THE EFFECTS OF THE TEXAS READING FIRST RESPONSE TO INTERVENTION PROGRAM ON STUDENT ACHIEVEMENT AND CAMPUS SPECIAL EDUCATION RATES

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The purpose of this study was to examine special education populations, special education reading achievement, and regular education reading achievement in relation to the implementation of the Reading First three-tiered model as a response to Intervention platform. The population for this study focused on rural schools with Grades K-3 in attendance. Schools participated in the reading first grant period of the 2003-2009 school years. Forty-seven Texas Reading First schools were compared to 47 campuses having similar populations, socioeconomic makeups, and grade structures.

This study utilized quantitative research measures to evaluate the level of special education populations on Reading First campuses using a response to intervention model. Quantitative measures were also used to evaluate those same campuses achievement rates of both special education and regular education students on the Texas Assessment of Knowledge and Skills reading tests.

The study's outcome data showed little to no statistic significance for the three research questions. However, the inferential statistics showed a decrease in the special education population of the Reading First schools. Inferential statistics also indicated both the special education and the regular education students showed growth on the Texas Assessment of Knowledge and Skills reading tests.

The use of a response to intervention program can be effective in the reduction of special education students identified on school campuses. Response to intervention
programs can boost achievement levels of students receiving special education services. Students not enrolled in special education can benefit from effective response to intervention services.
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CHAPTER 1
INTRODUCTION

The last several decades fostered changes in federal and state educational expectations and outcomes for students. These changes have led to the development of state standards for all students resulting in focused instructional interventions for both regular and special education students (Minow, 2001). Federal and state educational agencies placed a significant emphasis on accountability systems, funding, standards and student achievement (Erickson, 1998; Quality Counts, 1999). Accountability became the leading influence in public school reform with student progress and achievement as the focus by which schools were evaluated (Vacca, 2003). For special education, Response to intervention (RtI) presented a method for educators to strengthen the overall instructional program and accelerate learning through tiered intervention (McCook, 2006; Vaughn Gross Center for Reading and Language Arts, 2005; Vaughn, Wanzek, & Fletcher, 2007).

The current school structure and student body composition changed during the last 25 years (McLauglin & Verstegen, 1998). Ginther and Pollak (2000) concluded students' diverse backgrounds and family demographic structures played a vital role in educational outcomes. Educating students in this changing society called for innovative practices and curriculum. By using high stakes testing, the federal and state governments held local districts and schools accountable for a high standard of student learning. Schools not meeting these standards faced sanctions and loss of local control (Vacca, 2003).

As the educational standards for students increased, the need to target at risk
students for intervention became vital. Students at risk of failure and susceptible of becoming referred to special education led to a response to intervention platform of instruction. In order for all students to reach these high standards, RtI focused direct instruction of at-risk students and targeted their deficit in reading skills.

**History of Education Interventions and Reforms**

Prior to 1970, students with learning disabilities were not identified or allowed equal access to public education. Before the enactment of Education for all Handicapped Children Act (EHCA) in 1975, there were more than eight million children with disabilities between the ages of zero to 21. Of those, “…only half were receiving an appropriate education. Another 2.5 million were receiving an inappropriate education, and 1.75 million, usually those with severe disabilities, received no public education whatsoever” (Palmaffy, 2001, p. 2).

In 1975, Congress authorized the Individuals with Disabilities Education Act guaranteeing students with disabilities a free and appropriate education (PL 94-142, 1975). Since 1975 the number of students qualifying for special education has dramatically increased. Currently over 50% of all children with disabilities are considered disabled under the category of specific learning disability (SLD). The federal definition of a SLD was “a disorder in one of the basic psychological processes…” (Individuals with Disabilities Education Act, [IDEA], 2004). This drastic growth of students with learning disabilities has created questions concerning how students are identified for learning disabilities and if schools are doing enough to intervene with struggling students (Meek, 2007).
The standards movement in education impacted how educators approach curriculum and instruction for all students. Educating children from such diverse backgrounds and with disabilities challenged schools to find innovative techniques and resources (Shannon, 2004). Focusing on accountability of schools for student learning shifted the focus from inputs to outputs (McLaughlin & Verstegen, 1998). Funding, ratings, and even school sustainability rely on student learning.

Student needs have always been at the forefront of school operations. Historically, schools have qualified students for special education services using a discrepancy model. Bateman (1965) reintroduced a practice pioneered by Monroe in 1932 by using a reading index and calculating a discrepancy to find the actual level and the expected level of reading achievement for a student. Monroe (1932) used this discrepancy to access student’s academic needs. Bateman used Monroe’s discrepancy concept to identify children with learning disorders. Bateman (1965) defined learning disabled children as:

Children who have learning disorders are those who manifest an educationally significant discrepancy between their estimated potential and actual level of performance related to basic disorders in the learning process, which may or may not be accompanied by demonstrable central nervous system dysfunctions, and which are not secondary to generalized mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss. (p. 220)

Bateman’s definition ultimately tied the discrepancy model to the identification of learning disorders (Swanson, Harris, & Graham, 2003). The authors of the 1975 Education for All Handicapped Children Act (EAHCA) did not intend on solely determining the need for special education by the difference of achievement and potential; they also intended to examine “rule-outs” such as lack of instruction, lack of motivation, and socioeconomic circumstances. However, these were and still are rarely
considered as the rationale for the lack of school success (Cichon, 1987).

In 2004, Congress reauthorized the Individuals with Disabilities Education Act. The 2004 Individuals with Disabilities Education Act (IDEA) called for a change in the way students qualified for special education services. According to McCook (2006), prior to the 2004 legislation students qualified for special education using a discrepancy model measured by the difference in achievement score compared with their intelligence quotient (IQ) score. Individual states established the standard difference for special education placement. In order for a student to qualify for special education services in Texas, they had to have a 16-point difference between their IQ and their academic achievement. With the amendment of the IDEA in 2004, local education agencies were allowed to use a response to intervention model for determining student eligibility for learning disabled; however, all states use the discrepancy between IQ and achievement as an eligibility model (Frankenberger & Fronzaglio, 1991; Fuchs, Mock, Morgan, & Young, 2003). The Federal Registry defined the criterion for the identification of a learning disability as a severe discrepancy between the IQ and actual achievement (Stuebing, Fletcher, LeDoux, Lyon, Shaywitz & Shaywitz, 2002). The Federal Register is clear on the relationship between IQ and achievement:

A severe discrepancy between achievement and intellectual ability in one or more areas: (1) oral expression; (2) listening comprehension; (3) written expression; (4) basic reading skill; (5) reading comprehension; (6) mathematics calculations; or (7) mathematics reasoning. The child may not be identified as having a specific learning disability if the discrepancy between the ability and the achievement is primarily the result of: (1) a visual, hearing, or motor handicap; (2) mental retardation; (3) emotional disturbance; or (4) environmental, cultural, or economic disadvantage. (USOE, 1977b)

With the 2004 IDEA legislation, school districts are not mandated to use only a discrepancy model; they can also take into consideration the students ability to respond
Even though the discrepancy model was not entirely eliminated by Congress, precedence was set for focused instruction to take place prior to the referral of a student to special education. According to McCook (2006) the current level of students at risk for school failure is estimated to range from 20% to 30% of the school population. Included in this estimate is approximately 12% to 15% of the general school population and 8% to 15% of the special education population. Students already in special education and those at risk are in need of intense interventions.

**Current Need for Interventions**

Schools have a vested interest in student achievement. Special education is no longer a place for underachieving students to hide. Schools must find a way to increase the academic foundations in the general education setting, while reducing the number of students receiving special education services and strengthening special education programs. Statutory regulations are currently focusing on the reduction of special education students and the strengthening of general and special education programs. The true value of a special education program is whether children close the gap with their peers (President’s Commission on Excellence in Special Education, 2002).
One remedy to the special education dilemma is response to intervention (RtI). RtI is an instructional model focusing on the early intervention of at risk students. Gresham (2001) defined RtI as “the change in [a student’s] behavior or performance as a function of an intervention” (p. 2). Wright (2007) stated, “schools organize their intervention resources into levels of intensity” (p. 3). Students identified as being at risk of failure are placed into an intensive intervention program and administered intense interventions targeting individualized needs (Kovaleski, 2003). Hollenbeck (2007) stated that the literature supporting RtI and its effects on student's achievement is a relatively new concept and is considered an emerging field of study. However, in a 2009 survey conducted by Berkeley, Bender, Peaster, and Saunders, 47 of the 50 US states have developed or are in the process of developing a response to intervention protocol. This response to intervention approach not only serves as an instructional approach for learning, but several states utilize it as evidence from special education qualifications (Hoover, 2010, Zirkel & Krohn, 2008).

Rationale for the Study

This study focused on student intervention as it related to a reduction in the percentage of students receiving special education services on the local Texas school campuses. This study was essential for several reasons. Schools were charged to ensure student performance levels with no increase in the percentage of special education enrollment with the standard levels defined by the state and federal government guidelines. Smith (2005) stated the No Child Left Behind Act of 2001 (NCLB) or “Public Law 107-110” linked high stakes testing with strict accountability
measures designed to ensure that, no child was left behind. Schools across the nation were graded by the progress of all students.

The NCLB legislation incorporates various testing policy mechanisms. It relies on testing to focus attention on valued learning outcomes; to help spur greater effort on the part of administrators, teachers, and students; to help parents become better informed about school quality; and to direct the allocation of educational resources, including within-school allocations of time and effort, toward groups of students that have lagged behind. (Haertel & Herman, 2005, p. 1)

Problem Statement

The problem focused on the influence the Reading First model of response to intervention had on student achievement in the regular and special education setting and the impact it had on the percentage of students qualifying for special education. The percentage of students passing the 2009-2010 Texas Assessment of Knowledge and Skills (TAKS) tests and the campus special education percentages were used as the criterion variables.

Purpose of the Study

The purpose of this study was to focus on the effect the three-tiered reading model has on the reduction in special education referrals and the impact the three-tiered reading model had on student achievement of general and special education student achievement. This intervention program was implemented in Texas kindergarten through third grade schools in order to reduce special education referrals, reduce the special education population, and impact student achievement. The forefront of school achievement hinged on student success and their ability to achieve defined educational
goals. Today’s schools must be able to reduce the number of special education students while attaining a high level of student learning for all students.

Research Questions

1. What is the effect of the Texas Reading First model of response to intervention on the campus special education rates?

2. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores for students receiving special education services?

3. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores?

Definition of Terms

- **Adequate yearly progress (AYP):** A measure designed by the federal government to hold schools, districts and public school institutions accountable for student achievement under Title I of the No Child Left Behind Act (US Department of Education, 2010).

- **Discrepancy model** - A way of qualifying students for special education by using a predetermined numerical score derived from the difference between a student’s intelligence quotient (IQ) and his or her academic achievement score (Jimenez, 2010).

- **High stakes testing** - An assessment of individual performance. The data gained from the assessment is used to make direct decisions about student promotion,
teacher effectiveness, program performance, and/or institution accountability (Joint Committee on Standards for Educational and Psychological Testing of the AERA, APA, and NCME, 1999).

- Reading recovery - A one-on-one, short-term intervention offered to first time first graders experiencing difficulty in early reading skills (Clay, 1987).

Limitations

In the 2004-2005 and 2005-2006 school years a total of 714 Texas public elementary and charter schools were awarded the federal Reading First grant. This study focused on data collected from 47 campuses located in school districts with populations below 8,000 students. Schools participating in this study completed a minimum of five years of the federal Reading First grant. The data used were obtained from the Texas Education Agency (TEA) Academic Excellence Indicator System (AEIS) website. Information gathered from the AEIS website is dependent on the correct submission of data from each district.

Data from this study was restricted to Texas school districts participating in the Reading First grant from the years 2003-2009. This study used only assessment results from the TAKS test administered from 2004-2009 and special education data from 2004-2009. The results are not reflective of other school years.

Summary and Organization of the Study

The percentage of students receiving special education services in 2009 in schools utilizing the Reading First's three-tiered model of response to intervention (RtI)
were analyzed. Data were collected to determine if there were statistical relationships between the students receiving Reading First's RtI services versus those students not receiving Reading First's RtI services.

Chapter 2 includes a review of literature focusing on the historical and legal facets of special education, as well as school reform movements as they pertain to special education. The chapter includes a comprehensive review of the three-tiered model as a response to intervention model. Chapter 3 contains the research design, the population of subjects, procedures for data collection, and procedures for data analysis. Chapter 4 presents the results of the data analysis. Chapter 5 analyzes results of the study providing conclusions and recommendations for future studies.
Understanding the educational and social needs of individuals with disabilities has been a challenge for society worldwide. Dating back to the 4th century A.D., the western world provided hospices and hospitals for the most visibly disabled persons such as the blind and mentally disabled individuals. These hospitals also housed the outcasts of society. Patients included prostitutes, political outcasts, persons in poverty, and unwanted wives, daughters, and sons. The common practice of institutionalizing these individuals was to isolate them from society (Doemer, 1969, 1981). Spain and France began to focus less on the incarceration and more on the education of the disabled. In the 1500s, Europe began concentrated efforts to educate the deaf, and these efforts carried over into the 1700s for the blind (Osgood, 2005; Winzer, 1993). As colonization began in North America, institutional care was established similar to those in Europe for mentally disabled individuals. The treatment of these disabled persons included isolation, shackling and other accepted practices such as bloodletting.

