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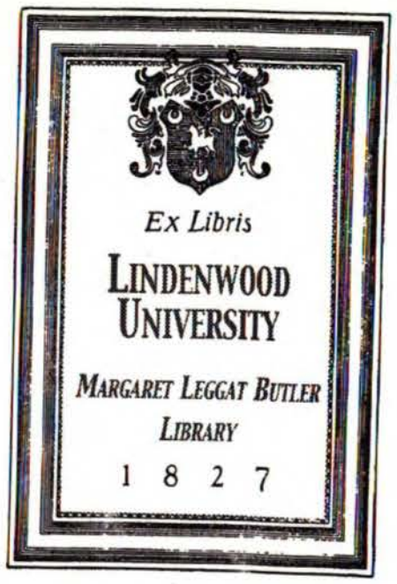
THE EFFECTS OF A RESEARCH-BASED INTERVENTION PROGRAM ON KINDERGARTEN STUDENT ACHIEVEMENT

Melvin J. Bishop Jr.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THE EFFECTS OF A RESEARCH-BASED INTERVENTION PROGRAM ON KINDERGARTEN STUDENT ACHIEVEMENT

by

Melvin J. Bishop, Jr.

A Dissertation submitted to the Education Faculty of Lindenwood University
in partial fulfillment of the requirements for the degree of

Doctor of Education

School of Education

DECLARATION OF ORIGINALITY

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Melvin J. Bishop, Jr.

Signature: Melvin Bishop Jr. Date: 12-29-08

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This Dissertation has been approved as partial fulfillment of the requirements for the degree of
Doctor of Education
at Lindenwood University by the School of Education

Dr. Cynthia Bice, Dissertation Chair	12-18-08 Date
Dr. Susan Isenberg, Committee Member	12-18-08 Date
Dr. Cindy Vitale, Committee Member	12/18/08 Date

Please Post

Notice of Final Oral Presentation

DATE November 5, 2008

TO: School of Education

This is to verify that Melvin J. Bishop, Jr. has presented his Doctor of Education Dissertation to the Doctor of Education Degree Dissertation Committee:

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Cindy Vitale	11/5/08
Dr. Cindy Vitale, Committee Member	Date

Acknowledgments

The journey toward the completion of this dissertation project has been a long adventurous road. The completion of this project would not have been possible without the constant support of my loving wife Tina and our three boys, Parker, Peyton and Palmer. Without my families understanding and sacrifices this project would not have been completed as they are the driving force in my life. Tina, my boys and some very close friends in the Harvester Knights of Columbus, ICD CRHP VII men's group, and my co workers in The City of St. Charles School District have been a constant source of encouragement and support and I thank you all.

A special thank you to the kindergarten teachers, students, and the intervention specialist who took the interventions discussed in this project and made them a positive reality for the betterment of our students.

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Abstract

The current system for identifying at-risk students, which employs the wait-and-see method, provides teachers no formal way of getting the necessary interventions needed in order for their students to be successful. The purpose of this study was to determine if the implementation of a research-based intervention program, Response To Intervention, would increase the academic performance of kindergarten students identified as at-risk.

Kindergarten students entering school for the first time were tested for basic knowledge of alphabetical letter recognition and letter sound recognition. Children who demonstrated a deficit were given a series of research-based reading interventions by an intervention specialist to help them gain the basic skills they lacked. During the four months of study, each of these 16 students received the reading interventions in small groups or in a one-on-one setting and for various periods of time based on their individual needs. Of the original 16 students who were identified as below grade level, 14 were considered on grade level, knowing at least half of the alphabetical letters and their corresponding letter sounds, with their peers after four months of interventions.

Students who received the interventions had their reading assessed against the other students enrolled that same year and against historical data gathered during the previous two school years using the Rigby Benchmark Assessments. Statistical analysis of the data concluded that on five of six tests, the intervention process used in this study was statistically significant as a positive way to improve student achievement. The data showed that the growth of the students in the treatment group was significantly greater than their peers on all six tests. The researcher is optimistic that this growth will allow the

treatment students to continue to learn on the same level as their peers from the point of this study forward. The information gathered during this study at Harris Elementary School will be the basis for a district wide intervention model in The City of St. Charles School District.

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treatment students to continue to learn on the same level as their peers from the point of this study forward. The information gathered during this study at Harris Elementary School will be the basis for a district wide intervention model in The City of St. Charles School District.

Chapter One - Introduction

Background of the Study

In a contemporary educational setting, it seems that if children are performing significantly below their peers, then they are typically identified as *at-risk* students. The term *at-risk* has many definitions and meanings in different settings according to the situation in which it is used. For the purpose of this study, the term *at-risk* identifies students performing academically at an inadequate level or at a significantly lower level when compared to other children of the same age group. At-risk students need educational material presented to them in nontraditional ways that include modifications, accommodations, or specific learning interventions. In past years, it has been the researcher's experience, as both a classroom teacher and as an elementary school principal, that the primary way a child who needs interventions receives those interventions is through the special education referral process.

The special education process is the formal process in which a child who is performing poorly is subjected to a series of intellectual and academic tests to determine if the child has a specific learning disability. The Individuals with Disabilities Education Act of 2004 Part B (United States Department of Education, 2004) and the Missouri State Plan (Missouri Department of Elementary and Secondary Education [MDESE], 2004) define the following disabilities eligible for special education service: Autism, Deaf/Blindness, Emotional Disturbance, Hearing Impairment and Deafness, Mental Retardation/Intellectual Disability, Multiple Disabilities, Orthopedic Impairments, Other Health Impaired, Specific Learning Disability, Speech or Language Impairment, Sound

System Disorder, Speech Fluency, Speech Voice, Traumatic Brain Injury, Visual Impairment Including Blindness, and Young Child with a Developmental Delay. For the purpose of this study, the reference to special education and special education services is a reference to a Specific Learning Disability diagnosis. According to the Missouri State Plan (MDESE, 2004), a Specific Learning Disability is defined as:

> A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include retardation/intellectual disability, of emotional disturbance, or environmental, cultural, economic disadvantage, or limited English proficiency. (p. 25)

According to Fuchs, Fuchs, and Speece (2002), in 1977 the U.S. Department of Education crafted the regulations to implement The Education for All Handicapped Children Act of 1975, now known as The Individuals with Disabilities Education Act (IDEA). The department needed to provide a process and criteria for identifying students in the category of specific learning disability. Fuchs et al. (2002) further stated that the process needed to differentiate between students who had low achievement because of low ability, as measured by intelligence testing, and students whose low achievement was unexpected (those with normal or above normal ability or IQ) and could not be explained by other factors such as limited English proficiency.

To determine the existence of a severe discrepancy, state departments generally require the administration of standardized ability (e.g., IQ) tests and academic achievement tests, followed by a comparison of the standard scores of the tests. If this comparison shows that a student's achievement is well below his or her ability in at least one area (such as reading), then the student is eligible to receive special education services under the category of specific learning disability (Beldin & Wood, 2005). The Missouri State Plan (MDESE, 2004) defines a discrepancy for determining a child's eligibility for a Specific Learning Disability as a discrepancy of at least 1.5 standard deviations between achievement and intellectual ability. Further, according to the Missouri State Plan, 1.5 standard deviations are calculated as a 22-point spread between the intellectual testing score and the academic achievement test score.

Because of the state and federal requirement for a severe discrepancy between the child's achievement and ability levels, many schools have adopted a wait-and-see policy for determining when a child is ready for the necessary testing to take place (Brown-Chidsey, 2007). This wait-and-see method and the need for a severe discrepancy often cause many of the younger children in the educational system to fall further behind their peers (Brown-Chidsey, 2007). It has been the researcher's experience that the current testing systems make it very difficult for kindergarten students and children of five, six, or seven years of age to achieve the state and federal requirement level of discrepancy to be considered a candidate for special educational services.

At the time of this study, the special education process seemed to vary from district to district and state to state, but the basic steps were often similar. According to

the researcher's experience, the typical special education process often follows these basic steps. The student is identified by the classroom teacher as at-risk based on the student's performance on in-class assignments and assessments. The classroom teacher meets with a team of teachers to discuss the child's difficulties and to create a set of interventions for the classroom teacher to try with the child. The classroom teacher then carries out the interventions and reports the results back to the team. If the interventions are successful, they are continued. If the interventions are unsuccessful, a referral is made for special education testing. If the referral is successful, the child is placed in a special education class. If the referral is unsuccessful, however, the child returns to the regular classroom and interventions typically stop. These steps are illustrated using the algorithm in Figure 1.

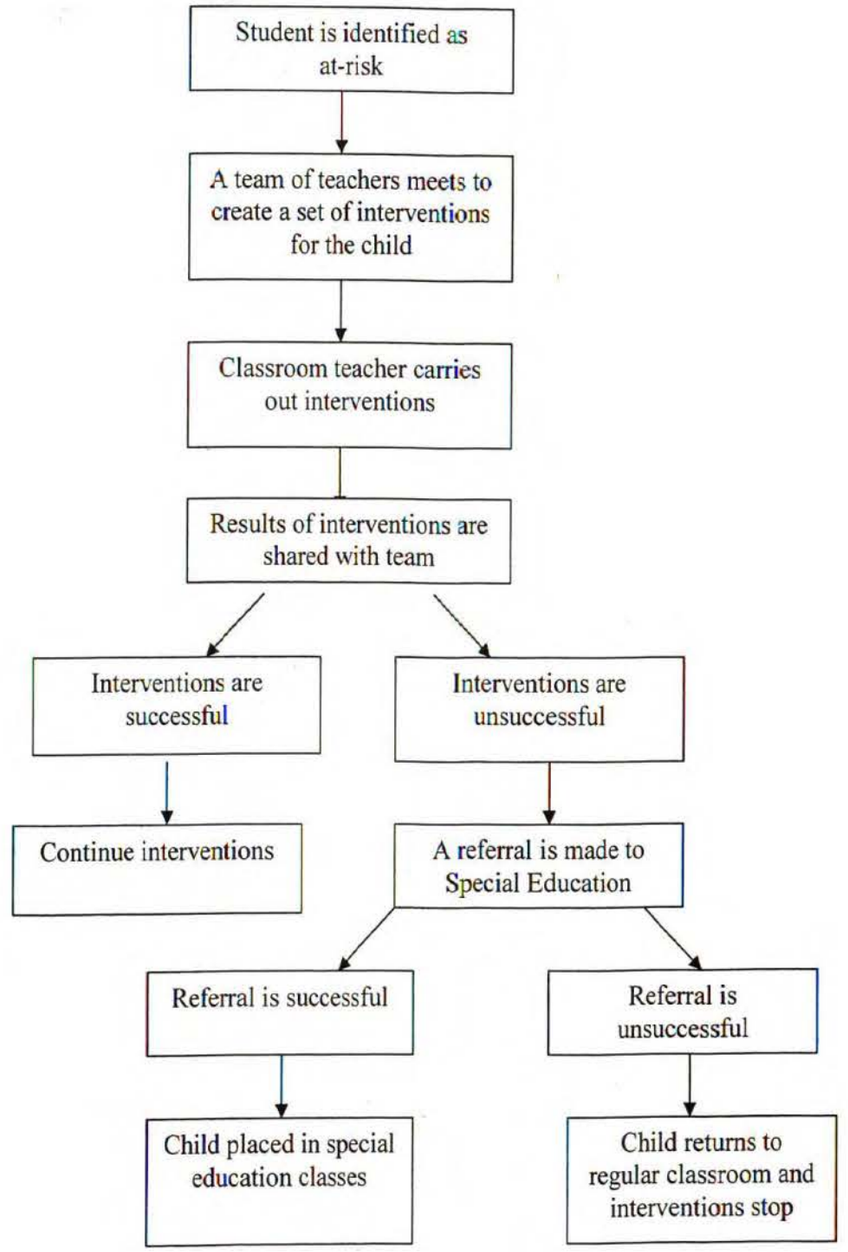

Figure 1. Algorithm Illustrating the Special Education Referral Process

It appears to the researcher that most school districts outline these procedures in a formal document. The steps are similar to those in Figure 1 but are tailored to meet the requirements of the individual district plan.

In 2004, Congress reauthorized the IDEA. This law was originally passed to ensure that all states provide a free, appropriate education (Samuels, 2005). The law has been amended several times over the past forty years. With each new reauthorization, Congress has made strides toward clarifying all rights that should be afforded children with disabilities. The 2004 reauthorization brought forth a major change in the process for identifying and intervening for children considered at-risk. At-risk children can now be identified by the classroom teacher and the student can start to receive assistance without formalized special education testing. School districts are given the opportunity to intervene using the Response To Intervention (RTI) model.

According to Martinez, Nellis and Pendergast (2006), RTI refers to a school wide system of providing intervention services through both the regular education and special education teachers. Brown-Chidsey and Steege (2005) further define RTI as "systematically evaluating the cause-effect relationship between an academic or behavior intervention and a student's response to the intervention" (p. 2). Congress called RTI "a process which determines if a child responds to scientific, research-based interventions" (Zirkel, 2006, p. 1). Congress further pointed out that the RTI schools can begin to service children using research-based interventions prior to testing a child for special education services using up to 15% of the schools IDEA federal funding for early intervening services. This early intervention time may allow schools to meet the needs of

the students much earlier and without the lengthy process normally associated with providing students appropriate interventions. The new process illustrated in Figure 2 helps eliminate the wait-and-see mentality and, in the researcher's opinion, opens the door to intervene with kindergarten students who previously had no services readily available to them. The other significant change in the special education process, with the addition of the RTI model, is that the interventions are now being monitored and adjusted on a regular basis. This monitoring allows the teacher to see exactly the interventions that are effective for the child and those that need to be altered to better meet the needs of the student.

