonemes), visual (graphemes), semantic (photographs), tactile (objects), and kinesthetic (actions).
4. Letter/sound sequence—The sequence in which letters (graphemes) and sounds (phonemes) were introduced was determined by teaching the “most useful” letters first. For example, the letter (grapheme) and sound (phoneme) for the letters “a, s, m, and e” came first because they are some of the most frequently used letters in the English language. Similarly, lower-case letters

were introduced first. Books contain more lower-case letters than upper-case letters and therefore are “more useful” (Bursuck & Damer, 2007) (Appendix B).

5. Relevant texts—The leveled books selected for text reading in the lessons met criteria established as being highly motivating to boys: animals as characters, actual photographs, expository texts, and boys as protagonists (Lynch-Brown, 2005).
6. School day scheduling—The lessons were conducted during the regular school day but not during the classroom reading instruction block. Therefore, the participants accessed classroom instruction and the intervention without the need for after-school arrangements.
7. Qualitative effect—Many classroom teachers who participated in the study reported that previously reluctant readers became motivated to read and write after receiving instruction in the *Gottshall Early Reading Intervention*.
8. Collaborative research model—The Gottshall project could serve as a model for collaboration among several entities to determine effective instruction for children with reading difficulties. Public school districts, teacher education university faculty, commercial businesses, private citizens, and parents cooperated to make the study possible.

### Recommendations

Based on the consistent, positive results found in the descriptive data, the *Gottshall Early Reading Intervention (GERI)* shows promise toward making an important contribution to a viable solution for one of America’s most disturbing problems: We have

young boys who are not learning to read (NCES, 2003). Comparing percentages of gains between the experimental group and control group indicated that participation in *GERI* resulted in higher reading gains in four out of five areas. Investigative methods, including matched pairs and randomization, depicted scholarly research practices (NRP, 2000). Not finding statistically significant differences was solely attributed to small sample sizes (Miller, 2007). Therefore, I make the following recommendations:

- Replicate the study with a larger sample size and in various low income, rural, settings to establish statistical differences
- Assess gains with more than one instrument
- Investigate the possibility of alternate statistical tools for analyzing data
- Increase intervention training intensity for professionals delivering lessons
- Replicate the study with a larger sample size in areas with a high percentage of Hispanic students

This study has contributed to the reading research field and supports the public and professional expectation that instructional practices be embedded in findings determined through scholarly investigations. “Research evidence is essential for identifying effective educational practice. Responsible decisions about what is good for students require scientific evidence” (Reyna, 2004).

Our responsibility as educators and researchers is to discover the most successful way to teach young boys to read. “If a child has not yet learned to read, then it is because we have not yet found the correct way to teach him” (Clay, 1993). We must advocate for research-based practices, continued investigations, and legislative support



to meet the academic needs of young boys in poverty—our nation’s most challenged readers.

APPENDIX A  
INFORMED CONSENT FORM

## University of North Texas Institutional Review Board

### Informed Consent Form

Before agreeing to your child's participation in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Title of Study: *Gottshall Early Reading Intervention (GERI): Enhancing the achievement of rural first grade boys with a phonics-based approach*

Principal Investigator: Dorothy L. (Dottie) Gottshall, a graduate student at the University of North Texas (UNT), Department of Counseling, Development, and Higher Education.

**Purpose of the Study:** You are being asked to allow your child to participate in a research study which involves attending extra reading lessons at school with experienced teachers. The study will help us find out if these teaching activities will help young boys read better.

**Treatment and Control Group:** It is necessary to have one group of boys attend the lessons and another group of boys continue regular classroom lessons so we can compare the progress of the two groups. This process will allow us to know how effective the new lessons have been. Therefore, names will be drawn to place the boys either in the treatment group or the control group. The boys in the treatment group will attend the lessons. The boys in the control group will continue with classroom instruction. You will be notified of your child's placement as soon as the groups are determined. The researcher will volunteer to train a teacher on your campus so boys in the control group might be able to attend lessons after the study is over.

**Study Procedures:** Your child will be asked to recognize and say letters and sounds and use those sounds to make words during reading activities. The children will match words and pictures with letters and sounds. They will also have many opportunities to read new and interesting first grade books. Your child will be in a small group of about 3-4 boys for the reading lessons. That will take about 30 minutes, three days a week, of your child's time.

**Foreseeable Risks:** No foreseeable risks are involved.

**Benefits to the Subjects or Others:** We expect the project to benefit your child by helping him be a better reader. The lessons should help him recognize words easier and also improve how well he understands the stories he reads. Learning to read better could also help your child be more confident in other academic areas. The program will benefit you and your child's teacher by providing extra reading instruction. Also, the information gained in the study can help your child's teacher prepare better reading lessons specifically for him. You will also receive a benefit in knowing your child has a chance of receiving more help with reading.

**Procedures for Maintaining Confidentiality of Research Records:** Your child's confidential information will be protected. Records will be kept in locked file cabinets in locked offices. Only his reading teacher, his classroom teacher, and authorized NISD personnel, such as the principal, will be able to see the results of the study, just as with any testing scores. The lessons may be video taped or audio taped to use in teacher education classes and conference presentations, but no names will be used. The video/audio tapes will be kept for a period of three years. The confidentiality of your child's individual information will be maintained in any

publications or presentations regarding this study. At the end of the study, you will receive a summary report of your child's reading performance.