By the 1800s, American reformers helped to create a more compassionate and optimistic attitude in the treatment and formal instruction for individuals with disabilities through private and public institutions. In 1817, the first institution for the deaf was established in Hartford, Connecticut mostly by the works of Thomas Hopkins Gallaudet and Laurent Clerc (Winzer, 1993; Gates, 1905; Osgood, 2005). Samuel Gridley Howe was another American that worked towards social reform in 1832 by heading the Massachusetts Asylum for the Blind. In addition, Howe helped establish the
Massachusetts Asylum for Idiotic and Feebleminded Youth in 1848, which was the first experimental school in south Boston. Through much research, Gallaudet and Howe were able to persuade donors and legislators of the importance of these institutions and the potential they had for teaching students otherwise considered uneducable. While leading this new humanitarian view of reform, Howe insisted that these institutions should be considered an essential part of the educational structure and a “necessary link” in regular school system (Osgood, 2005; Fay, 1893).

By the 1900s, public school systems were firmly established, and the consciousness of students with both apparent and non-apparent disabilities offered challenges to classrooms. As schools continued to grow and diversify, the ability to accommodate and cope with increasing numbers of disabled children became a challenge. Schools created different programs and methods including segregation, which was supported by the vast majority of educational researchers and professionals to address students with different learning needs (Kirk, Gallagher, & Anastasiow, 1993; Osgood, 2005; Wallin, 1955). These supporters concluded that segregation was essential for efficient classroom and school operation. They also believed that separation met the educational and psychological needs of the disabled students (Osgood, 2005).

As the number of students with exceptionalities increased, the unchallenged belief that segregation was in the best interest of pedagogy, management and social control held fast. Students with disabilities were excluded from school on a wide scale (Kirk et al., 1993; Pardini, 2002). For decades in the early 20th century, special education teachers and administrators continued to support segregation as the
preferred model for students with intellectual, physical and behavioral disabilities. The
work of these educators became a serious and purposeful process of creating an
educational sector within the public school system (Osgood, 2005).

During the 1930s through the 1960s, special education changed drastically. As
more in depth research was conducted on the etiology, diagnosis, and treatment of
disabilities, the public and professional views began to shift dramatically due to the
research, legal actions, public advocacy and widespread experience in schools.
Parents began to fight for the improvement of the educational atmosphere for their
disabled children (Pardini, 2002).

President Herbert Hoover held a House Conference on Child Health and
Protection (Children's Charter, White House Conference on Child Health and Protection,
1930). A report was titled The Handicapped Child by the Committee on the Physically
and Mentally Handicapped and was published in 1933 as Section IV of the full
conference report. This report contained 400 pages of statistics, description, analysis
and recommendations associated with the education and treatment of children with
disabilities in our nation. This White House conference committee expressed the view
that special education in public schools required an essential investment of public
concern and resources (Osgood, 2005; Woolley & Peters, 2010).

Change continued in the realm of special education. In 1949 Elise H. Martens, an
accepted leader in the field of special education who had conducted research on special
education since the 1920s, administered a survey of special education legislation
throughout the United States. The United States Office of Education published her
survey, focusing on the nature and extent of state laws relating to the education of
children with disabilities nationwide. The survey revealed wide variance in categories and policies toward special education among the states and also the extent to which these policies became a part of the public school mission. Martens wrote (as cited in Osgood, 2005),

Special education, as here used, refers to all those instructional services which are specially planned for children of elementary and secondary school age who are physically handicapped, seriously retarded in learning ability (often called mentally deficient or subnormal, or emotionally maladjusted). In addition, she added that gifted children should also be included in special education. (p. 38)

Martens continued by noting:

Special education did not include remedial instruction for children of approximately normal ability and behavior who fall short of expected achievement, nor did it apply to the differentiation of curriculum that takes place for that large group of children who are slow in their learning process but not seriously below average. (p. 38)

Martens believed special education was “reserved for those physical, mental, or emotional deviations that demand some radical change in the school program” (p. 38).

Based on these guidelines, Martens stated,

[S]pecial education for the handicapped may in some cases involve full-time special instruction at school. In other cases it may be limited to an hour or two per day (more or less) of specialized instruction under a special teacher, with membership in a regular class for the rest of the day (pp. 38-39).

At the end of Martens’ analysis there was a list of ten recommendations for the improvement of special education. These recommendations include the following: all exceptional children should be identified and request to attend school; all students deserved appropriate educational services starting at an early age through adolescence in either school, home or hospital; each state should offer leadership, guidance and funding to local districts as they create special education programs; and the state must
promote the development of highly qualified personnel so that these students receive quality instruction and are prepared with life skills. In addition she added, “good legislative practice can and does change but that the principles that have just been proposed are offered as a bill of rights for exceptional children and as basic tenets for state legislation” (pp. 39-40). As a result of Martens research, more extensive state legislative involvement in planning and funding special education programs was implemented which became an important development in special education policy by the 1950s (Sealander, 2003).

The Brown v. Board of Education case set the groundwork for equal education opportunity for students with disabilities (Pardini, 2002; Lunenburg & Ornstein, 1996). Brown v. Board of Education (1954) was the culmination of five court cases across the nation dealing with segregation of public schools. In the original Brown case, the plaintiffs were parents of an African American elementary student in Topeka, Kansas. The Brown family brought suit against the Topeka Board of Education because of the racial segregation policy of the public school district. The original case was heard in the United States district court for the District of Kansas: the three-judge panel found segregation of Negro students detrimental to their education. According to Brown v. Board of Education (1954) the district court did not provide relief in the case citing, “Negro and white schools were substantially equal with respect to buildings, transportation, curricula, and educational qualifications of teachers” (p. 1). This case was later heard in the United States Supreme Court. In a unanimous decision, the Supreme Court held separate cannot be equal in education. The Supreme Court based its ruling on the Equal Protection Clause of the 14th Amendment to the United States
Constitution. The Supreme Court ruled the establishment of state laws requiring separate facilities for schools was unconstitutional. *Brown v. Board of Education* (1954) extended educational rights to minorities and gave advocates for students with disabilities new hope for equitable educational services. The case contended that the practice of separate but equal public schools for white and negro children deprived negro children of equal protection of the laws. The Supreme Court determined segregation of public schools was a denial of the equal protection of the laws. *Brown v. Board of Education* (1954) voided the earlier decision from *Plessy v. Ferguson* in 1896 (Kauffman, 2007) where the court held that separate but equal accommodations did not violate the 14th Amendment. In the *Plessy v. Ferguson* case the court upheld a Louisiana statute providing railway companies to provide equal but separate railway cars for white and Negro races (Yudof, Kirp, Levin & Moran, 2002). This landmark decision paved the way for the Civil Rights Act of 1964, thus allowing equal treatment and protection for all citizens regardless of race, religion, national origin and sex. It was later expanded to include disability and age (Levoy, 1997).

Social and educational initiatives helped shape the development of special education during the 1960s. Mackie’s (1969) research indicated, from 1958 to 1966, special education services saw the number of identified students double from approximately 976,000 to 2,106,000. The most extensive change was seen in the involvement of the federal government during the administration of President Kennedy. It was during this period, public consciousness helped shape policy relating to disabilities. The National Association for Retarded Children (NARC) also became the most influential advocacy group for the disabled. The NARC received the support of
powerful public figures, and the president’s Panel on Mental Retardation allowed them to have central authority concerning rights and policy applied to disability (Osgood, 2005).

In 1963, a bill of rights for children with mental retardation was published, which was a restatement of the Educational Bill of Rights that was passed in 1953. The main focus of the new publication was to bring every child with mental retardation into the special education programs in the public schools (Woolley & Peters, 2010). In 1963, Congress passed PL 88-156 and PL 88-164 which were comprehensive acts creating a Division of Handicapped Children and Youth within the US Office of Education. In addition, funding was authorized for on-going and widespread training of special education personnel and support was offered for more research and research facilities in the areas of disabilities (PL 88-156, 1963; PL 88-164, 1963). On April 11, 1965, President Lyndon B. Johnson signed the Elementary and Secondary Education Act (ESEA) or PL 89-10. This law provided for educational programs for underprivileged rural and inner city children. The ESEA was amended in 1966, 1967, and 1970 providing the establishment of agencies and funding for handicapped children (Cross, 2004; Jennings, Stark Rentner, & Kober, 2002; Robelen, 2005; Department of Health, Education, & Welfare Office of Education, 1969). As the 1960s came to an end, there was a significant commitment by the federal government for planning, funding, educating, and caring for persons with disabilities.

Two court cases dealing with the rights of students with disabilities were brought to trial in 1971 and 1972. The first case, *Pennsylvania Association of Retarded Citizens (PARC) v. Commonwealth of Pennsylvania* (1971) was a lawsuit against the
Commonwealth of Pennsylvania ordering access to education for all handicapped children. Pennsylvania did not allow students with mental retardation to attend school if they had not attained a mental age of 5 years old by the time they would normally enroll in first grade. Parents of handicapped children had to seek private schooling for their children in Pennsylvania (Biklen, Ferguson & Ford, 1989). The United States District Court ruled in favor of PARC. The second case, *Mills v. Board of Education* (1972), centered on the denial of a publically supported education for seven school age children in the District of Columbia public schools. The seven students were not afforded the right to attend school because they were labeled as behavioral problems, mentally retarded, emotionally disturbed, or hyperactive. The plaintiffs alleged the District of Columbia public schools denied the seven students their right to an education. The plaintiffs claimed they could profit in the regular classroom with supportive services or in special classes designed for their special needs. District Judge Joseph C. Waddy ruled the plaintiffs were entitled to relief in this case. The District of Columbia public schools required students attend public school if they could mentally or physically profit from attendance. The board of education is required to allow students who can benefit from education the opportunity to attend school. The court cases of PARC and *Mills* established the premise that all children can profit from education (Mark, 2009; Yudof et al., 2002; Martin, Martin, & Terman, 1996; Melnick, 1995).

The US Congress Select Subcommittee on Education held hearings in 1975 identifying millions of children with disabilities. These students were being excluded from schools across the United States. About 3.5 million students with disabilities were not being given an appropriate education and approximately one million more received
no educational opportunity.

In 1975, President Gerald Ford signed the Education for All Handicapped Children’s Act (EHCA). According to Sealander (2003), prior to 1975, supporters for EHCA claimed most of the handicapped children in the US had been denied access to public education. This piece of legislation mandated a free and appropriate education for all children with disabilities in every state in the US. Disabled students were also given rights to nondiscriminatory testing, evaluation, educational plans designed for their individual needs, and an educational setting in the least restrictive environment available. Parents and students were also given the opportunity to challenge decisions through due process procedures (P.L. 94-142, 1975).

In 1982, the Supreme Court issued a ruling in the Board of Education of the Hendrick Hudson School District v. Amy Rowley (1982) expressing the intent of special education services. In the decision, the court determined the intent of Education for All Handicapped Children Act of 1975 (EDHCA) was the provision of education by the utilization of special services. The EDHCA is not a guarantee of student academic achievement level: EDHCA mandates students with disabilities have the same equal access to education as those students without disabilities. In a subsequent court case, Florence County School District Four v. Shannon Carter (1993) the court addressed the degree of educational benefit for a student. Shannon Carter was a ninth grade student in the Florence County District Four schools in South Carolina. Shannon entered high school functionally illiterate and performing on a fifth grade reading level. During Shannon’s ninth grade IEP meeting the district proposed yearly achievement goals in her reading as an increase from the 5.4 to a 5.8 grade level and in math from 6.4 to 6.8
grade level. In summary Shannon’s reading and math would progress four months during a year of special education service. Shannon’s parents appealed to the school that Shannon's IEP and goals were inadequate and requested goals that would allow her to graduate high school at a high reading level. The school district refused to amend the IEP. Shannon’s parents placed her in the Trident Academy, a private school specializing in the education of students with learning disabilities; Shannon’s parents sued the Florence County School District for reimbursements of tuition payments made to the Trident Academy. Shannon’s case was eventually heard in the US Supreme Court where the Court ruled in favor of Shannon's parents. The justices held that if the public school defaults on the appropriate education for a child and a private institution provides that appropriate education than the parents are entitled to reimbursements of tuition by the school district. The court proposed the need for maximization of benefit (Florence County School District Four v. Shannon Carter, 1993).