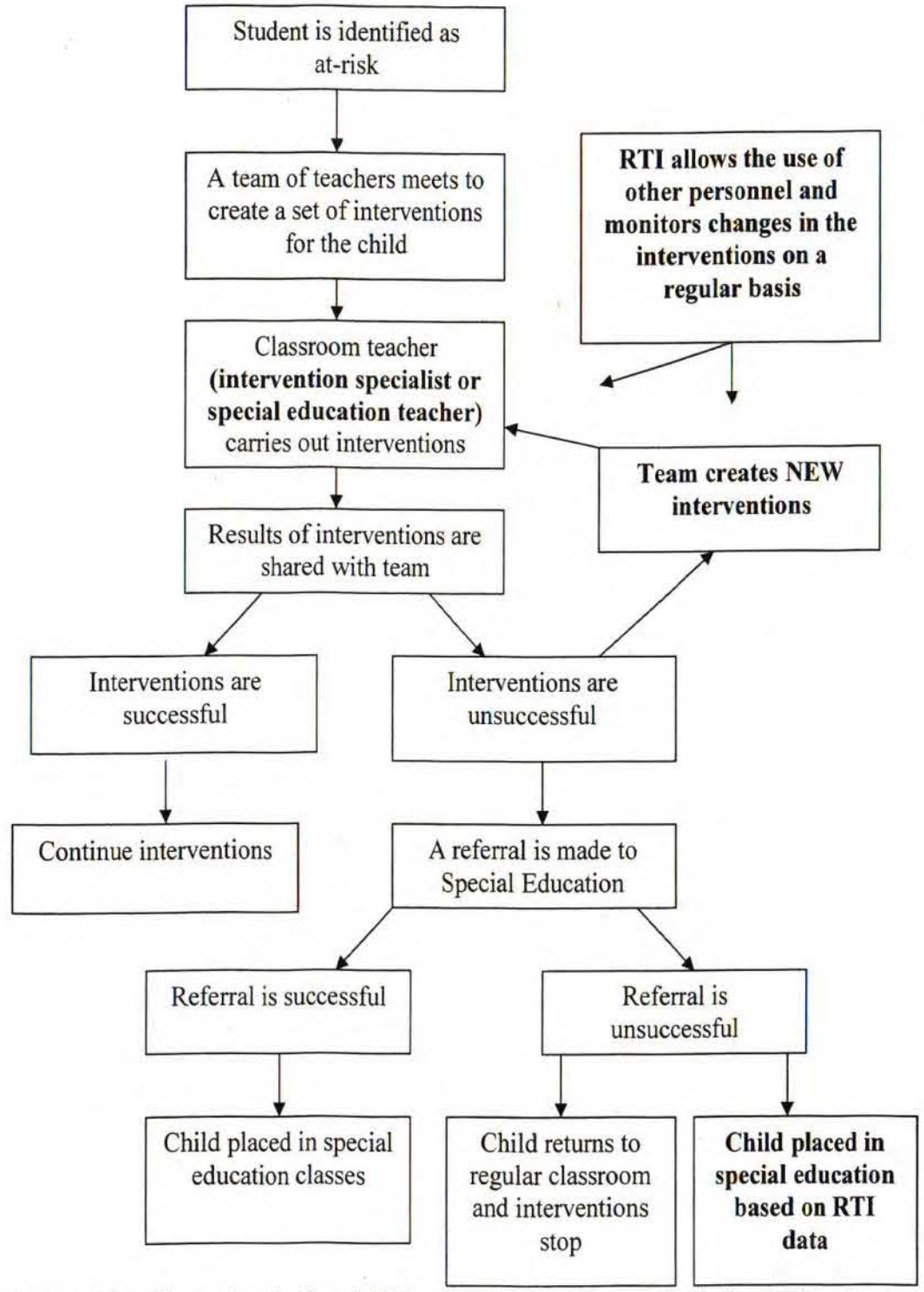

Figure 2. Algorithm Illustrating the Special Education Referral Process Including RTI

Note: The Response To Intervention (RTI) process is in bold.

Statement of the Problem

Many students enter school with limited exposure to the basic elements of reading and writing. This lack of exposure may put these students behind their peers at the start of their kindergarten school year. It may be the case that these students are considered at risk of failure by the regular classroom teacher due to their lack of basic skills. The current system, which employs the wait-and-see method, provides teachers no formal way of getting the necessary interventions needed in order for their students to be successful. It would seem that using the wait-and-see method for at-risk students causes those children, who started the school year behind their peers, to fall further behind. Once the child is sufficiently far enough behind, the teachers seem to use the only means they know for attaining the necessary interventions to help each child be successful, the special education referral process. This study was based on an elementary school principal's concern that necessary reading assessments and interventions are not being provided for children at the moment they enter kindergarten. By providing the necessary exposure to basic skills from the start of the school year, it is the belief of this researcher that there would be fewer children who require a formal special education referral. The needs of the children could be met though the introduction of a research-based intervention program.

Significance of the Study

At the time this paper was written, this researcher, as principal, believed that the accountability and expectations placed on public schools for providing an education that is meaningful and meets state and federal standards for all students were at an all-time

high. With higher expectations and accountability comes a necessity to reexamine all aspects of the educational setting to ensure that all children's needs are being met to help them meet the standards. The expectations of the No Child Left Behind (NCLB) Act and the Adequate Yearly Progress (AYP) have forced schools, states, and federal lawmakers to look for new ways to meet the needs of every student. The NCLB Act was signed into law by President Bush in 2002. This law brought higher expectations for all public schools. The law has the ambitious goal that every child will be a proficient reader by the year 2014. The NCLB Act described yearly expectations of growth that concluded with 100% of all students being proficient readers by the year 2014. These yearly expectations were identified as AYP. The law also described a series of penalties and mandates for schools that do not meet AYP for two years or more in a row.

While the testing to meet these state and federal requirements does not start until the child is in the third grade, the researcher, as principal, feels that the group neglected is early childhood students who are missing basic skills in the area of reading upon their entry into the school setting. It has been the experience of this researcher that if a child needs assistance in kindergarten and does not receive the extra help, the student's deficiencies will continue to grow. Once the child enters the third grade, the student will not have the necessary skills to meet the proficiency standards established and expected by the state and federal requirements.

By providing interventions to kindergarten students as soon as they show signs of falling behind their peers, teachers may be able to keep a child engaged and continuing to learn. The researcher has witnessed first hand, as teacher of kindergarten, second grade,

and third grade students, children who had difficulties in school and decided to give up. The researcher believes the system failed these children because early identification and intervention is the key to helping students become good readers. Research has shown that students' levels of achievement in reading throughout their educational careers can be traced to their reading abilities at the end of the first grade (Gersten & Dimino, 2006). It seems that once children experience failure at a level that requires special attention, their will to continue is almost non-existent. Further, it seems that this causes frustration for not only the child and teacher, but also the parents. Parents expect public schools to provide their children with all of the necessary skills to be successful members of the community. The educational system, as it exists at the time of this writing, has holes that allow students to fail because they do not meet a requirement on an assessment. Forcing a child to meet a discrepancy between the student's IQ score and academic performance may or may not be appropriate or accurate for the age of the child. In the opinion of the researcher, as principal, the instrument used to measure IQ for young children is not the most accurate measure of the child's ability level.

The purpose of this study was to determine if the implementation of a research-based intervention program, RTI, would increase the academic performance of kindergarten students identified as at-risk, based on the student's performance on a baseline measure conducted at the beginning of the school year, are compared to the same assessment conducted at the end of the first semester. Kindergarteners were tested and given interventions to improve their knowledge base for alphabetical letter recognition and letter sound recognition. These interventions were implemented to help

the children meet state and federal expectations within the same amount of time as their peers who did not need the interventions.

Hypothesis

There will be a significant increase in academic performance when at-risk students are correctly identified and given access to a research-based intervention program.

Limitations of the Study

The systematic approach to identifying special education students, without using the IQ discrepancy model, has been used for over 30 years (Beldin & Wood, 2005). With the reauthorization of the IDEA Law in 2004, school districts were required to implement an RTI model. The RTI model for identifying students with disabilities removes the necessity for a discrepancy between the child's intelligence score and academic performance. The RTI model allows schools to start interventions before a child has been diagnosed with a disability to determine the appropriate accommodations, modifications, or interventions necessary before a special education referral is made. The City of St. Charles School District determined that a pilot program should take place in an elementary school. The district decided that after one semester, the pilot school would provide the school board with a full report on the effectiveness of the intervention model. There are significant limitations to the effectiveness of a short term study.

Subjects. The students in this study were kindergartners considered at-risk by their classroom teachers based on their performance on a baseline assessment given during the first two weeks of school. These students were then given a series of research-

based interventions and monitored for successes and failures. These students' performances were then compared to the classroom averages of their current classrooms and to an average of kindergarten student scores gathered over a three-year period.

All of the students enrolled in kindergarten during that three-year period were either in the control or treatment group. All students in the treatment group were enrolled during the third year of the study. The students came from different backgrounds and the following variables could have limited accurate outcomes of this study.

Developmental age. Kindergarten students enter school at the age of five regardless of their developmental levels. All children mature and develop at different rates. The second developmental age limitation to this study was the rate at which these children mature and develop. Some students may not have been at the age-appropriate developmental level during the baseline assessment at the beginning of the year. It is possible that they may have matured naturally and improved their achievement on the assessment due to natural development without the treatment used in this study.

Environment. These students came from a wide range of living environments. Some students had parents who actively engaged their children in literacy components, such as letter recognition or name writing. Other children were not fortunate enough to have parents help them in these early literacy areas.

Prior schooling. Some children had attended a preschool or day care, whereas other students were not given the opportunity to start their formal learning until the first day of kindergarten. These day care environments introduced the children to a school setting along with the early literacy components. There were also a number of children

who participated in a Parents As Teachers program. Parents As Teachers is a school district sponsored program where a parent educator, for the school district, goes into the home starting from the time the child is born and helps the parents to identify the child's progress toward natural milestones. The parent educator is trained to identify and intervene with children who are displaying characteristics of an at-risk child before the child enters kindergarten.

Instrumentation. The Rigby Literacy Assessment, a division of Harcourt Supplemental Publishers, was used as the assessment instrument in this study. This assessment was given to every kindergarten student. The possibility for inconsistencies existed because multiple teachers tested students at different times of the day. Since students are fresher and more alert at the start of the day, the testers had to be aware of fatigue when testing the students. The classroom teachers attempted to test all children during the morning hours of the school day, but in special circumstances children were tested later in the day, in an effort to complete the assessment in a timely manner. This fatigue factor also needed to be taken into account as a possible reason for variations in the data, when students were tested both before and after the kindergarten rest period that occurred in the middle of each school day. Unfortunately, the test time was not documented; thus the effects of the test times on student academic performance cannot be substantiated.

Implementation. This study looked at assessments given over a three-year period. Assessments in the first year were administered by the teachers as they learned the new Rigby Literacy Assessment materials. These materials were new for the faculty, and most

of the teachers had not previously given an assessment of this type to their students. There was the possibility that the students' results in the later half of the assessment period were assisted by the teachers' experience and comfort level over the three years in administering the assessment, and therefore, the results may have been skewed.

During the third or *treatment* year, at-risk kindergarten students were identified based on their performance on the Rigby Benchmark Assessments. They participated in the interventions or treatment and were then given the Rigby Benchmark Assessments a second time by the intervention specialist and not by their homeroom teacher. The effect of a second teacher assessing the students has to be considered because the students may have performed differently for the person facilitating small group instruction, as opposed to whole classroom instruction. In addition, the two testers may have had different testing expectations for the students. The students may have also had an improvement in their assessment levels as the school year progressed, due to teacher familiarity with the students' ability levels. Teachers may have assumed correct responses because of believing they knew what the child meant to say, based on the child's performance in class outside the testing area.

Maturation. The baseline assessment was given at the beginning of the school year, when the classroom teachers were still unfamiliar with their students. As the school year progressed, the teachers, after working with the students on a daily basis, may have learned the students' learning styles. The assessment could have been skewed by the teachers as their own knowledge of the students had increased. For example, a child who performed poorly on the assessment, but who had been performing the skills on a regular

basis in the classroom, might have gotten a second chance to improve his/her assessment scores by a teacher who knew the child was having a bad day or simply not trying his/her best on the assessment. This could not occur at the beginning of the school year, since the teacher had no frame of reference which to compare the child's performance.

Testing. The frequency that the Rigby Literacy Assessment was given could have been a limitation to this study. During the three-year period of data collection, the control groups were given the Rigby Literacy Assessment once a quarter, plus a baseline assessment at the beginning of the year, for a total of five assessments in a given school year. During year three of the data collection, students were placed in the treatment group, based on low scores on the initial assessment. These identified students received additional interventions to help them achieve academic success, which would be considered closer to that of their peers. This group of children was given the Rigby Literacy Assessment every three weeks, after the baseline assessment was given. These students were tested more frequently to determine the success or failure of the interventions the children were receiving. If a child was progressing at the same rate as the student's classmates, the interventions stayed the same. If the student's performance on the assessment showed that the interventions were unsuccessful or that the student was falling further behind the student's peers, then additional interventions were put into place, based on the assessment results. The additional assessments were necessary to determine the need for an increased number of interventions, before the student fell too far behind his/her peers. The extra exposure to the assessment instrument could have been a factor in the treatment group assessment results.

Mortality. Because the data for this study was gathered over a three-year period, students who moved in or out of the study, as the school years progressed, must be taken into account. Since the achievement levels of the treatment groups were compared to the control group, those averages could have been affected by the mobility of the students within each classroom. It is possible that a lower achieving student moved out and was replaced by a higher achieving student. Therefore, when the class average was compared to results of the treatment group, the new student could have inflated the overall mean of the class, without any additional instruction for the group.