**Questions about the Study:** If you have any questions about the study, you may contact Dottie Gottshall at telephone number \_\_\_\_\_, or the faculty advisor, Dr. George S. Morrison, UNT Department of Counseling, Development, and Higher Education, at telephone number 940-565-4476.

**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Participants' Rights:** Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Dottie Gottshall or a research assistant has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to allow your child to take part in this study, and your refusal to allow your child to participate or your decision to withdraw him/her from the study will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your child's participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as the parent/guardian of a research participant and you voluntarily consent to your child's participation in this study.
- You have been told you will receive a copy of this form.

\_\_\_\_\_  
Printed Name of Parent or Guardian

\_\_\_\_\_  
Signature of Parent or Guardian

\_\_\_\_\_  
Date

**For the Principal Investigator or Designee:** I certify that I have reviewed the contents of this form with the parent or guardian signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the parent or guardian understood the explanation.

\_\_\_\_\_  
Signature of Principal Investigator or Designee

\_\_\_\_\_  
Date

APPENDIX B  
LESSON TEMPLATE

# ***Gottshall Early Reading Intervention (GERI)***

## **Lesson Template**

**Grapheme** (Letter) \_\_\_\_\_

**Phoneme** (Sound) \_\_\_\_\_

**Book Title** \_\_\_\_\_

**Author** \_\_\_\_\_

**Level** \_\_\_\_\_

### **Modalities** (Chant)

Visual (Letter cards)  
Auditory (Sound cards)  
Semantic (Picture cards)  
Kinesthetic (movement)

### **Materials**

Letter cards  
Picture cards  
Objects  
Texts  
Word cards  
White boards, markers or paper, writing implement

### **Instructional Sequence**

1 minute	Transition/Motivation
3 minutes	Reading warm-up (previously read texts)
3-5 minutes	Phonemic Awareness Segmenting (separating sounds) Blending (combining sounds)
8 minutes	Graphophonemic Knowledge (Phonics/Alphabetic Principle) Letter-sound correspondence (direct instruction) Explicit: "My Turn, Together, Your Turn" Strategy Chant (letters/sounds via modalities) Analysis (decoding/grapheme-phoneme) Sight recognition (automatic recall) Spelling/writing (encoding/phoneme-grapheme)
2 minutes	Vocabulary Explicit Strategies Pictures Story content
7 minutes	Fluency Text reading (Repeated Reading) Echo/Choral Independent (Whisper read) Choral
2 minutes	Comprehension
1 minute	Closure/Dismissing Transition

APPENDIX C  
LESSON SEQUENCE

***Gottshall Early Reading Intervention (GERI)***

**Lesson Sequence**

**Forty-five (45) Lessons**

<b>1</b>	Introduction; a	<b>26</b>	pP
<b>2</b>	m	<b>27</b>	D
<b>3</b>	e	<b>28</b>	I
<b>4</b>	t	<b>29</b>	N
<b>5</b>	sS	<b>30</b>	A
<b>6</b>	i	<b>31</b>	R
<b>7</b>	f	<b>32</b>	H
<b>8</b>	d	<b>33</b>	G
<b>9</b>	r	<b>34</b>	Review; read aloud
<b>10</b>	oO	<b>35</b>	B
<b>11</b>	g	<b>36</b>	wW
<b>12</b>	Review; read aloud	<b>37</b>	j
<b>13</b>	l	<b>38</b>	y
<b>14</b>	h	<b>39</b>	xX
<b>15</b>	uU	<b>40</b>	q
<b>16</b>	cC	<b>41</b>	zZ
<b>17</b>	b	<b>42</b>	J
<b>18</b>	n	<b>43</b>	E
<b>19</b>	T	<b>44</b>	Q
<b>20</b>	L	<b>45</b>	Review; Read Aloud;
<b>21</b>	M		Closure
<b>22</b>	F		
<b>23</b>	Review; read aloud		
<b>24</b>	kK		
<b>25</b>	vV		



APPENDIX D  
TPRI OVERALL SCORING CRITERIA

# TPRI Unsatisfactory/Satisfactory Quantifiers

Satisfactory = Total score 5 points

Unsatisfactory = Total score 4 and below

Experimental	Control	Participant Number _____		
(circle one)				
Item	BOY	MOY	EOY	
	Score	Score	Score	
If all D's or 5's, score 1 point: Phonoemic Awareness	___/4 ___	___/4 ___	___/4 ___	
If all D's or 5's, score 1 point: Graphophonemic Knowledge	___/5 ___	___/4 ___	___/4 ___	
If level 3,4, or 5, score 1 point: Reading Accuracy Story Level	___ ___	___ ___	___ ___	
If 60 wcpm or higher, score 1 point: Reading Fluency (wcpm)	___ ___	___ ___	___ ___	
If 6-8 answered correctly, score 1 point: Reading Comprehension	___/8 ___	___/8 ___	___/8 ___	

	BOY	MOY	EOY
Total Score	___/5	___/5	___/5
(circle one)	U S	U S	U S

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