The Rowley and Carter court cases began legislative educational reform. The Individuals with Disabilities Education Act Amendments of 1997 (IDEA, 1997) addressed academic progress for special education students. Congress acknowledged the fact that EDHCA had provided opportunity for handicapped children by providing them with a free and appropriate public education (FAPE) or P.L. 103-117. However, the intent of EDHCA was to gain access to public schools for special education students. IDEA (1997) addressed the academic achievement of special education students. Congress found that since the enactment of EDHCA, academic rigor was compromised, and in general, expectation for special education students achievement was low.
Special education programs were intended to support students with special needs. In order for students to thrive and achieve in the 21st century, access to the general curriculum was essential (Murnane & Levy, 1996). Horn and Tynan (2001) proposed that special education had ceased to be a place where students were challenged to be active participants in American society, and it had now become a “label” entitling students in a lifetime of special treatment. The enactment of IDEA 1997 mandated access to and progress to the regular education curriculum, and it provided progress for the inclusion of special education students in the assessment of standardized testing instruments. IDEA (1997) also provided for the coordination of other federal programs with special education including Title I school-wide programs in order to develop a more comprehensive educational setting (Villa & Thousand, 2000; McLaughlin & Verstegen, 1998). Prior to 2000, the courts focused on the provision of adequate services provided by schools to students with special needs. Now the courts are in charge of a new set of guidelines not only providing mandates for services but also illustrating the need for academic growth and achievement.

IDEA (1997) was the first piece of legislation tying academic success to state and district standardized assessments. This was an attempt to improve the academic outcome for students in special education. Nolet and McLaughlin (2000) stated the reauthorization of IDEA 1997 “intended to insure that students with disabilities have access to challenging curriculum and that their educational programs are based on high expectations that acknowledge each student’s potential and ultimate contribution to society” (p. 2). IDEA (1997) sought to raise the achievement levels of students in the special education setting. Congress established the requirement that students with
disabilities have access to the general curriculum. With this change, students with disabilities were to be educated with the same curriculum as students without disabilities. Congress went by requiring students with disabilities to make progress in the general curriculum (34 CFR § 300.347(a)(1)(i)). According to Hitchcock, Meyer, Rose and Jackson (2002) the right to the general curriculum consisted of three interrelated stages: access, involvement, and progress. Access refers to the accessibility a student with disabilities has to the general curriculum. Involvement is the continuing participation in the general curriculum. The last stage of progress relates to the evaluation of not only student learning and assessments, but also the fidelity of assessment and participation in the general curriculum.

Schools face pressure from federal and state education departments. Educational accountability for schools and students has been a driving force of educational reform in the nation. The purpose of education is to give individuals equal opportunity to be successful in life. Over the past 15 years, federal and state governments have set into motion reforms changing the landscape of education. One of the most prominent reforms in education over the past 10 years has been the No Child Left Behind legislation. No Child Left Behind Act of 2001 (PL 107-101) places sanctions for low performance on schools, and these schools are held accountable for student learning by the use of standardized tests. If students do not reach certain benchmark scores on standardized tests, school staff can be replaced. No Child Left Behind (NCLB) holds states accountable for students at the proficient level measured in all subgroups.
In a 2001 report from the Center for Educational Policy, 34 states used a high stakes exit level test as a high school graduation requirement for students. Federal law mandated the inclusion of special education students in high stakes testing (34 CFR, 2003). Prior to the enactment of NCLB, special education students could be exempt from standardized testing through the special education decision-making committee. NCLB required the testing of all students. Schools may test three percent of the student population with alternative based assessments. These alternative based assessments cover essential curriculum elements of grade expectations. NCLB required all students to be tested at their grade level standard (34 C.F.R., 2003).

The federal government rates schools on their academic progress and sustainability. The federal plan for school accountability utilizes some of the same mechanisms and benchmarks as the Texas accountability system. According to the 2006 Adequate Yearly Progress (AYP) Guide “all public school districts, campuses, and the state are evaluated annually for adequate yearly progress” (Texas Education Agency [TEA], 2006, p. 8). “The Texas AYP plan, accepted by the United States Department of Education [USDE]) in July, 2006, meets the requirements in NCLB, and provides a mechanism for evaluating district and campus AYP in 2006” (TEA, 2006, p. 8).

Indicators for AYP include (a) reading and language arts, (b) mathematics, (c) attendance rates, and (d) graduation rates. The components assessed for AYP are performance and participation in reading language arts and mathematics. AYP is evaluated by measuring the following student groups: African American, white, hispanic, economically disadvantaged, special education, limited English proficient (LEP), and a
student group composed of all students. Grade levels examined for AYP are third through eighth and tenth. The standards for AYP are based on a gradual percentage yearly increase until 2013-2014, in which the AYP passing expectation is 100% in reading and mathematics. In order to meet AYP, schools and districts must have at least a 70% graduation rate, a 90% attendance rate and at least 95% of all students in accountable grades participating in the Texas Assessment of Knowledge and Skills (TAKS) test administration (TEA, 2006, ESC 20, 2006; Yell, 2006).

When campuses or districts do not meet federal AYP, sanctions are levied against the district and school (Maleyko, 2011). According to the No Child Left Behind Act (2001), a school missing AYP for two consecutive years in the same indicator must begin Title I, Part A school improvement. Mandated school improvement consists of: (a) a school-wide improvement plan; (b) parent notification of the campus school improvement status; (c) parent notification of what area or areas the campus missed in AYP; (d) parent notification of the campus plan for improvement; (e) parent notification of ways parents can become involved in school improvement; (f) parent notification of options under school choice; (g) the local education agency (LEA) must offer school choice and transportation; and (h) the LEA must establish a peer review process to assist in the revision of the campus plan which includes parental involvement and campus budget revisions to more effectively allocate resources. A school missing AYP for three consecutive years in the same indicator must begin a system of regimented school improvement (No Child Left Behind Act, 2001).

In 2004 Congress reauthorized NCLB. This reauthorization required higher accountability standards for schools. The 2004 NCLB mandated, schools to link content
standards directly to students' outcomes; standardized testing in reading and math in grades 3-8 and at least once in high schools; schools to give detailed report cards of school achievement towards AYP goals; required all teachers and para-professionals to be highly qualified; and it established strict measurable parental involvement goals. The reauthorization also gave students viable options to transfer from schools not meeting AYP to schools meeting AYP (No Child Left Behind Act, 2004).

School improvement and sustainability is always at the forefront of concern for schools. Schlechty (2002) states, “growth and continuing improvement and the ability to respond to changing demographics and market conditions are all matters that must be taken into account when assessing the performance of organizations and the people in them” (p. 93). Schools must be able to adjust the school organizations to match the requirement of federal and state educational agencies and provide the greatest opportunity for all students.

Call for Intervention

In the 1986 EHCA amendment, special education services were extended to include children in the three to five year age range and add traumatic brain injury and autism as qualifying conditions (Nelson, Rutherford, Center, & Walker, 1991; Individuals with Disabilities Act, 1990). In the 1990 reauthorization, the name was changed to Individuals with Disabilities Education Act or IDEA. Parents’ rights and a functional behavioral assessment for students with behavioral problems were mandated in the IDEA amendments (1997). The 2004 reauthorization of IDEA provided for the use of RtI (response to intervention) as an approved method for special education qualifications.
The 2004 reauthorization also called for a closer alignment with the No Child Left Behind Act (NCLB) (US Department of Education, 2010).

High Stakes Testing in Texas

Texas began to utilize high stakes testing in the 1979-1980 school year. The 66th Texas State Legislature passed Senate Bill 350, which required the Texas Education Agency (TEA) to “adopt and administer criterion-referenced assessment instruments that measure minimum basic skills in reading, writing, and mathematics” (Sherman & Jones, 2005, p. 1). In the 2002-2003 school year, the state introduced the Texas Assessment of Knowledge and Skills Test (TAKS). The TAKS aligns directly with the state’s curriculum (Sherman & Jones, 2005). Texas schools are held accountable to the state by their students’ test scores. The TEA rates schools with accountability levels derived from indicators aligned with the TAKS. According to the TEA Accountability Manual (2006) students are tested in Grades 3 through 11. Subjects are tested in reading, English language arts, science, social studies, and mathematics. Not every subject is tested every year. A title is given to each campus reflective of student achievement on the TAKS test. Ratings are based on the percentage of students passing each section of the TAKS. “Performance is evaluated for all students and the following student groups: African American, Hispanic, white, and economically disadvantaged” (TEA, 2006, p. 12). TEA also rates schools on the number of special education students passing the state developed alternative assessments, high school completion rates and high school drop-out rates. An Exemplary rating for a school means the campus has achieved the highest recognition the TEA can award. In order
to receive the Exemplary rating, 90% of all students and student groups must pass the TAKS test. The rating of Recognized is awarded to campuses having 70% of all students and student groups passing the TAKS test. Campuses earning the Academically Acceptable label have student groups scoring between 35% and 60% on various subject areas.

In 2012, Texas schools are required to use a new test and standards for students enrolled in public schools. The State of Texas Assessment of Academic Readiness (STAAR) test assesses the same subjects and grade levels as the TAKS once did in Grades 3-8. In high school, students are assessed with 15 end-of-course (EOC) exams covering individual subject areas. High school EOC tests are given to students enrolled in Algebra I, geometry, Algebra II, biology, chemistry, physics, English I, English II, English III, world geography, world history, and United States history (Texas Education Agency, 2013).

The STAAR tests are designed to be more in depth and rigorous than its predecessor the TAKS. Students are required to work through multistep problems and think at a higher level. With the increased difficulty of the test there are also high standards students must attain to be promoted in certain grade levels and also to graduate high school (Marsilio, 2011). Students must make a minimum passing score on the third grade reading to be promoted to the fourth grade. Students in the fifth and eighth grade must pass both the reading and math assessments to be promoted (Texas Education Agency, 2013).

Texas students have three graduation options. The minimum graduation plan is intended for students going directly into the workforce or to a trade school. Students on
the minimum high school graduation plan are required to take four English classes, three math classes, four social studies classes and three science classes. The recommended high school plan requires students to take four years of English, science, social studies, and math. Students graduating on the recommended graduation plan are students that are planning on going directly into the work force, attending a trade school, attending a community college, or attending a four-year university. The recommended high school plan allows students a variety of options after high school. The distinguished high school plan requires students to take four years of English, science, social studies, and math. The students completing the distinguished plan also must complete three measures of rigorous requirements. These three measures may be six semesters of college classes or three special projects approved by the high school. Students graduating on the distinguished high school program are those students planning on attending a four-year university directly after high school. High school students will have to meet a minimum score on each of the three English/reading STAAR tests and a minimum combined score comprising of the sum the three English and three reading tests along with minimum scores on the history, math, and science tests and a minimum combined score on the sum of the history, math, and science tests. Students STAAR scores along with additional criteria determine the students graduation plan (Texas Education Agency, 2012).

Identification and Primary Types of Intervention

Identification

Prior to the reauthorization of Education for all Handicapped Children Act (EHCA),
students with learning disabilities gained access to special education by the use of a wait to fail process and the use of the discrepancy-testing model. All students began their educational career in the regular classroom with regular mainstream teaching practices. Students having difficulty often attended tutoring from classroom teachers and often were retained at an early age. If students continued to fail, they were then referred to special education. After being referred to special education, students were then tested to determine if they qualified for special education services. States and school systems established guidelines for special education qualifications. The most common practice for qualification was the discrepancy model. The use of the discrepancy model was used to determine if a student qualified for a specific learning disability (SLD) (Jimerson, Carlson, Rotert, Egeland, & Stroufe, 1997).

The first step in the discrepancy model identification process is the administering an intelligence quotient (IQ) test to determine a student’s intelligence capacity. The second step is an ability test: students are given an ability or achievement test to determine their current level of knowledge. If a large enough discrepancy between their IQ and ability is present, they would qualify for services in special education as a learning disabled student (Jimenez, 2010).

**Vygotsky’s Learning Theory**

Lev Vygotsky’s theory of social development focuses on the connections of people and their sociocultural environments (Crawford, 1996). Vygotsky’s theory of learning and development studied how people were interconnected by experiences and how they interacted in society. Vygotsky believed people used social interactions of
speech and writing to function in society. As these tools of speech and writing were developed, higher levels of cognitive skills developed (Cole, 1997; Vygotsky, 1987). Vygotsky believed social interaction played a primary role in cognitive development. Vygotsky (1978) concluded “Every function in the child’s cultural development appears twice: first on the social level (interpsychological), and later, on the individual level (intrapsychological); first between people and then inside the child” (p. 57). Two of Vygotsky’s main principles are the more knowledgeable than other (MKO) and the zone of proximal development (ZPD). The MKO relied on a person with knowledge or expertise of a concept, task, or concept teaching a person with lesser knowledge. Almost all major corporations, militaries, and institutions of learning currently use this principle of teaching and learning. Vygotsky (1978) also theorized the zone of proximal development. The zone of proximal development is the gap between what children can do on their own and what they can do with the support and guidance of an adult. The development of skills in children utilizing the zone of proximal development was vital to full social interaction in a culture. The attainability of skills that can be developed with the guidance of an adult surpasses what a child can learn alone. Roosevelt (2008) concludes a child completing a task with the help of an adult has a better chance of completing the task independently in the future.