Attitude of subjects. Student behavior and classroom size were factors that were also considered. Each school year the level of behavior concerns differs from class to class. When creating a new class of kindergarten students, it is possible to have a high number of students who experience more difficulty in the classroom than in other years. During the three years of this study, there was one group of children who had a significantly higher rate of office referrals compared to the other two years' classes of kindergarten students in this study. These additional classroom disruptions may have been a factor in some students not receiving the same level of instructional minutes. In addition, there were classes that were larger than others in the study. By having additional students in a classroom at a given time, the classroom teacher had less time to work on literacy skills on an individual basis.

Definition of Terms

At-risk students. For the purpose of this study, at-risk students are students who are performing academically at an inadequate level or a significantly lower level when compared to the students' peers.

Discrepancy model. This model of identifying students for special education requires a split or discrepancy between the child's intelligence score and the child's performance on academic testing.

The Individuals with Disabilities Education Act (IDEA). This act started as The Education for All Handicapped Children Act of 1975. It mandated a free appropriate public education for all children with disabilities, ensured due process rights, and mandated Individual Education Programs (IEP) and Least Restrictive Environment (LRE). In 1990, the Act was renamed the Individuals with Disabilities Education Act (United States Department of Education, 2004).

Individual Education Program (IEP). An IEP is written and maintained on each identified special education student. The program outlines an educational plan and modifications that are necessary to help the student achieve his/her academic goals.

Intervention. An intervention is a change in instructing a student in the area of learning or behavioral difficulty to try to improve performance and achieve adequate progress.

Intervention specialist. An intervention specialist is a certified teacher who performed the actual intervention with identified at-risk kindergartners during the 2007-2008 school year at Harris Elementary School.

Learning teams. A learning team is a group of classroom teachers, counselors, principals, and parents who meet to discuss and plan appropriate interventions to help at-risk children meet their full potential. This team also meets to determine if a child will be sent for a special education referral to the district special education coordinator.

Least Restrictive Environment (LRE). A learning environment that is determined at a student's IEP meeting is called a LRE and is defined as the environment that is closest to the regular educational setting, while still meeting the student's special needs.

Progress monitoring. The regular monitoring and collection of student scores of assigned Rigby Assessments is called progress monitoring. The data collected was monitored in the form of graphs.

Response To Intervention (RTI). A RTI is an educational intervention that is an integrated school-wide practice that targets high-quality instruction and research-based interventions toward student educational needs. Data regarding student response to a specific intervention is used to make decisions about the effectiveness of the intervention and to guide further intervention, including the provision of special education (specialized instruction) and related services (Bender & Shores, 2007).

Special education. Special education is a title for a class or private instruction that involves techniques, exercises, and subject matter designed for students whose learning needs cannot be met by a standard school curriculum.

Specific Learning Disability (SLD).

A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in

> an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. This term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. This term does not include children who have learning problems that are primarily the result of vision, hearing or motor disabilities; mental retardation; or environmental, cultural or economic disadvantage. (Knoblauch & Sorenson, 1998, p. 2)

Summary

The problem statement for this study was based on an elementary school principal's concern that necessary reading assessments and interventions are not being provided for children at the moment they enter kindergarten. Many students enter school with limited exposure to the basic elements of reading and writing. This lack of exposure may put these students behind their peers at the start of their kindergarten school year. It may be the case that these students are considered at risk of failure by the regular classroom teacher due to their lack of basic skills. The purpose of this study was to determine if the implementation of a research-based intervention program, RTI, would increase the academic performance of kindergarten students identified as at-risk, based on the student's performance on a baseline measure assessed at the beginning of the school year, compared to the same assessment conducted at the end of the first semester. A brief description of the process follows.

The interventions were introduced to kindergarten students considered to be at-risk by their regular education teachers. The classroom teachers, along with an

intervention specialist, used a systematic approach called RTI. The classroom teachers identified students through a research-based assessment and referred them to the intervention specialist. The intervention specialist then used research-based interventions and the RTI model to assist the at-risk students to acquire the necessary basic reading skills to be successful in school. The intervention specialist then taught and assessed each child's progress and compared the student's success rate to that of the children not receiving the additional intervention time. The intervention specialist then adjusted the student's amount and type of interventions accordingly to help the child make sufficient progress, when compared to that of the student's peers. The at-risk students were taken through a systematic approach to receiving these interventions at an ever increasing or decreasing level, depending upon their individual needs. Once a child had achieved a consistent rate of growth that was comparable to the student's peers, the interventions were continued at that particular rate.

The hypothesis for this study was that there would be a significant increase in academic performance when at-risk students are correctly identified and given access to a research-based intervention program. The framing literature will be reviewed in chapter 2. The following topics will be discussed; (a) The History of Special Education Legislation, (b) NCLB Act, (c) RTI, (d) Rigby Literacy, and (e) Early Childhood Literacy.

Chapter Two - Review of Literature

Historically, it seems that students who required additional assistance in the classroom had a very limited number of strategies and additional help available to them. The first option was to have the child placed in the classroom of a dynamic teacher, who took an active role in differentiating instruction to meet the needs of every child in the class. The second, and most widely used option, was to start the special education referral process. Students who received neither option were often left to struggle on their own from grade level to grade level. Special Education was seen as a way to help children acquire the skills they lacked, in order to close the achievement gap between special education students and non-disabled students. Samuels (2005) found that of the nearly 6.8 million students diagnosed with a disability, nearly half of them fell under the category of Specific Learning Disability (SLD).

The purpose of adding interventions for non-diagnosed students was to help them meet the challenges of a regular education classroom and gain the ability to do the same work as their non-disabled peers. The concept of helping children catch up by providing them with special education services has not proven to be what is actually happening with children receiving special education services. The Report of the Commission on Excellence in Special Education of 2002 stated that only 1.8% of students who were placed in special education programs with a SLD returned to the classroom (U.S. Department of Education, Office of Special Education and Rehabilitative Services, 2002). The Commission further expressed that few children in special education close the achievement gap to a point where they can read and learn like their peers. According to

the Commission report, special education students not only fail to return to the regular education classrooms with their non-disabled peers, but many of them fail to graduate from school. Further, the Commission report stated that the national drop-out rate for special education students is 31.2%, which is substantially higher than the 25.7% drop-out rate for children not receiving special education services.

The National Research Center for Learning Disabilities contended in the 26th Annual Report to Congress (2004) that the drop-out rate is actually higher, reporting that nearly 36% of students with disabilities drop out of school before graduation. The Center further indicated that (a) of the remaining 64% of the students who stay in school through graduation, only 57% of the special education children graduate with a standard diploma; and (b) of those students who remain through graduation and receive a diploma, two-thirds of them were rated entirely unqualified to enter a four-year college, compared to 37% of non-disabled students (U.S. Department of Education, Office of Special Education and Rehabilitative Services, 2004).

The problems with special education seem not to be limited to high school students trying to graduate. In a longitudinal study conducted by the National Joint Committee on Learning Disabilities (2005), it was discovered that more than one-third of all students identified as having a learning disability and placed in special education services had been retained at least once during their education, primarily in the elementary setting.

It is the opinion of this researcher that the racial disparities between students who have and have not been diagnosed as having a SLD are enough to cause alarm among

educators. The over representation of SLD problems seems to be even worse for minority students in the school setting. According to the National Research Council's report (2002), Black students are diagnosed as mentally retarded twice as often as their White peers. Further, it was noted in the 2002 report that in the specific learning disabilities area of Emotional/Behavioral Disorders, Black students were diagnosed one and a half times more frequently than their White peers. Also noted in the report was that Hispanic and Native American students are over represented in the areas of Learning Disabilities, when compared to their White peers. If these facts are true, it would seem that the minority students in schools today have a higher chance of being labeled with a special education diagnosis and could, therefore, have a higher probability of never graduating from high school.

It is the researcher's opinion that many minority students enter school with a disadvantage. They seem to lack exposure to basic literacy at home at a higher rate than non-minority students. Students who have not been exposed to alphabetical letters, letter sound phonemics, or written language could be at higher risk of being placed in a special education setting. If the above is true, it may be the case that the lower level of exposure creates a higher number of minority students represented in the special education setting. Perhaps, if these minorities, or other at-risk students, had an opportunity to be exposed to basic reading and writing skills, they might not be referred to a special education setting.

Dickson and Bursuck (1999) stated that early intervention is the best way to help children improve their reading and to reduce the number of students identified as learning disabled. Long (2005) found that 80% of children who were referred for a special

education evaluation were referred because of difficulties with reading. It is the researcher's belief, as an elementary school principal, that the previous systems used to identify students who qualified to receive interventions were conducted in such a way that often students had to wait and fail before they received any interventions. The researcher further believes that the longer the wait, the more likely a child is to be at risk of becoming labeled as a special education student.

With the reauthorization of IDEA in 2004, students had a third option for receiving assistance. This assistance came in the form of the RTI model, as outlined in the special education law. Under the reauthorization of IDEA, students could start receiving special assistance or interventions prior to an actual special education referral. It was the experience of the researcher that this was a significant change in the way children were receiving services by schools. Suddenly, students who were considered at-risk or behind their peers could receive the interventions that were previously reserved for special education students. An additional benefit was that these interventions could be administered to students without the stigma associated with a special education diagnosis.

To better understand this new way of meeting the needs of learning disabled children in a public school setting, it is important to know the history of special education law and how those laws evolved into this new format. This chapter begins with the history of special education law and concludes with the following topics: The No Child Left Behind (NCLB) Act, an expanded explanation of the RTI process, Rigby Literacy, and Early Childhood Literacy.

History of Special Education

According to reports obtained from the United States Department of Education, in 1970 only one in five children with disabilities received a public education. The United States Department of Education further reported that many states had laws that excluded children from public education because they had disabilities such as deafness, blindness, mentally retardation or emotionally disturbance (Yell, Katsiyannis, and Hazelkorn, 2007) and (Martin, Martin and Termann, 1996). Martin, Martin and Termann (1996) found that prior to the 1970s, millions of children with disabilities were refused or were inadequately served by public education. Yell et al. (2007) believed that people with disabilities prior to 1975, had only two choices for public education: they were excluded or received an education that did not meet their individual needs. Yell et al. (2007) also found that "in 1974 … 1.75 million students with disabilities did not receive educational services" (p. 1) and that "more than 3 million students that were admitted to school did not receive an education that was appropriate to their needs" (p. 2). According to Weiss (2000), in the mid-1970s, the federal government began to lay a framework to educate all children in the United States, regardless of their disabilities.

The foundation to educate all children in America, regardless of their disability, developed through a series of laws passed by legislators. Weiss (2000) noted that states could avoid implementation of special programs based on not having the resources available to meet the new demands. The new laws outlined the need for funding of special programs. Weiss (2000) found that the federal courts ruled based on the fourteenth amendment that public schools could not discriminate based on a child's

disability. The court also ruled that the parents of disabled children had the right to due process relating to their child's schooling, if they were in disagreement with the public school system.

In 1965, Congress passed The Elementary and Secondary Education Act of 1965 (ESEA). This law was intended to strengthen and improve the quality of education in the nation's elementary and secondary schools. This law provided a comprehensive plan and, once again, addressed the inequality of educational opportunities for economically underprivileged children. It became the statutory basis upon which early special education legislation was drafted. According to Weaver (2006), the ESEA of 1965 was part of President Lyndon B. Johnson's War on Poverty. The researcher of this study believes that the passage of the ESEA was the landmark legislation that began to create a school setting that would be equitable for all children. While this law was a significant piece of legislation, it was not without flaws and loopholes that have been the basis for numerous reauthorizations and updates to create a better education system (McConnell, 2007), with the first amendments coming only eight months after the law was passed.

The 1960s was a decade when Congress attempted to expand the new special education laws. Funding was authorized for groups of children, such as the deaf or blind, and for individual schools rather than state run institutions. During this time, national advocacy groups emerged. Examples include the National Advisory Council (now known as the National Council on Disability) and the Bureau of Education of the Handicapped (Martin et al., 1996).

In the 1970s, the amendments to the ESEA continued, but there was a change in the focus of the amendments. Leafstedt, Itkonen, Arner-Costello, Korenstein, Medina & Murray (2007) stated that the 1970s marked a change in special education law from laws that focused on providing students with access to laws that focused on providing students with some education, or to a focus on an appropriate education according to each child's individual needs. It is the researcher's opinion that because of this switch in focus, one of the most important laws from the 1970s was The Education for All Handicapped Children Act of 1975. This law was significant because it mandated a Free, Appropriate, Public Education (FAPE) for all children with disabilities and included special education and related service programming. This, according to Weiss (2000), gave parents more rights to participate in their children's education. Further, this law mandated IEP's—plans that defined the type of service and duration of time in a special education classroom a child needed in order to meet the goals identified in the IEP. Finally, Weiss (2000) pointed out the significance of FAPE, which was that all students would be placed in the least restricted environment (LRE). The LRE ensured that students with disabilities were allowed to attend classes with their non-disabled peers, and were not held in special education classes simply because of their handicapping condition.

In 1983, a report was released by the National Commission on Excellence in Education called A Nation At Risk. DuFour and Eaker (1998) described this report as the catalyst for a flurry of school improvement initiatives described as the Excellence Movement. The researchers argued that the Excellence Movement was a call for schools not to do anything new, but simply to do more of what they were already doing. This

consisted of an increase in graduation requirements, more rigorous homework, and more frequent student testing. While most of the legislation passed in the 1980s did nothing new, according to Eaker and Dufour (1992), The Education of the Handicapped Act Amendments of 1983 helped lay groundwork for future initiatives with younger children by expanding incentives for preschool special education programs, early interventions, and transition programs.

President Gerald R. Ford signed the original version of the ESEA over thirty years ago, and in the 1990s it was renamed The Individuals with Disabilities Education Act (IDEA). The new name did not stop the number of revisions throughout the 1990s. Each revision resembled the small changes that dominated the first 30 years of the law's existence. Dufour and Eaker (1998) called the new revisions the "Restructuring Movement" for public education. This restructuring was recognized for its development of National Education goals and standards. Leafstedt et al. (2007) noted that education's focus in the 1990s was shifted from granting children educational access to the results of the education these children were receiving. Leafstedt et al. (2007) went further to say that they believe this shift took place partially because of the standards-based reform and accountability movements in general education.

Congress reauthorized the 1990 IDEA Law through the IDEA Amendments of 1997. The reauthorization of IDEA was an opportunity to review, strengthen, and improve it. According to Parents United Together (n.d.), Congress took advantage of the opportunity to review, strengthen, and improve the IDEA legislation by (a) strengthening the parents' role; (b) ensuring access to the general curriculum and reforms; (c) focusing

on teaching and learning while reducing unnecessary paperwork requirements; (d) assisting educational agencies in addressing the costs of improving special education and related services to children with disabilities; (e) giving increased attention to racial, ethnic, and linguistic diversity to prevent inappropriate identification and mislabeling; (f) ensuring schools are safe and conducive to learning; and (g) encouraging parents and educators to work out their differences by using non-adversarial means.

In 2004, Congress reauthorized the IDEA law again. This new reauthorization clarified the special education laws requiring the use of the discrepancy model for identification of a specific learning disability and brought new attention to the teacher practice model known as RTI. On July 1, 2005, a series of amendments to the IDEA went into effect. The amendments addressed the changes that were pertinent to SLD eligibility. According to Zirkel (2006), the amendments clarified the IDEA law in the following ways: (a) revised the severe discrepancy approach for identifying SLD from mandatory to non-mandatory status; (b) expressly permitted RTI, defined by Congress as a process which determines if a child responds to scientific, research-based interventions; and (c) provided for the use of up to 15% of IDEA funds for early intervening services.

No Child Left Behind (NCLB).

In January 2002, President Bush signed the NCLB Act. This law made the most sweeping changes in federal law regarding public schools in nearly 40 years, since the original adoption of the ESEA of 1965. The passage of the NCLB Act redefined the federal role in kindergarten through twelfth grade (K-12) education to help improve the academic achievement of all American students. The act included new and significant

accountability measures for all public schools. It was based on the ambitious goal that all children would be proficient in reading and math by 2014. The NCLB Act stressed accountability and was designed to close the gap between disadvantaged, disabled, or minority students and their non-disabled peers. Congressional mandates and administration priorities under NCLB focused on four principles: (a) accountability for results, (b) research-based programs and practices, (c) expanded parental options, and (d) expanded flexibility and local control (Cortiella, 2006).

Accountability was the core of the NCLB Act, which required all fifty states to establish a system for and set targets for AYP. The system was developed with goals that were based on local school districts' 2002 academic performances in reading and math. The NCLB goal for the 2014 school year was for 100% of students to be at or above grade level in both reading and math achievement (United States Department of Education, 2004).

According to the United States Department of Education, student consideration and monitoring efforts were outlined in the NCLB Act (United States Department of Education, 2004). The Act required that all states that accept federal funding would be responsible for the achievement of students in five disaggregated subgroups (Cortiella, 2006). The students' academic performance would be disaggregated in the following groups to ensure results for all children: Race, Ethnicity, Socioeconomic Status, Limited English Proficiency, and Special Education. Students' academic scores in each of these groups were required to meet the final AYP goal of 100% proficiency by the year 2014.

Mandating performance requirements for all subgroups was the way Congress addressed the need for closing the achievement gap between students in the various groups. If a school or school district did not meet AYP for two years in a row in any one of the subgroups, the school or school district would be designated as *needs improvement*. The designation of needs improvement brought with it additional requirements by the federal government for making the necessary improvements for student performance in that school or school district (United States Department of Education, 2004).

The NCLB Act stipulated that students in every year in grades three through eight and once in grades ten through twelve must be given proficiency exams in reading and math. These exam scores would determine the school's success or failure to meet AYP for that particular year. All results from the yearly exams and their comparison to the AYP standards must be made available to all parents. It was mandated that these reports be available at the school, district, and state levels.

As stated by Cortiella (2006), The NCLB Act required all 50 states to put a highly-qualified teacher in every public school classroom by 2005. The bill made it easier for local schools to recruit and retain excellent teachers. The NCLB Act put emphasis on determining which educational programs and practices were proven effective through rigorous scientific research. Federal funding was targeted to support programs and teaching methods designed to improve student learning and achievement.

In addition to the new reporting methods, the NCLB Act provided new options for parents living in a failing school or school district. Parents had three choices that went

into effect immediately upon the failing of the school. First, parents with children in failing schools were allowed to transfer their children to a better-performing public or charter school. Second, NCLB allowed the school that accepted transferred students or the failing school to use Federal Title I funds to provide supplemental educational services including tutoring, after school services, and summer school programs for children in failing schools. Finally, The NCLB Act expanded federal support for charter schools by giving parents, educators, and interested community leaders greater opportunities to create new charter schools.

States and local school districts were previously bogged down with bureaucratic expectations in the laws. The NCLB Act took steps to help local districts make changes in their programming more quickly in order to meet the needs of the children as they strived to meet AYP. NCLB allowed all states the freedom to transfer federal funds, up to 50% of what they received, to several different programs without having to get approval for each individual program developed to meet the needs of its students. Additionally, for the first time, all 50 states had the liberty to transfer up to 50% of the non-Title I state activity funds received from the federal government, among an assortment of early intervention programs, without advanced approval. This gave local school officials and districts more flexibility and a voice in how federal funds were used in their schools (United States Department of Education, 2004).

Response To Intervention (RTI).

When the federal government reauthorized IDEA Law in 2004, opportunity emerged for school districts across the country to move away from "the requirement that

a child must evidence a severe discrepancy between intellectual functioning and academic performance" (Holdnack & Weiss, 2006, p. 874) for determining eligibility of a student to be identified with a specific learning disability. According to Martinez et al. (2006), the move away from the discrepancy model, as the sole source for identification of children who require special services or interventions, helped eliminate some of the flaws in the identification process caused by the discrepancy model in the past.

The information used in the discrepancy model may have been unreliable, because it was gathered at only one point in time. The use of the discrepancy model alone for providing students interventions could directly impact younger learners. This was emphasized by the fact that the discrepancy model was based on a wait and fail model (Martinez et al., 2006). By providing educators the opportunity to intervene prior to a formal evaluation, children began to receive the additional help they needed at the first sign of a struggle and no longer had to wait until they had failed or fallen far enough behind to meet the required discrepancy between their achievement and their ability scores.

Beldin and Wood (2005) wrote that provisions in IDEA 2004 prevent the State Educational Agency from requiring school districts to use a discrepancy model for eligibility determination. The authors went further to state that the law required the State Educational Agency to allow districts to use a process that determines how a child responds to a scientific, research-based intervention as part of the evaluation procedure when determining eligibility for a specific learning disability. This process was commonly referred to as Response To Intervention (RTI).

The passage of IDEA 2004 brought new and greater attention to the RTI provisions. The model was geared to help students with the potential of having specific learning disabilities before they fell further behind their peers in performance (Samuels, 2005). According to the National Joint Committee on Learning Disabilities (2005), the force behind the expanded interest in the RTI model was the educator's ability to provide early interventions when students first experienced difficulties. Gersten and Dimino (2006) believed that the RTI model was to be a great new hope in early interventions for at-risk students. They also believed there was additional hope that once a RTI program was established in a school setting, the number of children inappropriately placed in special education would decrease. Ofiesh (2006) discussed how RTI had the possibility to help reduce the number of overrepresented student populations in special education. Justice (2006) stated that students who entered school with language difficulties were often diagnosed with a specific learning disability. Justice (2006) further stated that many of these students would not be in special education services, if the appropriate interventions were administered to the children upon their arrival in a formal school setting. She argued that schools could reduce the number of students considered at-risk of having a reading disability by using a leveled series of interventions as outlined in a RTI model.

A key aspect to the rapid growth of the RTI is the provision in the IDEA Amendments that went into effect on July 1, 2005. The provision allowed school districts to use federal special education dollars to fund early intervening services (Zirkel, 2006) that addressed students' needs prior to a special education referral. The design of the

programs was up to the individual school district. Schools could use RTI with their current methods of instruction as a way to provide teachers and administrators more specific data about a child's learning and a better way to make decisions (Samuels, 2006).

Schools have utilized many versions of the RTI model. Even though there are variations, a number of features are common and necessary to make a program successful. These core features ensure that the program is being implemented in a way that will help children to be successful. In the Common Ground Report (National Research Center on Learning Disabilities, 2002), eight professional groups met and discussed the core features in a RTI model. Members representing the National Association of School Psychologists, the American Speech-Language-Hearing Association, the Council for Exceptional Children/Division for Learning Disabilities, the International Reading Association, the Association for Higher Education and Disability, the International Dyslexia Association, the Learning Disabilities Association of America, and the National Center for Learning Disabilities all participated in the RTI discussion. Representatives for these groups agreed that the core features of any RTI model should include the following: high quality classroom instruction, research-based instruction, classroom performance monitoring, universal screening, continuous progress monitoring, research-based interventions, and fidelity measures (Marston, 2005).

The RTI model gained the most attention following the reauthorization of the IDEA in 2004, and it has been the experience of the researcher as elementary school principal that many RTI models consist of three tiers. These tiers take the commonly agreed upon components of an RTI program and organize them into a systematic

approach to meet the student's needs. Fuchs and Fuchs (2006) identified the multi-tier approach as "the nature of the academic intervention … becoming more intensive as the student moves across the tiers" (p. 94). Strangman, Hitchcock, Hall, Meo, and Coyne, (2006) believed that there was a standard process for RTI. They describe it as a three-step process that includes "1) screening for at-risk students, 2) monitoring of responsiveness to instruction and 3) determination of the course of action" (p. 3). These steps take place at all three levels of the three-tiered model. It is the opinion of the researcher from experience in an elementary school that has implemented an RTI program that there are three additional steps to those mentioned by Strangman et al. (2006). First, once an action is determined and has been carried out, there is a need to evaluate the action. Second, another plan of action should be implemented at the same tier level. Third, evaluation of the second action should take place before a child is moved to the next tier of the program, where the process would begin again at "step one" of the Strangman et al. model.

The following section is an explanation of the three-tiered model implemented with the RTI program as it was experienced by this researcher, who was a principal at an elementary school at the time of this study. Prior to any student being placed in an intervention program, all students were universally screened. A universal screening refers to providing every student the same assessment instrument to determine children considered at-risk within a specific grade level or school building. For the purpose of this study, that screening tool was the Rigby Literacy Benchmark Assessment.

The Rigby Assessment was used to determine which students were not responding to the general education instruction or who were behind their peers in basic academic knowledge and would benefit from an intervention program. It was important to screen all children using a common instrument and not focus on just those students who were suspected of having a disability. Some students may have learned coping skills that could have masked a disability. Other students may have had a weakness due to lack of exposure, or other difficulties, and could show up as at-risk. With the at-risk label, students could be placed in a special education setting when they did not need that level of special instruction. Jenkins, Hudson, and Johnson (2007) had the opinion that by testing all students, the school could be sure that the students who needed to be more closely monitored were identified and received the assistance. Jenkins et al. (2007) stated that those students who were identified had the opportunity during the intervention phase to show, through further assessments, that they may have been inappropriately placed.

In Tier One, the regular classroom teacher monitored all of the children and their responsiveness to general education instruction. "Tier One instruction is part of the general education curriculum and takes place in the regular classroom," (Tilly, 2006 p. 16). Tier One interventions were available to all students in the classroom and were carried out by existing personnel. The interventions and curriculum were research-based, but their effectiveness depended on the effective implementation by the instructor, who was working with the child (Beldin & Wood, 2005).

Fuchs & Fuchs, 2006 stated that in one study, Tier One interventions, while appropriate for all students, proved to be an effective source of interventions for

approximately 80% of the school population. Once a child was found to be non-responsive or his/her response to the interventions was not significant enough to allow the child to achieve at the same level or rate of the student's peers, the child was placed on Tier Two of the RTI intervention model.

In an RTI model, Tier Two was available for approximately 20% of the school population, those students who were not successful with the Tier One assistance. Once a child was moved to Tier Two, the student received more intensive research-based interventions. According to Daly, Martens, Barnett, Witt, and Olson (2007), students in Tier Two received more intensive interventions in the form of more frequent sessions or a reduction in the number of children in an intervention group. The interventions that were put in place to help boost a student's achievement were monitored on an individual basis. Tilly (2006) pointed out that even though the children are receiving individualized interventions, Tier Two is still a part of the regular education setting. The student's progress, using the interventions in Tier Two, was monitored in short periods of time to determine if the intervention was succeeding (Samuels, 2005), and data were collected on each intervention. The collected data should be graphed and compared to the performance of those students who were not receiving the intervention, and the interventions and the data collection of those interventions should be conducted in a systematic manner that allows the classroom teacher to differentiate between the effectiveness of the intervention and other factors that may have contributed to the student's successes or failures in an RTI program.

Mellard (2004) wrote that the purpose of monitoring the student's performance could be two-fold. The first and primary reason was to determine the child's needs and learning styles and to adjust the interventions to help the child succeed. The second reason was to document the interventions tried, including both successes and failures, in order to serve as part of a special education referral if necessary.