**Perry Preschool Project**

In the early 1960s, David Weikart applied Vygotsky’s theory of learning through social interaction with an experiment involving inner city children in Ypsilanti, Michigan (as cited in Jacobson, 2004). The south side of Ypsilanti was segregated and comprised
of poor African American families. The experiment took place in the neighborhood surrounding the Perry Elementary School. Perry Elementary School was a school like many poor African American schools across the nation. Many of its students failed to learn even the basic principles and skills of education (High/Scope Educational Research Foundation, 2007). The lack of educational attainment by African American schools was usually attributed to poverty, lack of parental support, and lack of parental educational attainment. Educators across the nation assumed the poor African American students were not smart enough to learn, and they were not able to succeed in school.

Weikart felt there was not anything wrong with the poor African American students and their capacity of learning; he believed the educational system did not adequately teach these students (as cited in Hanford, 2009). Weikart set out to establish a preschool for these students focusing on preventing school failure. Weikart believed if you raised the IQ of these students they would have an advantage in kindergarten and possibly circumvent school failure. Many experts disagreed with Weikart and informed him that disadvantaged three to five year olds were too young to learn.

According to Hanford (2009), prior to the beginning the project, Weikart and his team of four teachers and research assistants canvassed the community looking for families to volunteer to take part in the experiment. All but three of the families asked to participate in the experiment volunteered. In October of 1962, the Perry Preschool Project began. Students were selected at random for the project, and control groups were established.
Preschool for low-income inner city children was a new concept for not only the students but also the teachers and the nation. White children from middle class and affluent backgrounds attended nursery schools focused on social development. The focus in the Perry Preschool was on cognitive development. Teachers at Perry Preschool worked on higher-level questioning with their students. Activities were designed to be hands on and fun. For two and a half hours a day the students learned through play. Most students attended the program for two years. Teachers visited the homes of their students and worked with the parents and the students at home. The teachers wanted to send the message to the families that their children had a chance to learn and be successful in education.

After two years in the program, the students IQ scores improved. Students averaged a 15-point gain in their IQ achievement. The Perry Preschool Project was a success. Students benefited and went from the low achieving range in intelligence to the average range. Students served through the project were not destined for the special education classroom.

By 1964, many similar projects began in states across the nation. In 1965, President Lyndon B. Johnson announced a new program, Head Start (www.headstart.com). Head Start was a federally funded preschool program aimed at solving the problem of poverty in the nation. Head Start focused on more than cognitive gains for poverty-stricken children; it also included nutrition and health services. Head Start™ was also an employment program where the parents of the students were often hired as teachers.
Studies of children enrolled in Head Start showed a gain of 10 points in IQ and the initial appearance showed Head Start as a success. However, later studies indicated student IQ gains appeared to fade-out by the time the students reached seven to eight years of age. Because of the change in IQ scores, President Richard Nixon halted any future funding increases for Head Start.

Weikert and his staff also were seeing the effects of IQ fade-out (Barnett, 1996). However, Weikert and his staff's original goal was not focused on IQ alone. The Perry Preschool Project was established to prevent school failure, and the initial raising of the students' IQ was only a means to give students an advantage when entering kindergarten.

In 2007, the HighScope® Educational Research Foundation, headed by Weikert, conducted follow-up research on the participants of the Perry Preschool Project. The study group out-performed the control group in all areas examined. According to the HighScope® (2010) website (www.highscope.org), “The study found that adults at age 40 who had the preschool program had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school than adults who did not have preschool” (p. 1). By age 40, the students attending the preschool were succeeding in life much better than those who did not attend preschool. The Perry Preschool Project focused on early cognitive intervention with positive benefits in later life opportunities, behaviors, and experiences (Shore 1997; Shonkoff & Phillips, 2000).
Reading Recovery

In the 1970s, Clay implemented one of the effective first early literacy intervention programs, reading recovery (Askew & Frasier, 1997; Johnston & Allington, 1991; Lyons, 1997; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Reutzel, 1999; Snow, Burns, & Griffin, 1998). Reading Recovery focused on intensive early intervention for the lowest performing students after they completed one year of school. Students were given 12-20 weeks of individualized instruction focused on improving their reading skills and closing their reading gap (Clay, 1987). Reading Recovery also sought to reduce the number of students needing remedial reading instruction and special education services in their later years (Clay, 1987; Lyons, 1997).

Reading Recovery originated in New Zealand and has been implemented in the United States, Canada, Great Britain, and Australia (Reynolds & Wheldall, 2007). Columbus, Ohio initiated Reading Recovery in the US in 1984 (Lyons & Beaver, 1995). Elbaum, Vaughn, Hughes and Moody (2000) described Reading Recovery as the “most widespread teacher-implemented, one-to-one intervention currently in use in schools in the US” (p. 606).

Once students attain the same reading abilities of their peers they are discontinued or graduate the program. In house data showed a discontinuation rate of the Reading Recovery program at around 80%. Lyons (2003) reported the discontinuation rate at 81% between the years 1984 to 1997, and Gomez-Bellenge, Rodgers, and Schulz (2005) reported a national discontinuation rate of 76% from 2003 to 2004. Other studies were completed focusing on students who started the program and not discontinued. Lyons (2003) reported that 60% of the students who started the
program, actually met the exit requirements, and Gomez-Bellenge et al. (2005) reported 59% of the students served were actually discontinued. Data from a 15-year implementation in the Madison, Wisconsin school district showed 57% of students were successfully discontinued (Esposito, 2004). Students completing the program and considered discontinued were less likely to receive services in special education. Recovery demonstrated an example of a successful early intervention for struggling readers (Reynolds & Wheldall, 2007).

Response to Intervention

Response to intervention is an educational approach focusing on individualized learning needs and targeting them with scientific based instructional practices in a systematic approach to instruction. Historically, there are two general methodologies of response to intervention: a problem-solving technique and a standard-protocol approach. (Fuchs, Mock, Morgan, & Young, 2003).

Bergan (1977) developed the first problem-solving technique to address behavioral consultation. Behavioral consultation consists of four stages: (1) identification of the problem; (2) evaluation of the problem; (3) plan implementation, and (4) plan evaluation. The aim of the behavioral consultation is to identify the problem in clear and simple language, identify the key environmental issues of the problem, develop and apply an intervention plan with fidelity and integrity, and finally evaluate the results of the plan (Bergan & Kratochwill, 1990).

The standard-protocol approach is the use of validated treatment protocols used with students experiencing difficulties in either behavioral or academic problems. In the
standard protocol technique, students are instructed with scripted lessons addressing basic needs of instruction or behavior. This approach has been proven most effective with students with poor skills and students not exposed to instruction (Clay, 1987). Standard-protocol methods have shown positive outcomes in the area of reading instruction (Torgesen, Alexander, Wagner, Rashotte, Voeller, & Calloway, 2001). This approach has been used almost exclusively by researchers but only limited by school practitioners (Fuchs et al., 2003).

Some of the present day response to intervention approaches utilize a combination of the problem-solving approach and the standard-protocol approach. This combined approached is referred to as a multi-tiered response to intervention approach. By utilizing a combination of the two previously mentioned approaches the multi-tiered approach is most adaptable to the school setting (Barnett, Daly, Jones, & Lentz, 2004). The multi-tiered approach increases intensity of the intervention instruction only after the student does not show adequate skill growth with the current intervention (Brown-Chidsey & Steege, 2005; National Association of State Directors of Special Education, 2005; Reschly, Tilly, & Grimes, 1999).

The Reading First model of intervention is a multi-tiered response to intervention model approach used to maximize student learning (National Center for Response to intervention, 2010; RtI in Texas, 2008). Response to intervention is a regular education approach targeting instructional interventions for individual academic needs of students. Response to intervention is currently an approved approach for determining special education eligibility (Hoover, 2010).
Response to Intervention Models

The three-tiered reading model for response to intervention uses three tiers in its reading intervention model. It is designed to meet the instructional needs in reading of students in kindergarten through third grade. The model is categorized by three tiers of intervention Tier I, Tier II and Tier III. A trained interventionist delivers the instruction (Vaughn Gross Center for Reading and Language Arts, 2005).

Tier I is core reading instruction (Hughes, 2011). All students participate in Tier I for a minimum of 90 minutes of instruction daily (National Center for Response to Intervention, 2010; RTI in Texas, 2008; Vaughn Gross Center for Reading and Language Arts, 2005). Instruction is focused on the national reading panel's recommendation for an effective reading program. Tier I instruction includes research-based curriculum containing phonemic awareness, phonics, fluency, vocabulary and comprehension instruction (Hughes & Dexter, 2011; National Reading Panel, 2000). Tier I instruction focuses on the basic needs of the students in the classroom. Most students in the classroom receive instructional needs in the Tier I setting from the regular classroom setting. During Tier I, the regular classroom teacher is the interventionist. All students in Tier I are monitored for performance three times a year.

Students not successful in Tier I instruction are moved to focused intervention. The Tier II intervention focuses on the same skills taught in Tier I but not mastered by the students. Students are grouped homogeneously according to the skills they need reinforced, and instruction targets deficient skills. Tier II instruction is given for a minimum of 30 minutes daily. The interventionist for Tier II may be the classroom teacher or another trained interventionist. Group size for Tier II should be no larger than
one teacher to five students. All Tier II students are monitored twice a month to ensure adequate progress on targeted skills (Vaughn Gross Center for Reading and Language Arts, 2005).

Students not progressing in Tier II move to Tier III in the intervention process. In Tier III, students are given an additional 30-minute intervention time daily focusing on inadequate skills. Students participating in Tier III receive reading instruction for the core 90-minute Tier I instruction daily, 30-minute Tier II instruction daily and 30-minute Tier III instruction daily. Tier III is a more specific and individual needs-based instruction. Group size for Tier III instruction should be one teacher to no more than three students. All Tier III students are monitored twice a month to ensure adequate progress on targeted skills (Vaughn Gross Center for Reading and Language Arts, 2005).

The three-tiered reading model provides a platform for specific instructional interventions for struggling students. It focuses on fidelity to the process as students progressed from one tier to another and provides specific intervention for student needs. The three-tiered reading model utilizes data from both progress monitoring and benchmark testing to drive decisions for student needs. With the provision of specific professional development and interventionist training, the three-tiered intervention model provides a mechanism for struggling students to succeed in the regular education classroom.

In 2003 Texas requested for a Reading First grant. Texas was awarded approximately $532.5 million for a period of six years. The Texas Education Agency adopted the three-tiered reading model as its RTI model ("An evaluation...", 2007). The Texas Education Agency partnered with four entities to incorporate an implementation
structure for Texas Reading First grant. A key component of the implementation of the Texas Reading First grant was the employment of 66 regional technical assistance specialists (RTA). The RTA's primary task was to provide assistance and guidance to all Texas Reading First campuses. The RTA's spent a substantial amount of time at each school, training key personnel. ("Children's learning institute," 2012).

The University of Texas Health Science Center's Children's Learning Institute (CARS) and the Vaughn Gross Center for Reading and Language Arts (VGCRLA) at University of Texas, Austin, provided statewide and campus technical assistance to schools participating in the Texas Reading First grant. CARS and VGCRLA provided professional development to Texas Reading First campuses and Regional Technical Assistance Specialists ("Children's learning institute," 2012). Professional development was provided in the form of institutes, online instruction and individual campus visits ("An evaluation of," 2007). The Texas Institute for Measurement, Evaluation, and Statistics (TIMES) at the University of Houston provided assistance with an evaluation plan for the grant ("Children's learning institute," 2012).

The University of Pittsburg model also uses three tiers of intervention. O'Conner, Harty and Fulmer (2005) studied the effects of an intervention model piloted in two Baltimore city schools. The model incorporated a three-tiered system of reading intervention. The intent of the intervention study was to focus on phonemic awareness and letter knowledge in kindergarten and first grade in order to reduce the number of students identified as learning disabled in reading. The researchers determined intervention support should extend into the third grade, and the intervention was piloted for four years.
The first tier of the intervention focused on professional development for classroom teachers. Teachers were given professional development based on the findings from the National Reading Panel report on subgroups (National Reading Panel, 2000). The first year of professional development concentrated on the kindergarten and first grade staff only. Each year, the professional development was extended to the next year. By year three, all staff members working with kindergarten through third grade were receiving professional development. The professional development also focused on interpreting assessment results from the Woodcock Reading Mastery Tests-Revised-Normative Update. The training in understanding assessments allowed for teachers to evaluate and understand student educational needs. In order to prevent overidentification of Tier II students, the first assessment was administered after three months of classroom instruction. Teachers received detailed printouts of all student benchmark data. These printouts allowed the teachers to cater their instruction to student needs.