In a RTI model, students who were showing improvement remained in Tier Two and continued the interventions until they progressed at a satisfactory rate equal to, or greater than, that of their peers. Tier-Two students had their performance measured and compared to the rate of growth of their peers not receiving the interventions. The continuous progress monitoring feature seems to be one of the most important to the success of a RTI program.

In a RTI model, of the original 20% of students placed on Tier Two, approximately 5% of the total population was not responding to the interventions or their progress was well below the normal expected progress. This group was moved to Tier Three of the RTI model and began to receive more intensive interventions. These interventions included a consideration for a referral to special education. Brown-Chidsey and Steege (2005) argued that, "Tier 3 does not include special education services; rather, it is a transition point for those students who have not found success in school" (p. 3). After students were placed on Tier Three, they received the additional interventions and the students' success rates were being compared to that of their peers. If a student's performance data suggested that the student was still not working at peer level, a referral

for a special education review was considered in order to acquire additional help for that student.

Marzano, Pickering, and Pollock (2001) identified seven guiding principals for providing feedback to students:

> 1) Instructional goals narrow what students focus on, 2) instructional goals should not be too specific, 3) students should be encouraged to personalize the teacher's goals, 4) feedback should be corrective in nature, 5) feedback should be timely, 6) feedback should be specific to a criterion, and 7) students can effectively provide some of their own feedback. (pp. 94-99)

Perhaps the RTI model can be a valuable instrument to help children during these stages using guidelines described by Marzano et al. (2001) to help children progress through the three tiers of an RTI program. Within any of the three tiers, a child can be moved up or down based on performance. Once the appropriate tier is found and the child is showing success, the child remains at that level and additional data are collected and monitored.

Rigby Literacy

For this study, The Rigby Benchmark Assessment, a part of the Rigby Literacy Program, was used to measure student achievement. It was used as the assessment instrument to determine which students might be considered at-risk of failure and in need of extra interventions. The Rigby Literacy was chosen partly because, at the time of this study, it was the reading program being used by The City of St. Charles School District and has undergone significant scrutiny.

In a report released by the Mid-continent Research for Education and Learning (2005), six reviewers from various areas of expertise within early reading and representatives of geographic regions across the United States reviewed the effectiveness and research base of the Rigby Literacy program. The researchers included the following experts: Dr. Shelia Potter – English Language Arts Content Specialist/Former State Department of Education Coordinator, Michigan; Dr. Joann Kostka – District Literacy Leader, Minnesota; Dr. Rhonda Farkas – Principal, New York City; Ms. Lynn Wilson – District Literacy Coordinator, California; Ms. Donna Dorio – Reading and Language Arts Specialist, K-5, Florida; and Ms. Carla Dean – District Literacy Coordinator, Georgia. (Mid-continent Research for Education and Learning , 2005)

According to the Mid-continent Research for Education and Learning (2005) report, these reviewers found that the Rigby Literacy program included a more systematic approach to instruction in phonemic awareness, phonics, and fluency. Overall, the reviewers stated that The Rigby Literacy program, with the 2004 revisions, clearly provided effective instructional opportunities in early literacy in each of the five areas identified by the National Reading Panel—phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Each was considered a major building block for reading success. These conclusions were gathered by the six researchers after a year-long study was conducted by the Mid-continent Research for Education and Learning. According to Mid-continent Research for Education and Learning (2005), this study was conducted to determine the effectiveness of the Rigby Literacy program in grades two and four. The students were given the Gates MacGinitie Reading Test, Fourth Edition

(GMRT-4), as the pre and post-tests. The GMRT-4 was used to assess second grade students in the areas of word decoding, word knowledge, comprehension, and total reading. The fourth graders were tested in the areas of vocabulary, comprehension, and total reading. It was found that students in both the second and fourth grades had significant gains from pre to post-test in every GMRT subtest. Mid-continent Research for Education and Learning (2005) defined "significant" as the mean differences at the 99% confidence interval.

The second study to determine the effectiveness of the Rigby Literacy Program was completed in May of 2008 by the Educational Research Institute of America (ERIA). In this study by ERIA (as cited in Beck, Curse, & Fernandez, 2008), five researchers from across the country studied the Rigby Literacy Program using The Consumer's Guide to Evaluating Core Reading Program Grades K-3: Critical Elements Analysis. This was a tool developed by Simmons and Kame'enui in 2003 as part of a federally funded program to evaluate basal programs (Beck et al., 2008). The authors of the evaluation instrument described the requirements of early instruction:

> The demands of the phonological, alphabetic, semantic, and syntactic systems of written language require a careful schedule and sequence of prioritized objectives, explicit strategies, and scaffolds that support students' initial learning and transfer of knowledge and skills to other context. The requirements of curriculum construction and instructional design that effectively move children through the "learning to read" stage to the "reading to learn" stage are simply too important to leave to judgment of individuals. The better the core addresses instructional

> priorities, the less teachers will need to supplement and modify instruction for the majority of learners. (Beck et al., 2008, p.5)

According to Beck et al. (2008), the 2008 evaluation of the Rigby Literacy Program was extremely positive across all reporting areas. These results fulfilled NCLB and RTI requirements for being a research-based program, thus the test was used as the teaching instrument in this study.

Early Childhood Literacy

When children enter kindergarten for the first time, they bring with them a wide spectrum of ability levels. These differing levels could be attributed to their natural ability or it could be the level of exposure children have had to school age concepts. Some of these children may have never been exposed to the written word or there may not have been an emphasis by a child's family on the importance of formal education. It is possible that on the first day of kindergarten, some children may be exposed to reading and writing for the first time. These children are starting school without any basic knowledge of early childhood basic reading skills. According to Snyder and VanDerHeyden (2006), "Early childhood education is a contemporary term used to refer to a variety of programs that serve young children from infancy through age 5 and their families" (p. 524). The skills that the researcher, as an elementary school principal, often associated with early childhood literacy include basic understanding of the alphabetical letters and their corresponding letter sounds. Further, it seems that the earlier a child receives interventions to address weaknesses, the more likely the child will be to develop at the same rate of the child's peers. Justice, Invernizza, Geller and Welsch (2005) agreed

that if kindergarten children have not acquired early literacy knowledge they will be at risk of reading failure in later grades. Gersten and Dimino (2006) went further and said that students' level of achievement in reading throughout their educational careers can be traced to their reading ability at the end of the first grade.

The research seems clear that providing interventions to children in the early primary grades (kindergarten, first, and second) is critical to the development of all students as fluent readers and to their growth as readers throughout their formal education. "Federal initiatives focused on early childhood increasingly are emphasizing the importance of early intervening systems, supports and services for young children and their families" (Snyder & VanDerHeyden, 2006, p. 522). Early intervention applies to small children at the beginning of their formal education who have been discovered to be at risk of developing a handicapping condition that may affect their development academically. Juel (1988) found that students who were poor readers in first grade were almost certain to remain poor readers at the end of fourth grade. Cunningham, Perry, Stanovich and Stanovich (2004) found that first grade reading achievement strongly predicted eleventh grade reading achievement. The researchers further stated that early interventions for reading problems reduced the number of students identified as learning disabled (Dickson & Bursuck, 1999). The NCLB Act contained specific language that included a mandate that failing schools make one-on-one tutoring available for students. According to research conducted (Juel, 1996; Wasik, 1998; Wasik & Slavin, 1993), one-on-one tutoring was the gold standard for reading instruction.

Justice et al. (2005) stated that by the end of kindergarten, children are expected to "be developmentally ready to engage in those instructional processes by which conventional reading skills are taught" (p. 2). Snow, Burns, and Griffin (1998) believed that success in early reading could lessen the impact or any difficulties in later reading performance. Additionally, the NCLB Act has placed a specific emphasis on beginning reading. One of the components listed in the NCLB Act stated that children must be screened for reading difficulties at an early age (United States Department of Education, 2004).

It is for these reasons that when the researcher and the faculty at Harris Elementary held a discussion group to create a plan of action to help all of the children at Harris succeed, the group chose to implement the RTI program. Tilly (2006) said that the goal of RTI is to "provide early interventions to prevent young readers from falling behind their peers" (p. 3). Speece, Case, and Molloy (2003) found that in order to get the best results in identifying students as being at-risk for reading problems, the earlier the interventions can start, the better for the child.

Summary

Education for children with disabilities has undergone major changes through the years. Prior to the 1960s, many schools were legally able to, and often did, exclude children based on their disabilities. Through a large number of legal battles and new legislation, the academic success of children with disabilities became a priority. The newest incarnation of efforts to provide an appropriate education for all children takes place prior to formal special education testing or placement in special education services.

Through the RTI model, as outlined in the IDEA 2005 Amendments, students were eligible to receive additional interventions to help them to succeed in school. The RTI model calls for all students in a school setting to work their way through a three-tier system. This three-tier system allows those students who need the most intervention to move up the tiers to access additional assistance.

The research in this chapter clearly supports providing interventions to children in the early primary grades (kindergarten, first, and second) and documents the critical development of all students as fluent readers and their growth as readers throughout their formal education. The earlier the interventions are put in place for at-risk students, the greater their chance of gaining skills that they have missed during their reading development.

This work with kindergarten students was researched using a causal-comparative methodology to address the study's hypothesis. The methodology will be further discussed in chapter three.

Chapter Three - Methodology

Like many other school districts in the United States, The City of St. Charles School District has been challenged by an increased demand for better student achievement. This demand is due in part to an ever-increasing level of student achievement required by the NCLB Law and the high benchmarks set by AYP. According to NCLB, these goals for student achievement are for all children regardless of race, gender, social status, or disability levels. In addition, the researcher, as principal of Harris Elementary School, reports that Harris is one of the elementary schools in The City of St. Charles School District that has seen a significant increase in the number of students who are at-risk (performing at an inadequate academic level when compared to other children).

At the time of the study, the method for assisting at-risk students at Harris Elementary School was with a regular education teacher making a referral to the school's problem solving team. The problem solving team of teachers and school counselors met to discuss the needs of the student and form an educational plan for the student's growth. This educational plan included interventions such that, if they did not prove to be successful, a special education referral may be appropriate. Many of the students who were considered at-risk were not special education students and did not qualify for additional services under the discrepancy model. The discrepancy model called for the evidence of a significant discrepancy between a student's academic performance and ability according to an IQ score. This discrepancy measure has been used for the past 30

years in Missouri schools. Recent legislation and the reauthorization of IDEA have brought about a new way to help at-risk students receive the necessary modifications and interventions they need to be successful in school.

The City of St. Charles School District Assistant Superintendent of Student Services asked faculty at Harris Elementary to pilot a new referral process that would enhance the provisions outlined under the IDEA Law. The new referral process included RTI, recall that the RTI model allows school personnel to identify at-risk students and to intervene for these students. Intervening, according to the RTI model, means providing students with regular research-based interventions throughout the school day to assist the students in gaining the necessary knowledge to be academically successful (Brown-Chidsey & Steege, 2005).

The interventions used at Harris Elementary were research-based and monitored regularly by an intervention specialist. The intervention specialist was a certified teacher who was hired for three hours a day to assist in the formation of an RTI model at Harris Elementary. She was the actual facilitator of the research-based interventions for the at-risk students, as identified by student performance on the Rigby Benchmark Assessments. Once a child was determined to be at-risk, the child was provided interventions in addition to regular classroom instruction. These interventions were monitored by the intervention specialist to determine if the intervention was successful in helping the child make gains in academic performance when compared to those students who were not at-risk. If the interventions were successful, they were continued at the same level of frequency and group size. If the learning team felt that the student was not

making sufficient progress toward the academic achievement goals, the level of intensity of the interventions was increased, based on the student's performance on the Rigby Benchmark Assessment. After all interventions had been tried, and if the student's rate of improvement was still below that of the student's peers, the student's problem solving team of parents, teachers, and a school counselor could make a referral for special education testing to determine if the child had a specific learning disability. It is the researcher's opinion that this dual method of using the intervention program first, before a formal educational testing program, incorporated the best aspects of both the traditional screening format and the RTI method. By using both methods, the school could ensure that everything possible was done to meet the needs of the child (Hale, 2006). If the child did not meet the criteria necessary for a special education diagnosis through the traditional discrepancy model, the problem solving team used the data collected during the entire RTI process as a means for placing the child in a special education program. It would still be the decision of the special education team to determine if the data that was collected or the interventions that had been done were sufficient for a placement in a special education setting.

This study was based on an elementary school principal's concern that necessary reading assessments and interventions were not being provided for children at the moment they entered kindergarten. The purpose of this study was to determine if the implementation of a research-based intervention program, RTI, would increase the academic performance of kindergarten students identified as at-risk, based on a baseline measure conducted at the beginning of the school year and compared to the same

assessment conducted at the end of the first semester. The researcher hypothesized that there would be a significant increase in academic performance when at-risk students were correctly identified and given access to a research-based intervention program.

This study measured the gains made by kindergarten students identified as at-risk who were exposed to regular interventions in the basic skills compared to students not receiving the interventions during the first semester of the 2007-2008 school year. These at-risk students were given the interventions in small groups or in a one-on-one setting. The achievements of students receiving interventions were also compared to students not exposed to additional interventions during the previous three years but who were instructed using the same Rigby Literacy materials in the regular classroom. It is important to note that the students who received the interventions also received the same instruction in the regular classroom as those students not considered at-risk and not participating in the interventions.

Subjects

The subjects of this study were kindergarten students from The City of St. Charles School District who attended Willie Harris Elementary School during the 2005-2006, 2006-2007, and 2007-2008 school years. Harris Elementary is in a suburban school district located in St. Charles County, Missouri. The average size of the total kindergarten population at Harris, over the three school years of the study, was 89 students. Whites comprised between 83% and 86.3% of the total population. The Black population fluctuated between 6.7% and 10.0% of the total population each year that data were collected. Much like the Black population, the populations of Hispanic and Asian

students fluctuated from year to year, but both of these minority groups continued to make up a relatively small portion of the population. Table 1 shows a .002% population of Indian students during this three year study. Table 1 illustrates that White students made up the majority of the population in this study at Harris Elementary.

Table 1

Harris Elementary Population by Race

HARRIS ELEMENTARY	2005-2006	2006-2007	2007-2008
Total Students	598	550	433
Asian	2.5%	1.1%	3.0%
Black	8.0%	6.7%	10.0%
Hispanic	3.2%	2.5%	4.0%
Indian	0.0%	0.0%	.002%
White	86.3%	89.6%	83.0%

Note: The information in Table 1 was collected from the Cognos Data System used by The City of St. Charles School District at the time this study was completed.

Table 2 represents the racial makeup of the entire kindergarten class for the 2005-2006, 2006-2007, and 2007-2008 school years. Table 2 illustrates a kindergarten population at Harris Elementary that very closely mirrors the total population of students at Harris Elementary school. It should be noted that there was only one Indian student enrolled in kindergarten during the three years in which this study was conducted. It should also be noted that only half of those students represented in the 2005-2006 school year in Table 2 were part of the three-year average control group used in this study. This is because only two of the four kindergarten classes at Harris participated in the Rigby Literacy pilot that year and, therefore, only those two classes were included in this study.

Table 2

Harris Elementary Kindergarten Students by Race Percentages

HARRIS ELEMENTARY	2005-2006	2006-2007	2007-2008
Total Students	82	98	85
Asian	2.0%	1.0%	7.0%
Black	8.5%	14.3%	5.3%
Hispanic	2.0%	2.0%	2.0%
Indian	0.0%	0.0%	1.0%
White	87.5%	82.7%	84.7%

Note: The information in Table 2 was collected from the Cognos Data System used by The City of St. Charles School District at the time this study was completed.

During the 2005-2006 school year, Harris Elementary participated in a pilot of the Rigby Literacy Program. Teachers were selected at all grade levels to participate in the pilot. Two classes of kindergarten students were part of this pilot program. Teachers in those two classes started using the assessment materials and collected the necessary data needed for this study.

While the percentages in each race category were similar to the other two years (see Table 2), Figure 3 indicates that during the 2005-2006 school year there were approximately the same number of kindergarten students attending at Harris Elementary as the other two years. However, not all of the kindergarten students who were enrolled in 2005-2006 were participating in the Rigby Assessments due to the fact that only two classrooms were participating in the Rigby pilot program. During the 2006-2007 school year, the Rigby Literacy Program was fully adopted at Harris Elementary, and all five classrooms of kindergarten students were assessed using the Rigby materials as

illustrated in Figure 3. In 2007-2008, the number of kindergarten classrooms dropped from five to four classes. The racial make up of the kindergarten classes closely mirrored the total population for Harris Elementary with Whites representing the majority of the school and grade level populations. The Black population moved up and down significantly from year to year. The 2006-2007 school year included the largest Black population, which is a direct correlation to the total school percentages. The kindergarten Asian population showed a steady increase over the three years. The Hispanic population was consistent all three years with two Hispanic students as part of the total kindergarten population. In Figure 3, one student is listed as an American Indian in the 2007-2008 school year. This information came from school records; however, it is the researcher's belief that this child was from India and that her parents made a mistake in filling out the school enrollment forms due to a language barrier.

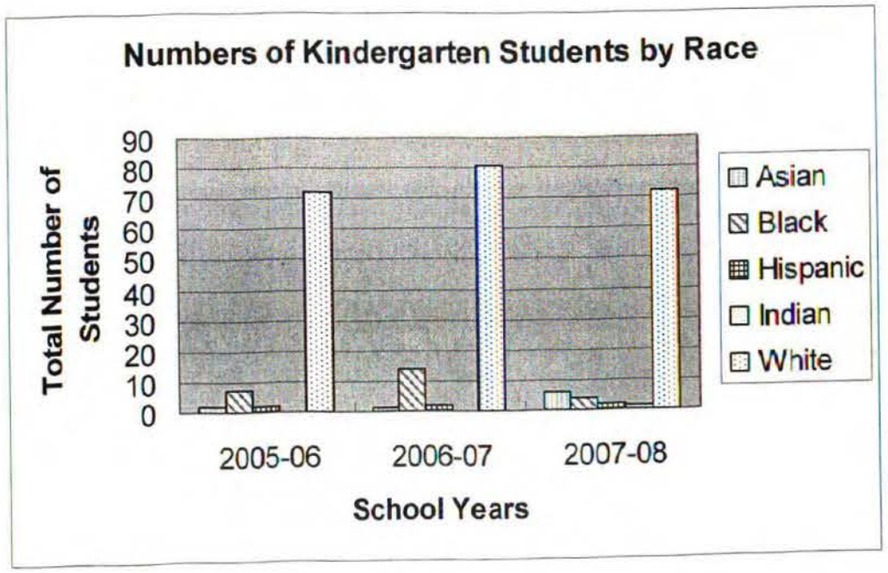

Figure 3. Three-Year Analysis of Student Headcount by Race at Harris Elementary School

Figure 4 indicates the gender percentages for the kindergarten classes in the study. The populations of boys and girls were approximately equal during the 2005-2006 school year. During the 2006-2007 and 2007-2008 school years, the male population was higher than the female population. During the 2006-2007 school year, the male population of kindergarten students was significantly higher in all five kindergarten classes. The population of male students during that school year was nearly double the total number of female students in the kindergarten classes.

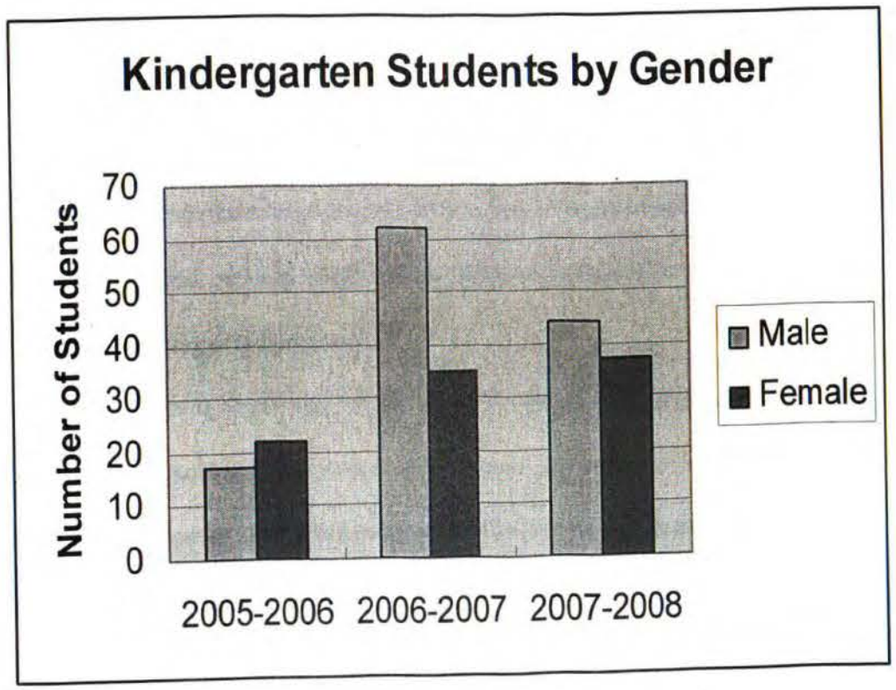

Figure 4. Kindergarten Students by Gender

Sampling Procedure

Beginning in 2005-2006, students in The City of St. Charles School District were exposed to a new curriculum and materials in the area of communication arts. Kindergarten teachers began collecting data using the Rigby Literacy program in all of the identified balance literacy areas for kindergarten students: letter recognition, letter sound recognition, concepts of print, phonemic awareness (phonics), and writing prompt.

In the 2006-2007 school year, the kindergarten teachers followed the same procedures for collecting literacy data four times during the school year.

At the start of the 2007-2008 school year, the kindergarten teachers again administered the Rigby Literacy Benchmark Assessment that had been administered the

previous two years. The students who scored below the expected levels or significantly below the levels of their peers in the areas of letter recognition and letter sound recognition were selected to receive additional interventions with the intervention resource teacher. Letter recognition and letter sound recognition were the first two items assessed as the first building blocks that needed to be in place before other areas of reading and writing could progress.

The students were given varying levels of interventions based on how low they scored on the benchmark assessment. Students who scored in the 20th to 25th percentile on letter identification and letter sound recognition portions of the test were given interventions with the intervention specialist, such as repeated drill and practice using flash cards. The students in this area met with the resource specialist in small groups of four or fewer for 30 minutes once per week. Students scoring in the 10th to 19th percentiles received individual interventions once a week for 30 minutes with the intervention specialist, working with alphabetic picture books. Students scoring in the 9th percentile or below received individualized interventions twice a week; these interventions included flash cards, alphabet books, and practice repeating the letter sounds after the instructor.

After three weeks of intervention based on their baseline scores, each of the children was again given the Rigby Benchmark Assessment to measure the student's academic growth. Based on the child's performance, the child's level of participation in the intervention program was increased or decreased. The students in the intervention program were given the Rigby Assessment every three weeks during the first two

quarters of school in order to adjust the level of intervention intensity necessary to help each of the children to be successful. These adjustments included changing the type of intervention in various ways, such as from written to verbal practice, in the number of times per week that a child spent with the intervention specialist, or in the ratio of students to teacher in the room by lowering the number of children in the intervention group.

Research Setting

The students in this study all attended Harris Elementary School, a suburban school district located in St. Charles County, Missouri. All of the students were in kindergarten when the data for this study were collected. The average size of the total kindergarten population at Harris over the three school years was 89 students with classroom sizes ranging from 20-25 students per classroom. All students in both the control and treatment groups of this study were assessed using the Rigby Literacy Assessment in a one-on-one setting, where one teacher administered the exam to one student at a time.

Instrumentation

For the purpose of this study, the kindergarten students were assessed using the Rigby Literacy Benchmark Assessment Evaluation. The Rigby Literacy program is a research-based program that teaches literacy (reading and writing) as a whole. The Rigby Literacy program has proven over time that teaching reading and writing together, to help students increase their basic communication arts skills, is more effective than other literacy approaches that teach the students basic skills in isolation (Mid-continent

Research for Education and Learning, 2005). The students were assessed using the data collection sheet as seen in Figure 5.

Rigby Literacy
Kindergarten Benchmark Assessment

Name: _____ Date: _____

P	O	i	U
t	R	E	w
Q	a	s	d
F	G	H	j
L	k	m	n
B	v	C	X
Z	q	W	e
r	T	y	u
Y	I	o	p
A	S	D	f
g	h	J	K
l	M	N	b
z	x	c	V

Total score ___/52

Figure 5. Rigby Assessment Tool

The examiner used a set of flip charts that contained all 26 of the letters of the alphabet, upper and lower case, displayed one letter per card. The examiner charted the student's correct responses on the sheet in Figure 5 by circling all correctly identified letters. The examiner then used a second sheet to record the student's knowledge of the

letter sounds, again using both upper and lowercase letters on the flip chart. On the letter sound portion, the child was shown the letter on the flip chart and was asked by the teacher to make the corresponding sound. The data were tabulated on a collection sheet along with other early literacy skills, such as kindergarten sight words, concepts of print (knowing where to start on a page or parts of a book), and phonemic awareness (phonics). These data collection sheets, as seen in Figure 6, were used four times per year (September, December, March and May) for the control group and every three weeks for the treatment group.

	Baseline Assessment											
	Total Points Possible	54		54		30		12		18		
	Dates:	Letter Recognition		Sound Indentification		Sight Words		Concepts of Print		Phonemic Awareness		
	Student Name	Baseline	%	Baseline	%	Baseline	%	Baseline	%	Baseline	%	
1			0%		0%		0%		0%		0%	
2			0%		0%		0%		0%		0%	
3			0%		0%		0%		0%		0%	
4			0%		0%		0%		0%		0%	
5			0%		0%		0%		0%		0%	
6			0%		0%		0%		0%		0%	
7			0%		0%		0%		0%		0%	
8			0%		0%		0%		0%		0%	
9			0%		0%		0%		0%		0%	
10			0%		0%		0%		0%		0%	
11			0%		0%		0%		0%		0%	
12			0%		0%		0%		0%		0%	
13			0%		0%		0%		0%		0%	
14			0%		0%		0%		0%		0%	
15			0%		0%		0%		0%		0%	
16			0%		0%		0%		0%		0%	
17			0%		0%		0%		0%		0%	
18			0%		0%		0%		0%		0%	
19			0%		0%		0%		0%		0%	
20			0%		0%		0%		0%		0%	
21			0%		0%		0%		0%		0%	
22			0%		0%		0%		0%		0%	
23			0%		0%		0%		0%		0%	
24			0%		0%		0%		0%		0%	
25												

Figure 6. Rigby Data Collection Sheet

The data collected on the chart shown in Figure 6 were used to identify the at-risk students who became members of the treatment group. The treatment group used the assessments shown in Figure 5 every three weeks.

Procedure

Kindergarten students, who entered school during the 2007-2008 school year, were given the Rigby Literacy Benchmark Assessment to determine their baseline knowledge of alphabetical letter recognition and the corresponding letter sound recognition for all 26 letters in upper and lowercase forms. Children who were significantly below the performance of their peers (or below the 25th percentile on the assessment instrument) were identified as students at risk for failure. These students were targeted to receive additional instruction in basic letter and letter sound identification skills from the intervention specialist in the building. The intervention specialist was a certified teacher who took a part-time position, which fell in the category of a paraprofessional according to the school district pay scales. This intervention specialist worked for two hours per day with the identified kindergarten students. She provided literacy interventions based on each individual child's needs. The intervention specialist was responsible for monitoring the progress of each student's performance and the effectiveness of each intervention that was used with the students.