Students not progressing in Tier I were selected for intervention in Tier II. Tier II intervention was 1 to 15 minutes of instruction in groups of two to three students three times a week. The same skills were taught in Tier II as were taught in the whole group instruction. However, in Tier II, the teacher was able to pace the instruction for mastery by individual students. Some students being served by Tier II interventions were able to catch up to their peers and needed no other intervention. Students not able to catch up to their peers received more intense intervention.

Students continuing to struggle in Tier II interventions moved to Tier III interventions. Tier III intervention was given to students in a group of no larger than one
teacher to two students. The students received instruction five days a week for 30 minutes a day. The researchers viewed the Tier III interventions as similar to special education. However, 40% of the students receiving the Tier III interventions were able to maintain average performance through third grade.

In a study by O’Conner et al. (2005), 18 students received Tier II interventions. Half of those students were in the average range in skills and fluency by the end of second grade. Two additional students reached the average range by January of their third grade year, and they maintained their skills until the end of their third grade year. Using historical data from the same schools and teachers, 15% of the students qualified for special education. After the four-year study and implementation of this particular three-tiered model, 8% of students qualified for special education (O’Conner et al., 2005).

The Heartland Area Education Agency in Iowa followed the education for all handicapped protocol for special education referral and placement procedures. Students were referred to special education when they began to struggle in academic subjects. This is commonly referred to as a “refer-test-place” model, and as students failed, they were referred by their teacher, tested using a battery of tests and placed into special education if qualifying. The tests focused on the discrepancy between student's achievement and IQ (Jimerson et al., 1997; Machek, 2010). The educational leaders in Iowa acknowledged a change in practices could benefit all students. Iowa moved to a problem-solving model in order to maximize educational opportunities for students with disabilities (Jimerson et al., 1997). This reform movement was headed by the Iowa Department of Education and the local area education agencies. The Iowa Department
of Education gave flexibility to the area education agencies on the development and
design of the programs. The Heartland Area Education Agency 11 in Johnston, Iowa,
implemented a four-tier, RtI approach. Heartland’s model focused on instruction for all
students. It utilized a support for integrated special education instruction and regular
education with a foundation of RtI within the instructional model (Grimes & Tilley, 1996;
Reschly & Ysseldyke, 2002). The model used a problem solving approach of instruction
and support. The first tier of intervention relied on the teacher to make accommodations
in the regular classroom. The second step was for teachers to work with other teachers
to develop and implement strategies to resolve the problems. Heartland Area Education
associates would work with teachers on strategies to remedy the problems if the first
two steps failed. Only after the first three steps failed would the special education
referral process be considered (Ikeda, Raun-Blakeslee, Niebling, Gustafson, Allison, &
Stumme, 2007.)

The key to Heartlands’ approach to problem solving was determined within each
of the four steps. Four separate conclusions must be made. The first step was the
problem must be defined; second, there must be an understanding of why the problem
was occurring; third, an intervention must be designed and implemented; and, finally the
intervention must be evaluated (Tilly, 2002).

Poverty and Student Achievement

According to Brown, Vandivere, Lindberg, Boggs, Porter, and Williams (1999)
children living at or near the federal poverty line were more likely to experience
difficulties in school. Poor students were more likely to have a high rate of mobility than
middle or upper class students (Hodgkinson, 2004; Crowley, 2003). Crowley (2003) stated, “mobility is a contributing factor associated with deficient academic school performance” (p. 23). Children in poverty also had a greater risk of grade retention in school. In a study by Byrd and Weitzman (1994) found a 95% confidence interval among the relationship between grade retention and poverty. Grade retention had a negative long-term effect on students potential to complete school (Byrd & Weitzman, 1994). Poverty stricken students had a greater chance of receiving services in special education (Ainsworth, 2002; Artiles, Aguirre-Munoz, Abedi, 1998; Coutinho, Oswald, & Best, 2002). Coutinho et al. (2002) conducted a study using data from the National Center for Educational Statistics (NCES) Common Core of Data and found a direct association between poverty and the identification of students with a learning disability. Coutinho et al. (2002) chose nine sociodemographic variables as the predictor variables for their study. The nine predictor variables were student teacher ratio, per-pupil expenditure, percentage of children enrolled who were considered at-risk, percentage of enrolled students who were non-white, percentage of students enrolled who were LEP, median housing value for houses (in $10,000 units), median income for households with children (in $100,000 units), percentage of children in households below the poverty level, and percentage of adults in the community not completing 12th grade and did not earn a high school diploma. Using the nine sociodemographic variables as predictor variables and the special education qualification of learning disabled as the response variable, Coutinho et al. (2002) found a correlation between a district’s sociodemographic conditions and its proportion of learning disabled students.

According to Hodgkinson (1995), poverty was at the center of school failure.
Hodgkinson (1995) stated, “poverty reduces the quality of the lives of all children, regardless of race or ethnicity” (p. 178). Poverty was a risk factor for student failure.

**Student Mobility and Student Achievement**

In studies of school achievement, students who change schools often were more susceptible to poor nutrition and health, a higher rate of grade retention, and academic failure in the classroom (Wood, Halfon, Scarlata, Newacheck, & Nessim, 1993). Long (1992) reported students with a high mobility rate usually came from a poor household where the parents were unemployed and lack a high school diploma. Poor families moved 50% more frequently than non-poor families (US Bureau of Census, 1989). Mobile students were three to six times more likely to repeat a grade than non-mobile students (Simpson & Fowler, 1994; Wood et al., 1993). Five separate studies (Benson, Haycraft, Steyaert, & Weigel, 1979; Ingersoll, Scamman, & Eckerling, 1989; US General Accounting Office, 1994; Kealy, 1982; Schuler, 1990) found mobility has a negative effect on student achievement.

According to Alexander, Entwisle and Dauber (1996), mobility affected students’ academic skills, especially their ability to read. In a study by Fien, Paine and Smith (2008) 2,289 second grade students attending school in Oregon were examined during the 2005-2006 school year. The schools selected in this study served high poverty schools, which had a history of students with reading difficulty. All the schools in the study were in a multiyear school reform program. Student data were arranged into three groups. The first group, Group A, was composed of students which had attended the same school from kindergarten through second grade. The second group, Group B, contained second grade students attending the same school for one full year. The last
group, Group C, represented students that moved into second grade during the 2005-2006 school year. Students were given the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency Assessment and the Stanford Achievement Test (SAT). Results of the test confirmed mobility played an important role in academic skills. Students attending the same school for the past three years, Group A, outperformed the other two groups. The longer students attended a particular school the stronger their reading skills. Alexander et al. (1996) found the differences between the three groups reading scores were statistically significant.

In a similar study performed by Heinlin and Shinn (2000), data from 764 students were examined through permanent school folders. Students studied began kindergarten in the New York community school districts and were currently enrolled as sixth graders during the 1996-1997 school year. Students with missing test scores or who were in full time special education were excluded from the study. The sample population consisted of 96% receiving free and/or reduced lunch, 54% female and 46% male, and a majority representing a minority race. The study found students were at a higher risk when they had a history of mobility. Students who had moved two or more times before the third grade had poorer reading and math scores and had a greater chance of being retained than non-mobile students.

High mobility rates caused learning disruptions in schools for all students (Lash & Kirkpatrick, 1990). Students with a pattern of moving from school to school were in need of intensive intervention in order to not fall behind their peers in school. Without good intervention, mobile students were more likely to suffer educational disparities throughout adulthood (Juel, 1988).
Grade Retention

According to McCoy and Reynolds (1999), the practice of students repeating a grade level in order to gain academic success in school was still an acceptable policy across the nation. Grade retention had been viewed as a way for schools to strengthen students’ skills (McCoy & Reynolds, 1999). Yet, many studies showed grade retention was not a beneficial practice for students’ overall academic success in school (McCoy, & Reynolds, 1999; Holmes, 1989; Jackson, 1975; Karweit, 1992; Reynolds; 1992; Roderick, 1994; Rumberger, 1995).

Studies showed some students were more likely to be retained than others. The majority of retained students were low performing in academic areas, particularly reading and language arts (Jimerson et al., 1997). The profile of students at risk of being retained were minority, male, poverty stricken, come from parents of low educational attainment, and have a high mobility rate (Florida Association of School Psychologists, 2004; Meisels & Liaw, 1993; Hauser, 1999; Gottfredson, Fink, & Graham, 1994; Reynolds 1992).

Those at highest risk for retention are male, African American, or Hispanic, and have a late birthday, delayed development and/or attention problems; live in poverty or in a single-parent household, have parents with low educational attainment; have parents that are less involved in their education; or have changed schools frequently. Students who have behavior problems and display aggression or immaturity are more likely to be retained. Students with reading problems, including English language learners (ELL), are also more likely to be retained. (National Association of School Psychologists, 2003, p. 1)

There were many harmful effects from the practice of retaining students in school. Grade retention does not help students and was not viewed as an effective strategy in securing academic success (Jackson, 1975; Holmes, 1989; Karweit, 1992; McCoy & Reynolds, 1999; Southern Regional Education Board, 2001). Retention had a negative
impact on student self-esteem and overall school adjustments (National Association of School Psychologists, 2003). Behavioral rating scales completed by parents and teachers of retained students linked retention to significant behavioral problems in students (National Association of School Psychologists, 2003).

Research examining the overall effects of 19 empirical studies conducted during the 1990s compared outcomes for students who were retained and matched comparison students who were promoted. Results indicate that grade retention had a negative impact on all areas of achievement (reading, math and language) and socio-emotional adjustment (peer relationships, self esteem, problem behaviors, and attendance). (National Association of School Psychologists, 2003, p. 1)

There was a direct link between students retained or having a delayed start to school and a more likelihood to drop out of school than non-retained students (Entiwisle, Alexander, & Olson, 2004; Janosz, LeBlanc, Boulerize, & Tremblay, 1997; National Association of School Psychologists, 2003; Roderick, 1994; Rumberger, 1995; Teachman, Paasch, & Carver, 1996). Jimerson, Anderson and Whipple (2002) completed a review of 17 studies pertaining to retention. Confirmation was found in every study that grade retention was the most consistent predictor of school dropout. According to the National Association of School Psychologists (2003) "Retained students have increased risks of health-compromising behaviors such as emotional distress, cigarette use, alcohol use, drug abuse, driving while drinking, use of alcohol during sexual activity, early onset of sexual activity, suicidal intentions, and violent behaviors" (p. 1).

Longitudinal studies showed retained students had a lower rate of post-secondary enrollment and a higher rate of unemployment after high school (Cairns & Cairns, 1994). Retained students were more likely to drop out than their non-retained
peers (Barro & Kolstad, 1987). Students not earning a high school diploma had a higher unemployment rate than students earning a high school diploma (Bureau of Labor and Statistics, 2011). Compared to students that had not been retained, retained students were more likely to be unemployed, living on public assistance, or incarcerated by the justice system (Graydon, Jimerson, Kundert, Nickerson, Pletcher, & Schnurr, 2006).

Children in poverty have a greater chance of falling further behind than their impoverished peers. Poor students are more susceptible to special education referral and qualification, grade retention, and increased mobility (Hebbeler & Wagner, 1998; Byrd & Weitzman, 1994; Hodgkinson, 2004; Crowley, 2003). An intensive academic intervention program is needed to overcome the effects of poverty.

Response to Intervention Studies

There have been several studies on the effects of Response to intervention programs. Schools across the nation are attempting to find ways to help struggling students maintain academic skills. Special education has also been a benefactor of Response to intervention programs.

Wannemuehler's Rural Indiana Study

In a study conducted by Angela Wannemuehler (2010), RtI was found to have mixed results in the reading achievement scores, referral rates of students identified for possible special education services, and students receiving special education services for specific learning disabilities. Wannemuehler's study focused on the effects of an RtI program implemented in a rural southern Indiana kindergarten through sixth grade.
elementary school over a five-year period. The study used archived student data for the school years of 2003-2009. The specific data Wannemuehler used was student reading achievement scores from the third grade Indiana statewide testing for educational progress plus (ISTPE+), special education referral data and special education records kept on the campus.

During the examined period of time the state scores reading achievement scores on the ISTPE+ remained consistently flat, however, the scores for the studied school projected a downward trend in the passing rate of the ISTPE+. The data examined for the referral of students to special education indicated a significant decrease of students referred to special education in all years examined except year one. The study found no significant difference in the proportion of students qualifying for special education services with a specific learning disability during the examined years.