At the time of this study, Progress Monitoring was a form of record keeping that was often associated with the RTI models and was used in various forms in educational settings across the United States. Progress Monitoring was used to judge the effectiveness of the interventions. This was done with the aid of progress graphs. These graphs were used to plot each student's performance before, during, and after a specific intervention. Each student's successes or failures were tracked on the graph with the use of a trend line. The trend line charted each student's current level of performance and predicted the

direction of performance that the student needed to continue in order to meet the teacher's expectation or goal. If a child's performance dropped below the trend line, the intervention was deemed a failure and a new intervention was attempted. If a student performed on or above the trend line, the intervention was considered a success and was continued for as long as the student's performance continued to improve and progress toward the goal. In this study, student performance scores on the Rigby Assessment were plotted on progress graphs. The level of intervention was adjusted according to where an individual student's score fell in accordance with the trend line for that student. It is important to note that each student's graph looked very different from all other students' graphs, but 100% alphabetical letter recognition and letter sound recognition was always the ending goal.

Students scoring in the 25th percentile or below were considered at-risk of failure and became the treatment group for this study. These students received additional instruction based on their individual baseline performance scores. The students with lower scores received more instruction from the intervention specialist than those students scoring closer to the 25th percentile. All students who scored in the 0 to 25th percentile on letter identification and sound recognition portions of the test were given interventions with the intervention specialist. The students in the 20th to 25th percentile initially met with the resource specialist in small groups of four or fewer for thirty minutes once a week. Students scoring in the 10th to 19th percentiles initially received individual interventions one time per week for thirty minutes with the intervention

specialist. Students scoring in the 9th percentile or below initially received individualized interventions for 30 minutes twice per week.

The intervention specialist met with all of the students in the treatment group within small flexible groups or in one-on-one settings. The groups were adjusted in time and number of students in order to address each student's performance when compared to the student's baseline scores. The students worked with the intervention specialist doing a variety of tasks to gain the basic knowledge of alphabetical letter recognition and the corresponding letter sounds that accompanied each upper and lower case letter. The intervention specialist used learning tools that stimulated all learning styles represented in the small groups and in individual students. The intervention specialist used both verbal and nonverbal teaching methods. The methods included, but were not limited to, using pencil and paper and various tactile materials. She worked with the students using flash cards, alphabet books, picture learning books, and songs. All of these techniques were used to ensure that each student's individual learning style preferences and needs were being met.

The students were pulled from their regular classroom at non-language arts instructional times. This was to insure the students in the treatment group would receive the same level of classroom instruction in the area of language arts as their non-identified peers. The intervention time was scheduled to be an additional layer of instruction in the basic building block skills for reading and writing for each student in the treatment group.

After three weeks of interventions, each of the children was, again, given the Rigby Benchmark Assessment to measure academic growth in the areas of letter

recognition and letter sounds. Each child's level of participation in the intervention program was increased or decreased according to the student's level of improvement or lack of improvement. Students who showed greater amounts of growth would see their time with the interventionist decrease and their time in the regular education classroom increase. Those students who showed good levels of growth were moved from individualized instruction to small group instruction. Those students who were not responding well to the interventions were given additional time or new interventions with the intervention specialist in order to continue the search for the method that would help each child be successful.

The students in the treatment group who were taking part in the intervention program were given the Rigby Assessment every three weeks during the first two quarters of the school year, in order to adjust the level of intervention intensity necessary to help each of the children succeed in reading. Those students who performed well enough to return to the regular education classroom continued to receive testing every three weeks as part of the treatment group. It was found, at different times, that even though the children had shown growth and were removed from individual sessions with the intervention specialist, they sometimes regressed and had to return to the program after the next assessment was administered.

Data were gathered for these at-risk students, as well as all kindergarten students enrolled in classes using the Rigby Literacy Reading Program, over the 2005-2006, 2006-2007, 2007-2008 school years. The same Rigby Assessments were administered to all students. Not all students enrolled in kindergarten during this three-year span were

included in this study. During the 2005-2006 school year, only two of the four kindergarten teachers were selected to participate in the district-wide pilot of the Rigby Literacy Program, and their students were included in this study as part of the comparison group labeled, "3 year average group." Students who were enrolled in kindergarten at Harris Elementary during the 2005-2006, 2006-2007, and 2007-2008 school years were given the Rigby Literacy Benchmark Assessments once per quarter as this new balanced literacy program was implemented into district curriculum. Those students enrolled during the first two years of implementation were not given the opportunity to receive additional interventions as outlined in this study; however, their scores were used in this study as historical data to create an average of scores of those students who received no additional supports or interventions. The treatment group's baseline and ending scores were compared to those students who received no additional instruction during this study.

This study analyzed the difference in pre-test and post-test scores of 16 students on their ability to recognize both upper and lower case alphabetical letters and their corresponding letter sound. These students' scores were compared to data from three other groups of students using the same Rigby Assessment instrument.

First, the treatment group was compared to the 2007-2008 building average of all kindergarten students at Harris Elementary. The 2007-2008 building average consisted of every student enrolled during the 2007-2008 school year who took part in both the baseline assessment and the end of second quarter assessment. These students received their language arts instruction from the regular education classroom teacher alongside the treatment group. During the times when the treatment group was pulled for additional

instruction or interventions, these students remained in the classroom and worked on various classroom projects or worked in independent classroom enrichment activity centers. These enrichment activities were student directed; therefore, students in the treatment group missed no curricular instruction during their intervention times.

Second, the treatment group was then compared to the historical data gathered over the three-year period using the same Rigby Benchmark Assessment for kindergarten students and their performance on letter recognition and letter sound recognitions. This control group of kindergarten students consisted of 223 students enrolled in kindergarten classes at Harris Elementary during the 2005-2006, 2006-2007, and 2007-2008 school years. These students received only the language arts instruction that was provided in the regular education classroom. It is important to note that of the students enrolled during the 2005-2006 school year, only half of the students participated in the Rigby Assessments. This half consisted of two full classrooms of students who were in the class that piloted the new Rigby materials. It is also important to note that while all of the students in the 2006-2007 school year participated in the Assessment program, only one of the kindergarten teachers had experience giving the assessments from the previous pilot year.

Finally, the treatment group was compared to the expected level of growth, as outlined in The City of St. Charles School District curriculum for kindergarten students. The district curriculum dictates that all kindergarten students learn all of their alphabetical letters and the corresponding letter sounds by the end of the fourth quarter. For the purpose of this study, all 26 of the alphabetical letters and the corresponding letter

sounds were divided into four groups to create an expectation that one fourth would be correctly produced each quarter. The ability levels of children who entered kindergarten varied widely, but the goal for all students was the same—to have knowledge of all 26 alphabetical letters and the corresponding letter sounds by the end of the school year. This resulted in a district expectation that one-half of the correctly produced letters and letter sounds would be produced at the end of the first semester. This percentage of correctly produced letters and letter sounds was compared to the treatment group at the end of the data collection for this study, which would be at the end of the second quarter or end of the first semester. The comparison would be between the student's performance at the beginning and end of the first semester.

Each of the 16 students in the treatment group took the pre and post-tests for alphabetical letter recognition and their corresponding letter sounds recognition. This created a total of 32 pre and post-tests, the data set for this study. These 16 students were compared to 223 students who were given the same pre-test and post-test during the 2005-2006, 2006-2007, and 2007-2008 school years. The 223 students used in the comparison group actually accounted for two of the comparison groups in this study. The first group was the entire population of 223 students who participated in both the benchmark and second quarter Rigby Benchmark Assessment over the three years of the study. Within these 223 students, a subgroup of students was identified as the 2007-2008 building average. These were the students who participated in the assessments and the regular classroom instruction along with the treatment group during the 2007-2008 school year.

All of the students both in and out of the treatment group were given the pre-test during the first two weeks of their kindergarten school year. The results of these pre-tests are listed as a baseline score on the Rigby Literacy Benchmark Assessment instrument. For the purpose of this study, the post-tests were the alphabetical letter recognition and the corresponding letter sound recognition test from the Rigby Literacy Program. These post-tests were administered at the end of the second quarter of school during the students' kindergarten school year.

The following data were studied:

1. Formative assessment results were ongoing assessments given after short periods of time to check progress. The average increase or decrease of 16 kindergarten students' results was assessed on pre-tests and post-tests in the area of alphabetical letter recognition and the corresponding sound recognition.
2. Summative assessment results were cumulative assessments given at the end of a grading period to check final understanding. Results of the end of the second quarter Rigby Assessment scores were compared to kindergarten students' scores on the same assessment over a three year period.
3. Additional data studied included treatment groups' performance on the Rigby Assessment tool compared to the expected rate of growth set forth by The City of St. Charles School District in kindergarten curriculum requirements for alphabetical letter recognition and letter sound recognition.

Summary

Harris Elementary school chose to start an intervention program using the RTI model as the basis of providing additional help to kindergarten students. Using the Rigby Early Literacy Benchmark Assessment, children were identified with deficiencies in the areas of alphabetical letter recognition and their corresponding letter sounds. A certified teacher was hired at Harris Elementary to serve as an intervention specialist to provide these at-risk students additional help in their areas of weakness. The students' progress was monitored and altered according to their performance on the benchmark assessments.

At the completion of the first semester of school, the researcher used the data from the Rigby Benchmark Assessment from the students who had been receiving the extra interventions and help from the intervention specialist and compared them using a *t*-test. This *t*-test was part of a casual-comparative analysis that compared the students' performance on the Rigby Benchmark assessments to students that had not received the extra interventions during the 2005-2006, 2006-2007, and 2007-2008 school years. This was done to determine if the interventions that had been provided to the kindergarten students had any impact on student achievement. In chapter 4, the results of the data analysis are reported.

Chapter Four - Results

Children begin their first year of formal schooling at various intelligence and ability levels. These levels are partially based on a child's natural ability and life experiences prior to entering school. The amount of exposure children have to academic skills in both formal and informal settings may affect their ability levels when entering a formal school setting. Struggling to learn to read may result from the student's lack of exposure to language. In some cases, this lack of exposure could be due to a family that does not use a wide vocabulary with the child. This lack of verbal exposure can cause the child to be at a lower ability level in terms of vocabulary usage as compared to his/her peers. Additionally, many struggling students have had limited exposure to literature. Lack of exposure to the written word could put these children below the language ability levels of their peers at the beginning of their kindergarten school year. Children who enter school with skill levels below that of their peers are often labeled at-risk for failure early in their formal schooling.

The purpose of this study was to determine if the implementation of a research-based intervention program, RTI, would increase the academic performance of kindergarten students identified as at-risk, based on a baseline measure conducted at the beginning of the school year and compared to the same assessment conducted at the end of the first semester. The Rigby Literacy Benchmark Assessment was given to all kindergarten students during the first two weeks of school in all three years in which data were collected for this study. Students scoring below the 25th percentile in the areas of alphabetical letter recognition and letter sound recognition were identified as the

treatment group for this study. These children received additional instruction or interventions in the areas of alphabetical letter recognition and letter sound identification during the school day in addition to their normal reading instruction.

Analysis of Data

The dependent variable in this study was the change of assessment scores based on pre-tests and post-tests administered to kindergarten students in the areas of alphabetical letter recognition and the corresponding letter sound production. To determine if the treatment provided to kindergarten students considered at-risk of failure was successful, two types of statistical analyses were conducted.

First, the 16 students who received the additional layers of support through an intervention specialist had their individual performance on the baseline and second quarter assessment compared for growth. Initially, the students were given the Rigby Literacy Assessments within the first two weeks of the school year to determine baseline knowledge of letter recognition and letter sound recognition. The students then received additional instruction in the areas of alphabetical letter recognition and the corresponding letter sound recognition during the first two quarters of the 2007-2008 school year. The students were assessed again at the end of the second quarter using the same Rigby Assessment instrument.

The students' baseline and second quarter assessments were statistically compared using a dependent *t*-test. The *t*-tests in this study were completed using the statistical analysis tools in the Microsoft Excel program. For the dependent *t*-test, the 16 students in the treatment group had their pre-test, or baseline, compared to their post-test

to determine if the average difference between the two assessments was statistically significant.

Secondly, the treatment group's performance was compared to three other sets of collected data. They included three groups of kindergarten students who were given the same Rigby Assessments over a three-year period, as well as a group labeled in this study as the District Expectations. These comparisons were made to determine the significance of the treatment given to the 16 at-risk students when compared to comparison groups. The means of the treatment group and the comparison groups were compared using one sample *t*-tests. The tests were completed using the statistical analysis tools in the Microsoft Excel program.

Baseline and second quarter data. When observing the data in the area of letter recognition, all 16 of the students in the treatment group showed gains in correctly identifying the number of upper and lower case letters on the second quarter Rigby Benchmark Assessment. The average growth for the treatment group was 60.63 percentage points. It is important to note that all percentages noted in this section were representative of percentage points gained or lost when comparing pre-test scores to post-test scores. The highest level of improvement for an individual student was an 82% increase and the lowest level of improvement for an individual was an increase of 31%. The City of St. Charles School District set an expectation that all kindergarten students would master 50% of all alphabetical letter recognitions and 50% of all corresponding letter sound recognitions by the end of the second quarter of school. The two students with the lowest percentage gains, 31 percentage points and 41 percentage points, did not

meet the district expectation of 50% total score by the end of the second quarter. However, the two students started with a baseline score of 6% and 15% respectively. The amount of growth each student gained during the treatment period was added to the total percentage of knowledge resulting in 37% and 56%. This means that only one student did not meet the expectation of 50% when the student's total performance on the second quarter assessment was compared to the expectation. The total performance level for all students was higher at the end of the second quarter when compared to the total scores instead of total gains. The treatment group's average gain of 60.63% was much lower than the overall knowledge scores of the group's average score of 77.38%. These scores are represented in Table 3.