**Sharron Vaughn and Jeanne Wanzek**

In a study conducted by Vaughn, Wanzek, Murray, Scammacca, Linan-thompson, and Woodruff (2009) students were placed in an intervention setting to increase their reading skills. Based on reading assessment cut-off scores, students were placed in either intervention groups or comparison groups. Students were then analyzed by their reading achievement growth. Vaughn et al. (2009) found statistically significant growth rate in reading supporting students in the intervention groups. Student's receiving intervention significantly improved on passage comprehension and word identification skills. However there was not an improvement for students receiving RtI in the areas of oral fluency and word attack skills.
Control School’s Practices

A phone interview by the researcher was conducted to determine the instructional practices of schools not using the Reading First Model of Response to Intervention. All 47 schools were contacted and information was used to determine intervention and instructional practices used between the years of 2005-2009. Because of change in administrative and instructional staff only 37 schools were available to give correct information on instructional practices.

Core instructional practices used by study schools not using the Reading First Model of Response to Intervention include 22 schools (46.8%) using the approved state basal adopted textbook only, 10 (21.3%) schools using the adopted state textbook and Renaissance Learning's Accelerated Reader as a primary instructional tool, and 5 (10.6%) schools allowed teachers to use a blend of teacher created thematic units and novel studies (Control Group, 2013).

Figure 1. Core instructional practices
Intervention practices used by study schools not using the Reading First model of response to Intervention include Reading Recovery, instructional aides in the classroom, pull out intervention for struggling students, after school tutorials, computer aided intervention programs, and grade retention. Some schools used multiple strategies for intervention. Schools using Reading Recovery were 9 (19%), instructional aides in the classroom 15 (31.9%), pull out intervention 13 (31.9%), after school tutorials 18 (38.3%), computer aided instruction 12 (25.5%), and grade retention 33 (70.2%). With the acceptation of schools using Reading Recovery only two schools had set procedures for intervention practices (Control Group, 2013).

Figure 2. Intervention practices

Conclusion

The review of literature on RTI expresses the national and state concerns for student's academic achievements. Current legislation has defined the need for response to intervention programs focusing on positive student achievements. Local
districts have a need to find economical ways to not only remediate but to accelerate reading instruction of students. Response to intervention is a viable avenue to reduce the number of special education students, accelerate their learning and reinforce positive reading skills for regular education students.
CHAPTER 3

METHODOLOGY

In a study published by Bryant et al. (2000), students identified with difficulties in reading in primary school grades typically did not overcome their reading problems and as a result their later life is negatively affected. Bryant also found that effective reading intervention in the early primary grades could significantly reduce the number of students having difficulty in reading.

Between 2003 and 2009, selected Texas schools implemented the Texas Reading First initiative. The Texas Reading initiative was a federal competitive grant. The purpose of this initiative was to decrease the number of students experiencing reading difficulties in the state of Texas. The first round of implementation Cycle 1, Year 1, 2003, included 103 districts across the state. Cycle 2 began the following year and included an additional 73 districts. In order to be eligible for the grant, schools had to have a passing rate below the state average on the third grade Texas Assessment of Knowledge and Skills Test (TAKS). If accepted to the Texas Reading First program, schools had to adhere to strict guidelines. Schools had to utilize an approved scientifically researched reading program, devote specific uninterrupted time to the teaching of reading, hire additional personnel to supervise the reading instruction, report reading improvement data to the grant facilitator in a timely manner, agree to a five year implementation, and follow a strict response to the intervention process for students.

This study examined the model's impact on special education rates and reading achievement. Schools selected for this study participated in the Texas Reading First program from September 2004 to August of 2009. The participants identified in this
study included 47 individual campuses in 34 districts participating in the Reading First three-tiered intervention model and 47 similar campuses in 46 districts not participating in the Reading First three-tiered model. Individual campuses selected met the criteria of containing Grades K-3, had a minimum of ten students per grade level in Grades K-3, and had a low socioeconomic rate at or above 50% at the campus level. Data were collected for a five-year span using the Texas Academic Excellence Indicator System (AEIS). The study answered the primary questions.

1. What is the effect of the Texas Reading First model of response to intervention on the campus special education rates?

2. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores for students receiving special education services?

3. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores?

Research Design

An analysis of variance developed by R. A. Fisher (Hinkle, Wiersma, & Jurs, 1998) was used to analyze and describe annual samples across five years of selected campus TAKS scores in 47 Texas school campuses compared to 47 similar school campuses not participating in the Reading First reading initiative. This study was selected after I participated in the implementation of a three-tiered reading intervention model based on the guidelines of the federal reading first grant during the 2004-2009 timeframe. I developed an interest due to noticeable decreases in special education
rates and observable student achievement increases during the five-year implementation of the three-tiered reading intervention model at the local elementary campus in which I was principal.

An enumerative strategy was used based on the subgroups determined by the AEIS report in order to obtain frequency counts and percentages. Certain campuses participating in the Reading First reading program were compared to similar campuses not participating in the Reading First reading program. Data for special education rates, passing rates for special education students in reading, and campus reading achievement were analyzed.

Setting and Context

Each of the schools receiving treatment in this study participated in the Texas Reading First grant and implemented a three-tiered reading intervention model for a minimum of five years during the time period of 2004-2009. The schools identified had a poverty level above 50% and were part of a district having a population less than 8,000 students. The local district provided three-tiered reading intervention to students in Grades Kindergarten through 3, five days a week for a minimum of 30 minutes a day and intensive professional development for kindergarten through third grade teachers and prekindergarten through twelfth grade special education teachers. The Texas Primary Reading Inventory was used to identify students for intervention. Students moved in and out of tiered groups every three weeks using progress monitoring tests based on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) measures.
The population of non-treatment schools was established by matching each treatment school with a similar school using the 2005 Comparable Improvement Report from the Texas Education Agency (TEA). The Comparable Improvement Report compares individual campuses to other campuses with similar characteristics. The characteristics identified in the comparable improvement report are reported in percentages for students identified as low socioeconomic status, mobile, Hispanic, White, African American, and limited English proficient. Schools not receiving treatment matched the treatment schools in the population restriction of districts under 8,000 and a poverty level of 50% or greater. These schools were not participants in the Reading First initiative. These schools' data were used for the same comparison years of 2004-2009.

**Subjects of the Study**

Subjects participating in this study were from the 47 campuses implementing the three-tiered reading intervention model in accordance with the Reading First grant guidelines during the time period of 2004-2009. Each of the representative districts participated in the Reading First grant for a minimum of five years and each district had a population of less than 8,000 students. For the purpose of this study, the 47 participating campuses were alphabetized and assigned a random number. This number served as identification for the districts while maintaining an anonymous position. Comparative schools were found using the TEA Report. These schools fit the parameters of having less than 8,000 students enrolled in the district, a poverty level at or above 50%, and not participating in the Reading First Initiative.
Procedures

Data Collection

I obtained data from the Texas Education Agency at the macro and micro levels using the AEIS over a five-year period from 2004-2009. At the macro level data was collected for each subgroup identified over the five-year period. The micro levels studied each of the districts individually. The 47 campuses participating in this study received a random numerical ranking after being alphabetized.

The data on the AEIS report were previously converted from frequency counts to percentages by the Texas Education Agency. Data were collected as percentages for percent passing the TAKS Reading test at the campus level, percent passing the TAKS Test at the campus level for special education students, and percent of students enrolled in special education at the campus level.

A quantitative analysis was used to examine all 94 campuses together as a whole. This study compared the population percentages of special education students, campus passing rates on the TAKS tests of special education students, and campus passing rates on the TAKS tests of all students in school using the Reading First model of intervention and schools not using the Reading First model of intervention. Data from the 2004-2009 AEIS report were examined. Descriptive statistics and ANOVA were the statistical procedures used in this study. Descriptive statistics permitted an accurate evaluation of the groups tested. ANOVA was used to determine if significant differences existed between the special education populations and student testing achievement in schools participating in the Reading First model of intervention and similar schools not participating in the program. A line graph dyad was used to study and report the data
collected for each subgroup identified over the five-year period at the macro level. The micro levels examined each of the districts used for this study individually.
CHAPTER 4

RESULTS

The study provided an analysis of the relationship, if any, between the achievement of regular education and also the relationship of special education students participating in the Texas Reading First model of response to intervention at the campus level. The study similarly examined the relationship, if any, of special education rates for individual campuses participating in the Texas Reading First model of intervention as compared to those not using the Texas Reading First model of intervention.

Descriptive Statistics

Descriptive statistics compared school campuses participating in the Texas Reading First model of response to intervention (TRFMRI) to school campuses not participating in the Texas Reading First model of response to intervention. The campuses participating in the study consisted of 47 campuses participating in the TRFMI and 47 similar campuses not participating in the TRFMRI. All campuses in the study had a district population of 8,000 students or less.

The schools participating in the TRFMRI schools had an average campus enrollment of 372 students in 2005 and 268 students in 2009 and a district average enrollment of 2555 students in 2005 and 2884 students in 2009. Schools not participating in the TRFMI schools had an average campus enrollment of 362 students in 2005 and 246 students in 2009 and a district average enrollment of 2395 students in 2005 and 2648 students in 2009. During the study period, schools participating in the
TRFMRI had a 28% decrease in campus enrollment compared to a 23% decrease in enrollment in schools not participating in the TRFMRI. Both groups had an increase in the average district population, 12% for schools using the TRFMRI and 10% for schools not using the TRFMRI.

Both groups studied had a decrease in the percentage of students qualifying for special education services. The populations of students receiving special educational services for the campuses using the TRFMRI were 12.2% in 2005, 10.5% in 2006, 9.3% in 2007, 8.9% in 2008 and 8.2% in 2009. Campuses not using the TRFMRI reduced their campus special education populations from 12.1%, 2005, 11.2% in 2006, 10% in 2007, 9.2% in 2008 and 8.4% in 2009.

![Campus Special Education Rate](image)

**Figure 3.** Campus special education rates

In examining the special education campus passing rates on the Texas Assessment of Knowledge and Skills (TAKS) reading test, the following information was
revealed. Schools implementing the TRFMRI had a special education passing rate on the TAKS reading tests of 73.9% in 2005, 81.9% in 2006, 83.2% in 2007, 60.1% in 2008 and 65.6% in 2009. The special education campus passing rates on the TAKS reading test for schools not using the TRFMRI were 72% in 2005, 77% in 2006, 80.8% in 2007, 61.3% in 2008 and 54.1% in 2009.

Figure 4. Campus TAKS passing rate for special education students

Campus passing rates for the TAKS reading tests were also reported for the years of 2005-2009. The campus passing rate of all students for the TAKS reading tests for TRFMRI campuses were 81.5% in 2005, 87.1% in 2006, 86.9% in 2007, 86.5% in 2008 and 85.4% in 2009. For campuses not participating in the TRFMRI the campus-passing rate of all students taking the TAKS reading were 84.7% in 2005, 87.6% in 2006, 87.2% in 2007, 86.7% in 2008 and 83% in 2009.
Research Questions and Data Analysis

The data analysis for this study is included in this section. Each research question investigated is followed by the data analyses used to answer the question. The following three questions are addressed in this study.

1. What is the effect of the Texas Reading First model of response to intervention on the campus special education rates?

2. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores for students receiving special education services?

3. What is the effect of the Texas Reading First model of response to intervention on campus reading achievement scores?
Descriptive and Inferential Statistics

Descriptive statistics were used to determine the mean and standard deviations for the special education and all students passing rates on the TAKS tests for both campus groups from 2005-2009. Descriptive statistics was also used to determine the mean and standard deviations for campus special education rates for both school groups from 2005-2009. The information was gathered from both comparison campus groups.

Inferential statists were used to calculate repeated measures ANOVA tests in order to determine significant differences between the achievements of the two school groups. An ANOVA was also used in the determination if the reduction of special education students was significant between the two groups of schools.

Results

Descriptive Statistics

Represented in Table 1 are the special education enrollment rates for the sample school campus populations.

In examining the campuses using the TRFMRI and those not using the TRFMRI, the campuses using the TRFMRI had a lower mean score for special education enrollment than the campuses not participating in the TRFMRI. The TRFMRI campuses scored lower in, 2006 (10.5% vs. 11.1%), 2007 (9.3% vs. 10%), 2008 (8.9% vs. 9.1%), and 2009 (8.1% vs. 8.3%). In 2005 the schools participating in the TRFMRI scored higher than those not participating in the TRFMRI (12.2% vs. 12.1%). Overall the
schools using the TRFMRI showed greater reduction of students enrolled in special education over the five years than the non-TRFMRI schools (-4% vs. -3.7%).

Table 1

**Special Education Rates**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 Special Ed Enrollment</td>
<td>47</td>
<td>5.2</td>
<td>20.3</td>
<td>12.1553</td>
<td>4.0966</td>
</tr>
<tr>
<td>2006 Special Ed Enrollment</td>
<td>47</td>
<td>4.4</td>
<td>19.1</td>
<td>10.5128</td>
<td>3.57659</td>
</tr>
<tr>
<td>2007 Special Ed Enrollment</td>
<td>47</td>
<td>4.6</td>
<td>15.9</td>
<td>9.3489</td>
<td>3.03121</td>
</tr>
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<td>2008 Special Ed Enrollment</td>
<td>47</td>
<td>3.1</td>
<td>14.9</td>
<td>8.8723</td>
<td>2.85997</td>
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<tr>
<td>2009 Special Ed Enrollment</td>
<td>47</td>
<td>2.7</td>
<td>15</td>
<td>8.1702</td>
<td>2.8609</td>
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<tr>
<td><strong>Group 2</strong></td>
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<td></td>
</tr>
<tr>
<td>2005 Special Ed Enrollment</td>
<td>47</td>
<td>4.9</td>
<td>20.5</td>
<td>12.0787</td>
<td>3.93838</td>
</tr>
<tr>
<td>2006 Special Ed Enrollment</td>
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<td>21.3</td>
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<td>2007 Special Ed Enrollment</td>
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<td>0.1</td>
<td>17.7</td>
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<td>2008 Special Ed Enrollment</td>
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<td>2.2</td>
<td>15.5</td>
<td>9.1574</td>
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<tr>
<td>2009 Special Ed Enrollment</td>
<td>47</td>
<td>1.5</td>
<td>17.4</td>
<td>8.366</td>
<td>3.30686</td>
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</table>

Table 2 displays the special education passing rates on the Texas Assessment of Knowledge and Skills tests for the sample school campus populations.
In examining the campuses using the TRFMRI and those not using the TRFMRI, the campuses using the TRFMRI had a higher mean score for TAKS passing rates for students in special education than the campuses not participating in the TRFMRI. The TRFMRI campuses scored higher in 2005 (73.9% vs. 72%), 2006 (81.9% vs. 77%), 2007 (83.2% vs. 80.8%) and 2009 (65.6% vs. 54.1%). In 2008 the campuses participating in the TRFMRI scored lower than those not participating in the TRFMRI (60.1% vs. 61.3%). Overall the campuses using the TRFMRI showed greater improvement on special education students passing the TAKS test over the five years than the non-TRFMRI campuses.

Represented in Table 3 are the campus passing rates on the Texas Assessment of Knowledge and Skills tests for the sample school campus populations.
Table 3

*Campus Passing Rates*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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</thead>
<tbody>
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<td><strong>Group 1</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 2005 Campus Passing Rate</td>
<td>47</td>
<td>63</td>
<td>96</td>
<td>81.51</td>
<td>7.62</td>
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<td>2006 Campus Passing Rate</td>
<td>47</td>
<td>73</td>
<td>98</td>
<td>87.13</td>
<td>5.35</td>
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<td>2007 Campus Passing Rate</td>
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<td>73</td>
<td>97</td>
<td>86.85</td>
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<td>2008 Campus Passing Rate</td>
<td>47</td>
<td>73</td>
<td>97</td>
<td>86.51</td>
<td>5.94</td>
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<td>69</td>
<td>97</td>
<td>85.45</td>
<td>6.83</td>
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<td><strong>Valid N (listwise)</strong></td>
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<tr>
<td><strong>Group 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 Campus Passing Rate</td>
<td>47</td>
<td>65</td>
<td>100</td>
<td>84.7</td>
<td>7.13</td>
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<tr>
<td>2006 Campus Passing Rate</td>
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<td>71</td>
<td>99</td>
<td>87.62</td>
<td>6.66</td>
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<td>2007 Campus Passing Rate</td>
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<td>68</td>
<td>100</td>
<td>87.21</td>
<td>7.91</td>
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<tr>
<td>2008 Campus Passing Rate</td>
<td>47</td>
<td>63</td>
<td>100</td>
<td>86.72</td>
<td>8.29</td>
</tr>
<tr>
<td>2009 Campus Passing Rate</td>
<td>47</td>
<td>63</td>
<td>100</td>
<td>82.98</td>
<td>9.06</td>
</tr>
<tr>
<td><strong>Valid N (listwise)</strong></td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In examining the campuses using the TRFMRI and those not using the TRFMRI, campuses using the TRFMRI had a higher TAKS passing rate mean score than campuses not participating in the TRFMRI. The TRFMRI campuses scored lower in 2005 (81.5% vs. 84.7%), 2006 (87.1% vs. 87.6%), 2007 (86.9% vs. 87.2%), and 2008 (86.5% vs. 86.7%). In 2009 the schools participating in the TRFMRI scored higher than those not participating in the TRFMRI (85.4% vs. 83%). Overall the schools using the TRFMRI showed greater improvement on students passing the TAKS test over the five years than the non-TRFMRI schools.
Inferential Statistics

This section contains the inferential findings for each of the three research questions. The use of the repeated measures instrument ANOVA was used to determine if there was a significant difference at the .05 level for campuses participating in the TRFMRI verses those campuses not participating in the TRFMRI.

The eta ($\eta$) coefficient to test for the proportion of variance in the study was used to determine the relationship between the schools not participating in the First Model of response to intervention and those schools participating the Reading First model of response to intervention. By using the square of the coefficient ($\eta^2$), the amount of the variance in the dependent variable can be explained. $\eta^2$ values range between 0 and +1 and are converted to percentages in this study to determine a percentage of variance (Hinkle, Wiersma, & Jurs, 1998).

Research Question 1

What is the effect of the Reading First Model of response to intervention on the campus special education rates?

Displayed in Table 4 are the findings of the repeated measures ANOVA test for research question 1. According to the ANOVA statistical test for variances there was no statistically significant difference between the two groups' rate of students enrolled in special education in 2005 (Sig. .927), 2006 (Sig. .410), 2007 (Sig. .331), 2008 (Sig. .648) and 2009 (Sig. .760). The findings indicate the TRFMRI campuses were not significantly different from campuses not participating in the TRFMRI.

$\eta^2$ was used to test the effect size in order to determine the
relationship between the two variables. The effect size for this data set shows a poor relationship between the two variables in all five years. The greatest relationship between the variables occurred in 2007.

Table 4

*Special Education Enrollment ANOVA*

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2005 Special Ed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>0.138</td>
<td>1</td>
<td>0.138</td>
<td>0.009</td>
<td>0.927</td>
<td>0.09%</td>
</tr>
<tr>
<td>Enrollment</td>
<td>1485.475</td>
<td>92</td>
<td>16.146</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1485.613</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2006 Special Ed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>8.947</td>
<td>1</td>
<td>8.947</td>
<td>0.685</td>
<td>0.41</td>
<td>0.70%</td>
</tr>
<tr>
<td>Enrollment</td>
<td>1202.011</td>
<td>92</td>
<td>13.065</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1210.957</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2007 Special Ed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>11.03</td>
<td>1</td>
<td>11.03</td>
<td>0.954</td>
<td>0.331</td>
<td>1%</td>
</tr>
<tr>
<td>Enrollment</td>
<td>1064.203</td>
<td>92</td>
<td>11.567</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1075.233</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2008 Special Ed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1.91</td>
<td>1</td>
<td>1.91</td>
<td>0.21</td>
<td>0.648</td>
<td>0.20%</td>
</tr>
<tr>
<td>Enrollment</td>
<td>836.089</td>
<td>92</td>
<td>9.088</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>837.999</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2009 Special Ed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>0.9</td>
<td>1</td>
<td>0.9</td>
<td>0.094</td>
<td>0.76</td>
<td>0.10%</td>
</tr>
<tr>
<td>Enrollment</td>
<td>879.524</td>
<td>92</td>
<td>9.56</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>880.424</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question 2

What is the effect of the Reading First model of response to intervention on campus reading achievement scores for students receiving special education services?
Table 5

Special Education TAKS Passing Rate ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 Special Ed</td>
<td>Between Groups</td>
<td>48.008</td>
<td>1</td>
<td>48.008</td>
<td>0.154</td>
<td>0.697</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>Within Groups</td>
<td>14998.812</td>
<td>48</td>
<td>312.475</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15046.82</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 Special Ed</td>
<td>Between Groups</td>
<td>226.433</td>
<td>1</td>
<td>226.433</td>
<td>0.627</td>
<td>0.434</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>Within Groups</td>
<td>12997.778</td>
<td>36</td>
<td>361.049</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>13224.211</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007 Special Ed</td>
<td>Between Groups</td>
<td>71.923</td>
<td>1</td>
<td>71.923</td>
<td>0.253</td>
<td>0.617</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>Within Groups</td>
<td>13629.997</td>
<td>48</td>
<td>283.958</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>13701.92</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008 Special Ed</td>
<td>Between Groups</td>
<td>31.285</td>
<td>1</td>
<td>31.285</td>
<td>0.059</td>
<td>0.808</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>Within Groups</td>
<td>40670.791</td>
<td>77</td>
<td>528.192</td>
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</tr>
<tr>
<td></td>
<td>Total</td>
<td>40702.076</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009 Special Ed</td>
<td>Between Groups</td>
<td>2284.243</td>
<td>1</td>
<td>2284.243</td>
<td>4.217</td>
<td>0.044</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>Within Groups</td>
<td>36294.713</td>
<td>67</td>
<td>541.712</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>38578.957</td>
<td>68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 presents the findings of the repeated measures ANOVA test for Research Question 2. According to the ANOVA statistical test for variances there was no statistically significant difference between the two groups' special education students' passing rate on the Texas Assessment of Knowledge and Skills tests from the years 2005 through 2008. The values were; 2005 (Sig. .697), 2006 (Sig. .434), 2007 (Sig. .617), and 2008 (Sig. .808). The ANOVA does find a statistically significant difference for 2009 (Sig. .044). The findings indicate the passing rate for students in...
special education in TRFMRI schools were not significantly different from campuses not participating in the TRFMRI in 2005-2008, but they were statistically significant in 2009. When examining the effect size there is a weak relationship between the variables for this data set in the study. The $\eta^2$ values show an increase in the relationship between variables in the first two years and then between the last three years.

Table 6

Campus TAKS Passing Rate ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 Campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>239.362</td>
<td>1</td>
<td>239.362</td>
<td>4.398</td>
<td>0.039</td>
<td>4.60%</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>5007.574</td>
<td>92</td>
<td>54.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5246.936</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 Campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>5.628</td>
<td>1</td>
<td>5.628</td>
<td>0.154</td>
<td>0.695</td>
<td>0.17%</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>3358.34</td>
<td>92</td>
<td>49.324</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>3363.968</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007 Campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>3.074</td>
<td>1</td>
<td>3.074</td>
<td>0.062</td>
<td>0.803</td>
<td>0.07%</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>4537.83</td>
<td>92</td>
<td>49.324</td>
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</tr>
<tr>
<td>Total</td>
<td>4540.904</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>2008 Campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1.064</td>
<td>1</td>
<td>1.064</td>
<td>0.02</td>
<td>0.887</td>
<td>0.02%</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>4787.149</td>
<td>92</td>
<td>52.034</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>4788.213</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009 Campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>143.149</td>
<td>1</td>
<td>143.149</td>
<td>2.222</td>
<td>0.139</td>
<td>2.40%</td>
</tr>
<tr>
<td>Passing Rate</td>
<td>5926.596</td>
<td>92</td>
<td>64.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6069.745</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Research Question 3

What is the effect of the Reading First model of response to intervention on campus reading achievement scores?

Table 6 displays the findings of the repeated measures ANOVA test for Research Question 3. According to the ANOVA statistical test for variances there was no statistically significant difference between the two groups campus student-passing rate on the Texas Assessment of Knowledge and Skills tests from the years 2006 through 2009. The values were; 2006 (Sig. .695), 2007 (Sig. .803), 2008 (Sig. .887), and 2009 (Sig. .139). The ANOVA does find a statistically significant difference for 2005 (Sig. .039). The findings indicate the passing rate for the campus in TRFMRI schools were not significantly different from campuses not participating in the TRFMRI in 2005-2009, but they were statistically significant in 2004. Effect size data from research question three shows an overall weak relationship between the variables. The $\eta^2$ values show the greatest relationship between variables in the first year of the study in 2005 and the last year of the study 2009. The greatest relationship was in 2009.

Summary

This chapter examined the three research questions individually using descriptive and inferential statistics. Data was collected using the Texas Education Agency’s Academic Excellence Indicator System. Mean scores from the Texas Assessment of Knowledge and Skills (TAKS) test gathered from schools using the Texas reading First Model of Response to Intervention (TRFMRI) and schools not using the TRFMRI were charted. Data for the mean scores were reported in percentages during the years 2005-
2009. An ANOVA was used as an inferential statistic tool to determine the statistical significance associated with the tests, and eta squared was used to determine the effect size of the tests. This chapter provided analyzed data for each of the three research questions. Chapter 5 provides summaries, conclusions, and recommendations.
CHAPTER 5

SUMMARY AND DISCUSSION

The purpose of this study was to determine if there was a variance between the use of the Texas Reading First model of response to intervention (TRFMRI) and campus special education rates, special education passing rates on the Texas Assessment of Knowledge and Skills reading tests (TAKS), and campus passing rates on the Texas Assessment of Knowledge and Skills reading tests (TAKS). The study investigated 47 campuses using the TRFMRI and 47 campuses with similar demographics not using the TRFMRI.

Campuses selected for this study were placed into two groups; group one included schools participating in the TRFMRI, and group two included campuses not participating in the TRFMRI. The Academic Excellence Indicator System (AEIS) reports from the Texas Education Agency (TEA) provided data for the study. Both groups were composed of campuses with low socioeconomic student populations in excess of 50%. Campuses in the study belonged to districts with a population of 8,000 students or less and housed kindergarten through third grade classes. Campuses selected for the TRFMRI group were selected from the TEA Reading First grant program list (Texas Education Agency, 2011). Comparison campuses were chosen from the TEA Comparable Improvement Report (Texas Education Agency, 2012).

Each campus participating in the TRFMRI was examined to determine if they met the criteria of a minimum of 50% low socioeconomic population, met the condition of a district of 8,000 students or less, and taught kindergarten through third grade. There were 47 TRFMRI campuses that met the selected criteria for the study. Each TRMRI
campus was matched with a similar campus using the TEA Comparable improvement Report. The TEA Comparable improvement Report generates a list of 40 campuses most similar to a selected campus. The campuses most similar in relation to low socioeconomic and district population were used as comparison campuses.

Findings

The first finding of this study indicated there were no statistically significant differences in the rate of students enrolled in special education for the campuses using the TRFMRI and the campuses not using the TRFMRI. The statistical procedure of an ANOVA was used to test the two groups studied from 2005-2009. In order to be statistically significant the $p$ value must be less than .05, $p < .05$. The ANOVA produced the following statistical results; 2005, $p = 0.927$; 2006, $p = 0.410$; 2007, $p = 0.331$; 2008, $p = 0.648$; and 2009, $p = 0.760$. Eta Square ($\eta^2$) reported in percentages was used for testing the effect size of this study. The small effect size reported by $\eta^2$ indicates a weak relationship between the variables in the study. The weak $\eta^2$ values suggest there was a lack of variable relationship to determine the validity of the test. The small $\eta^2$ reveals a larger population was needed for the study. The $\eta^2$ values were 2005, $\eta^2 = 0.09\%$; 2006, $\eta^2 = 0.70\%$; 2007, $\eta^2 = 1.00\%$; 2008, $\eta^2 = 0.20\%$; and 2009, $\eta^2 = 0.10\%$.

The descriptive statistical results of the reduction of special education rates revealed more constructive results than the inferential. From the years of 2005-2009 both the campuses using the TRFMRI and the campuses not using the TRFMRI had a decline in the percentages of students enrolled in special education. The campuses participating in the TRFMRI had a reduction of special education enrollment of 4%, from
12.2% in 2005 to 8.2% in 2009. The campuses not participating in the TRFMRI reduced their special education enrollment by 3.7% (2005, 12.1% to 2009, 8.4%), Overall the campuses participating in the TRFMRI reduced their special education enrollment 0.3% more than the group not participating in the TRFMRI.

The second finding of this study indicated one year in which a statistical significant difference occurred in the passing rate of special education students on the Reading Texas Assessment of Knowledge and Skills tests between the campuses participating in the TRFMRI and those not participating in the TRFMRI. The statistical procedure of an ANOVA was used to test the two groups studied from 2005-2009. In order to be statistically significant the $p$ value must be less than .05, $p < .05$. The ANOVA produced the following statistical results; 2005, $p = 0.697$; 2006, $p = 0.434$; 2007, $p = 0.617$; 2008, $p = 0.808$; and 2009, $p = 0.044$. In 2009 there was significant statistical difference between the campuses using the TRFMRI and those not using the TRFMRI. The small effect size reported by $\eta^2$ indicates a weak relationship between the variables in the study. The weak $\eta^2$ values suggest there was a lack of variable relationship to determine the validity of the test. The small $\eta^2$ reveals a larger population was needed for the study. The $\eta^2$ values were 2005, $\eta^2 = 0.30\%$; 2006, $\eta^2 = 0.17\%$; 2007, $\eta^2 = 0.50\%$; 2008, $\eta^2 = 0.70\%$; and 2009, $\eta^2 = 5.90\%$.

The descriptive statistical results of the TAKS reading passing rates of special education students revealed more favorable results than the inferential. From the years of 2005-2007 both the campuses using the TRFMRI and the campuses not using the TRFMRI had an increase in the percentages of students passing the reading portion of the TAKS test. The campuses participating in the TRFMRI had a 9.3% increase in the
passing rate of special education students, from 73.9% in 2005 to 83.2% in 2007. The campuses not participating in the TRFMRI increased their special education passing rate by 8.8% (2005, 72% to 2007, 80.8%). Overall the campuses participating in the TRFMRI increased their special education student passing by 0.5% more than the group not participating in the TRFMRI. The Texas Education Agency changed the passing standards in the 2008-testing year. The campuses participating in the TRFMRI had a passing rate for special education students on the TAKS reading test of 60.1% in 2008 and 65.6% in 2009. Campuses not participating in the TRFMRI had a passing rate for special education students on the TAKS reading test of 61.3% in 2008 and 54.1% in 2009. Between the years of 2008 and 2009 campuses participating in the TRFMRI scored 11.5% better than campuses not in the TRFMRI.

The third finding of this study indicated one year in which a statistical significant difference occurred in the passing rate of all students on the Reading Texas Assessment of Knowledge and Skills tests between the campuses participating in the TRFMRI and those not participating in the TRFMRI. The statistical procedure of an ANOVA was used to test the two groups studied from 2005-2009. In order to be statistically significant the \( p \) value must be less than .05, \( p < .05 \). The ANOVA produced the following statistical results; 2005, \( p = 0.039 \); 2006, \( p = 0.695 \); 2007, \( p = 0.803 \); 2008, \( p = 0.887 \); and 2009, \( p = 0.139 \). In 2005 there was significant statistical difference between the campuses using the TRFMRI and those not using the TRFMRI. Eta Square (\( \eta^2 \)) reported in percentages was used for testing the effect size of this study. The small effect size reported by \( \eta^2 \) indicates a weak relationship between the variables in the study. The weak \( \eta^2 \) values suggest there was a lack of variable relationship to
determine the validity of the test. The small $\eta^2$ reveals a larger population was needed for the study. The $\eta^2$ values were 2005, $\eta^2 = 4.60\%$; 2006, $\eta^2 = 0.17\%$; 2007, $\eta^2 = 0.07\%$; 2008, $\eta^2 = 0.02\%$; and 2009, $\eta^2 = 2.40\%$.

The descriptive statistical results of the TAKS reading passing rates of all students revealed more beneficial results than the inferential. From the years of 2005-2009 both the campuses using the TRFMRI and the campuses not using the TRFMRI had an increase in the percentages of students passing the reading portion of the TAKS test. The schools participating in the TRFMRI had an increase of 3.9% passing rate of all students from 81.5% in 2005, to 85.4% in 2009. The campuses not participating in the TRFMRI decreased their special education passing rate by 1.7% (2005, 84.7% to 2009, 83%), Overall the campuses participating in the TRFMRI increased their campus student passing rate by 5.6% more than the group not participating in the TRFMRI.

Conclusion

The use of the inferential statistics indicated that there was no correlation between the TRFMRI group and the group not using the TRFMRI for all but two individual years in two tests. The reduction of the rate of special education enrollment for the two groups had no correlation. There was a significant difference in the passing rate of special education students on the reading TAKS test in the TRFMRI campuses and the campuses not participating in the TRFMRI during the year of 2009. There was not statistically significant evidence for the passing rate on the TAKS reading test during the 2005-2008 school years. The passing rate for all students on the TAKS reading test showed indication of statistically significant difference in the initial school year of 2005.
From the years of 2006-2009 there was not a statistically significant difference between the TRFMRI campuses and the non-TRFMRI campuses. Campuses not participating in the TRFMRI made equally positive improvements as those participating in the TRFMRI campuses in reducing special education rates, improving the passing rates of special education students on the TAKS tests, and improving the passing rate for all students.

In a similar study completed by Josie Hernandez-Gutierrez (2008), 25 fourth grade students were given a ten-week classroom reading intervention program and then compared to 25 students not given the classroom reading intervention. Students were selected from five Fort Worth Independent School District elementary campuses. The study found no statistical significance using Texas Assessment of Knowledge and Skills Tests between the students receiving the intervention and those not receiving the intervention. However, the study did find descriptive benefits to the intervention program.

Linda Davidoff (2012) conducted a response to intervention study in New Jersey focusing on at risk students in the first, second, and third grade. In her study she found improvement in the academic skills the students in the tiered intervention programs. However, during her study she only found the use of response to intervention to be statistically significant for students in the first grade.

Angela Wannemuehler (2010), study of reading achievement scores rural elementary schools also found negative results in the reading achievement scores, referral rates of students identified for possible special education services, and students receiving special education services for specific learning disabilities. Over a five-year period there was not a statistical significance in reading achievement scores, special
education referral rates, or students receiving special education services for learning disabilities.

Significance of the Study

Even though the study did not reap a definite inferential significance between the TRFMRI schools and those not participating in the TRFMRI, descriptive statistics show positive purpose for response to intervention. Campuses participating in the TRFMRI showed a greater decrease in the population of special education students than those campuses not participating in the TRFMRI. The special education population of the TRFMRI campuses scored better on the TAKS reading test than populations similar to them but not participating in the TRFMRI. When the TRFMRI entire campus population tested is compared those populations not being served by the TRFMRI, the campuses participating in the TRFMRI performed better than those not in the TRFMRI. The study shows that different approaches to response to intervention can be beneficial to campuses and students. Schools not participating in the TRFMRI performed proportionately as well in the intervention of both special education and regular education students.

Suggestions for Future Studies

The current study found mixed results on the benefits of school response to intervention programs and student achievement. Therefore, further studies in the area of response to intervention programs would be beneficial in the area of educational intervention strategies.
The most relevant suggestion for future studies is to investigate the correlation between the successes of Limited English Speaking students in schools utilizing a response to intervention program. The Texas population of Limited English Speaking students has grown almost 200,000 students in Texas and currently makes up 16.7% of the school population. According to Sheng (2011), Limited English speaking students are at risk of not completing high school. Early intervention and success in reading can assistance these students in basic academic areas (Roessingh & Elgie, 2009).

Another recommendation is to determine the instructional fidelity and the relationship of academic gains of students. Many educational studies support a strong positive relationship between program fidelity and educational benefits of participants (Echevarria, Richards-Tutor, Vivan, & Paige, 2011; Larsen, 2007; Vartuli & Rohs, 2009).

A final recommendation is the reproduction of this study utilizing the new assessment instrument STAAR, State of Texas Academic Assessment of Readiness tests. The level of difficulty has increased on the STAAR test and requirements have been added for minimum achievement standards. Students not meeting minimum standards in English, Math, Social Studies and Science may not graduate (Tutz, 2010). Proven intervention strategies are vital for schools today and in the future.

Summary

This study sought out to determine if campuses using the TRFMRI reduced the rate of students enrolled in special education. A second goal was to determine if the TRFMRI campuses performed better on the TAKS reading tests for special education populations and the entire campus population. The study examined five years of data

Over the past 30 years special education rates in the United States have soared to a 37% increase from 1980-2005 while the general population has only grown 20% (US Department of Education, 2012). Schools are challenged to find ways to reduce the number of students served by special education.

Literacy is a primary skill needed to be an effective member of society (Chall, Jacobs, & Baldwin, 1990; Allington & Walmsley, 1995). Effective reading fluency is a necessity for the development of an individual to become successful in school and society (Benner, Kinder, Beaudoin, Stein, & Hirchmann, 2005). The instruction of reading is important in the early years of a child's educational career. All subjects in school rely on the ability to read as a prerequisite for success.

This study provides evidence of how an effective reading intervention program can curb special education rates and increase special education and campus group achievement scores on the Texas Assessment of Knowledge and Skills tests. The greatest educational gains are achieved with early interventions used with younger school age children. The Perry Preschool Project, Head Start, Reading Recovery, and the study performed by Angela Wannemuehler showed academic gains in students in first grade and younger.