Table 3

Treatment Group's Individual Scores on Letter Recognition

Letter Recognitions	Baseline %	2nd Quarter %	Difference in % Points
Student A	24	91	67
Student B	24	87	63
Student C	20	70	50
Student D	28	100	72
Student E	20	89	69
Student F	22	93	71
Student G	24	78	54
Student H	15	56	41
Student I	11	78	67
Student J	9	69	60
Student K	7	89	82
Student L	15	81	66
Student M	6	37	31
Student N	9	74	65
Student O	15	70	55
Student P	19	76	57
Totals	268	1238	970
Group Averages	16.75	77.38	60.63

Figure 7 represents the percentage points of growth shown by the treatment group in the area of alphabetical letter recognition. The students were given the Rigby Literacy Assessment for Letter Recognition within two weeks of the start of their kindergarten

school year. The students were then tested again using the Rigby Benchmark Assessment at the end of the second quarter of school. Figure 7 represents the percentage points of improvement gains made by each of the 16 students in the treatment group. The Rigby Benchmark Assessment test required the students to correctly identify all 26 alphabetical letters by saying the name of each letter as the teacher presented it on a set of flip charts. Students were assessed on both upper and lower case letters; therefore, 52 letters were available for identification. The letters were presented to the students out of sequence with upper and lower case letters intermixed.

When analyzing the graph in Figure 7, it is important to note that all 16 students in the treatment group made gains of at least 30 percentage points or more. It is also important to note that 14 of the 16 students in the treatment group made gains of 50 percentage points or greater. This is substantial because The City of St. Charles School District set the expectation that by the end of second quarter, all students should master the recognition of at least 50% of the alphabetical letters. The 14 students in the treatment group that made gains of more than 50% would be considered on or above grade level according to the district expectations.

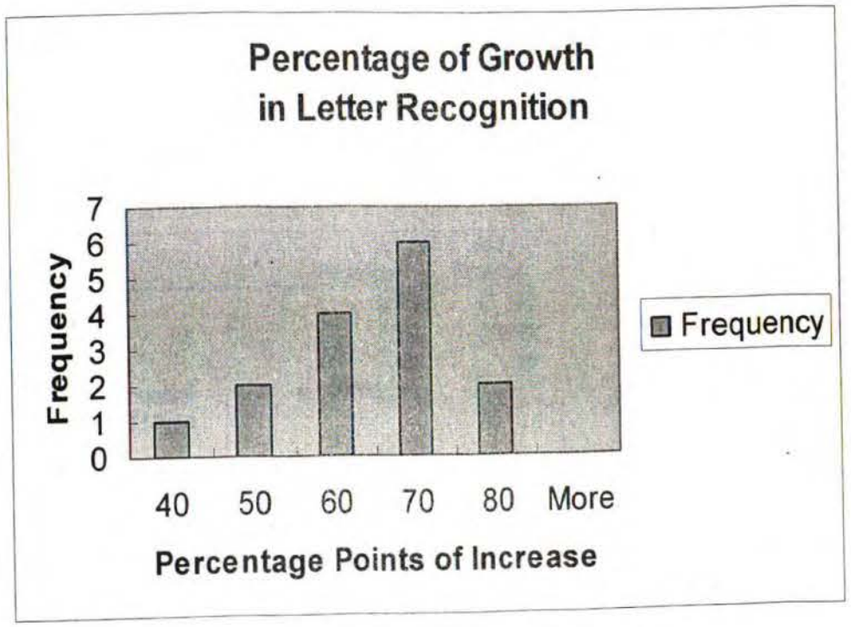

Figure 7. Histogram of Percentage of Growth in Letter Recognition

The dependent *t*-test analysis is presented in Table 4. The statistical hypotheses were H_0: $\mu_D = 0$

H_1: $\mu_D > 0$, where D = Post - Pre

The results of the *t*-test were $t\ (15) = 19.32$, $p < .001$. The null hypothesis was rejected in favor of the alternative hypothesis with the conclusion being that the mean difference between pre-test and post-test was greater than 0. The 95% confidence interval for average difference in baseline versus second quarter was $53.9 < \mu < 67.3$.

Table 4

Results from Dependent *t*-Test for Letter Recognition

t-Test: Paired Two Sample for Means

	Baseline	*2nd Quarter*
Mean	16.75	77.375
Variance	47.4	239.85
Observations	16	16
Pearson Correlation	0.608050036	
Hypothesized Mean Difference	0	
Df	15	
t Stat	19.31775268	
P(T<=t) one-tail	2.607E-12	
t Critical one-tail	1.753051038	
P(T<=t) two-tail	5.21399E-12	
t Critical two-tail	2.131450856	

The gains of all 16 students in the area of letter sound recognition are shown in Table 5. The students in the treatment group made gains in their performance on the Rigby Assessment in the area of letter sound recognition. To test for letter sound recognition, the Rigby Benchmark Assessment measured the percentage of letters that the student could recognize the correct sound that corresponded with each. Students were shown the same letters from the letter recognition test on the same flip charts used in the letter recognition test, but during this test, the students were asked to verbally make the corresponding sound associated with the letter shown on the chart.

Note in Table 5 that the highest percentage of increase was shown by Student F who had 91 percentage points more letter sounds recognized at the end of the second quarter when compared to the student's baseline score. The lowest percentage of increase

was shown by Student H with a 26% increase in the number of correctly identified letter sounds. The overall average growth for the treatment group was 60.94%. This was meaningful because The City of St. Charles School District expected a growth of 50% during the same period of time. The treatment group's overall performance at the end of second quarter was only slightly higher than the students' growth rate. The overall performance at the end of the second quarter was 63.69%. This percentage of the students' total second quarter score was very close to the growth rate of 60.94% during that same period of time. The researcher postulates that this was due largely to the fact that half of these students had scored a zero on the baseline assessment and another fourth of the group only scored at the 2% mastery level on the baseline assessment.

Table 5

Treatment Group's Individual Scores on Letter Sound Production

Letter Sounds	Baseline %	2nd Quarter %	Difference in % Points
Student A	2	85	83
Student B	2	74	72
Student C	7	70	63
Student D	9	98	89
Student E	13	83	70
Student F	2	93	91
Student G	2	69	67
Student H	0	26	26
Student I	0	59	59
Student J	0	52	52
Student K	0	87	87
Student L	7	44	37
Student M	0	30	30
Student N	0	57	57
Student O	0	31	31
Student P	0	61	61
Totals	44	1019	975
Group Averages	2.75	63.69	60.94

The histogram in Figure 8 shows the percentage points of gains made by the treatment group in the area of letter sound recognition. These numbers were ascertained

by comparing the students' scores on the baseline Rigby Literacy Benchmark Assessment to their scores on the same assessment at the end of the second quarter of school. Students were assessed on being able to identify and produce the correct letter sound that corresponds to all 26 alphabetical letters, both upper and lower case.

The graph shows that all 16 students made gains of at least 30%. It also shows that 11 of the 16 students in the treatment group made gains of greater than 50% in their ability to identify the correct letter sounds on the Rigby Assessments. Comparing these numbers with the district expectation, all students would have made at least a 50 percentage points increase in their scores. Thus, it can be determined that the majority of the treatment group made gains that met or exceeded the expectations of The City of St. Charles School District in the area of letter sound production. The students' total scores on the second quarter assessment showed 12 of the 16 students were above the district expectation of 50% knowledge of letter sounds. This would place 12 out of 16 students at or above grade level according The City of St. Charles School District curriculum.

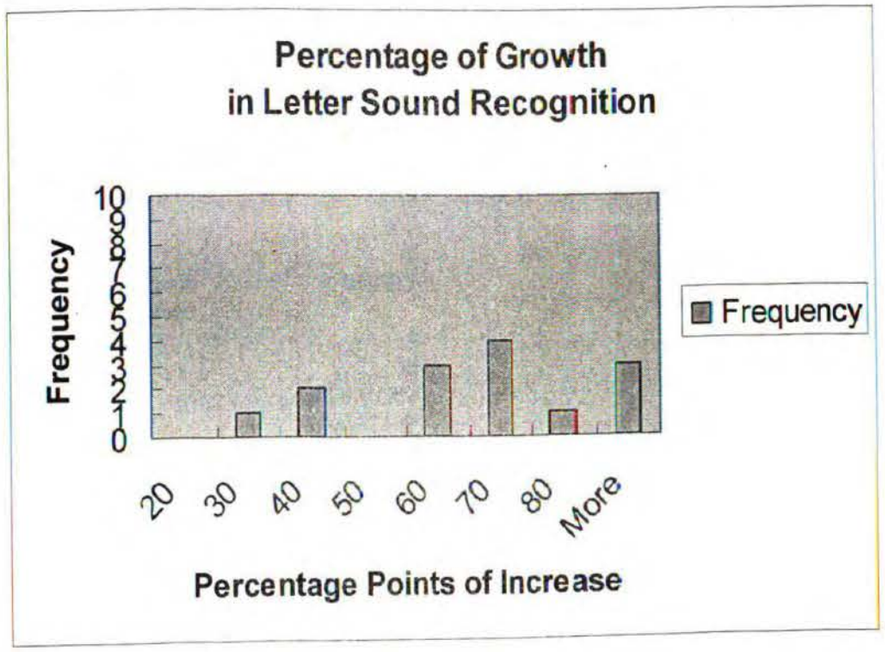

Figure 8. Histogram of Percentage of Growth in Letter Sound Recognition

The dependent *t*-test analysis is presented in Table 6. The statistical hypotheses were $H_0: \mu_D = 0$

$H_1: \mu_D > 0$, where D = Post - Pre

The results of the *t*-test were $t\ (15) = 11.41$, $p < .001$. The null hypothesis was rejected in favor of the alternative hypothesis with the conclusion being that the mean difference between pre-test and post-test was greater than 0. The 95% confidence interval for average difference in baseline versus second quarter was $49.6 < \mu < 72.3$.

Table 6

Results from Dependent *t*-Test for Letter Sound Production

	Baseline	*2nd Quarter*
Mean	2.75	63.6875
Variance	16.2	520.22917
Observations	16	16
Pearson Correlation	0.434809888	
Hypothesized Mean Difference	0	
Df	15	
t Stat	11.4071894	
P(T<=t) one-tail	4.30587E-09	
t Critical one-tail	1.753051038	
P(T<=t) two-tail	8.61174E-09	
t Critical two-tail	2.131450856	

The previous series of dependent *t*-tests was conducted to determine if the mean difference between the students in the treatment group's baseline scores, in the areas of alphabetical letter recognitions and letter sound recognitions, showed significant growth when compared to their performance on the end of the second quarter assessment. Through the analyses done using the dependent *t*-test, it was determined that the null hypotheses, which stated that there would be no significant difference between the students' baseline scores and their end of second quarter scores, were rejected. The dependent *t*-tests gave evidence that the alternate hypotheses contained more accurate statements. The alternate hypotheses stated that a significant positive difference would exist between the scores on the baseline as compared to the scores at the end of second quarter assessments.

Treatment group versus comparison groups. In the dependent *t*-test analyses, the treatment group was compared using the mean difference of the students' baseline

assessment and their end of second quarter assessment. These analyses of the mean differences, being found statistically significant, were then studied to determine whether the treatment that was given was significant when compared to external groups. The mean of the treatment group was compared to the means of the other three comparison groups. Three sets of group results were compared:

1. Treatment Mean versus 2007-2008 Building Mean
2. Treatment Mean versus Mean Score for 3 Years
3. Treatment Mean versus District Expectation

Two of the comparison groups were comprised of students who were given the same Rigby Assessment that was given to the treatment group at the beginning of the 2007-2008 school year and again at the end of the second quarter. The 2007-2008 Building Means were derived from the mean scores of all kindergarten students enrolled during the 2007-2008 school year. These students completed the same Rigby Assessments, but they did not receive the additional interventions that were given to the treatment group. These students received their communication arts instruction with the treatment group in the regular classroom.

The 3-year average was a collective mean of 223 students who attended kindergarten at Harris Elementary during the 2005-2006, 2006-2007, and 2007-2008 school years and were present for both the pre-tests and post-tests during their time in kindergarten.

The treatment group was then compared to the district expectation group. The District Expectation was not a score that was derived from actual student performance on

a specific test, but instead was taken from The City of St. Charles School District's current curriculum expectation that kindergarten students will recognize 100% of all 26 upper and lower case alphabetical letters and their corresponding sounds by the end of the fourth quarter. That 100% was divided by the four quarters of the school year to create a quarterly expectation that grew by 25 percentage points each quarter with a baseline score starting at zero.

The time period, in which the assessment was given, was indicated on the x-axis on each of the graphs in Figures 9 and 10. The control groups and the treatment group were given the Rigby Literacy Benchmark Assessment within the first two weeks of school to establish a baseline score. The assessment was then administered to all students at the end of the first and second quarters of school. The treatment group was given assessments every three weeks to adjust their intervention programming. These intermittent tests were used only as a diagnostic tool and were not included in Figures 9 and 10 since the control groups were not given these intermittent assessments, and therefore, no source of comparison data for those scores was available.

The y-axes on Figures 9 and 10 indicate the percentage of correct responses on the Rigby Assessment for each of the groups listed. On both graphs, a perfect score of 100% would represent 52 correct responses. The students were tested on all 26 alphabetical letters for recognition and letter sound recognition using both upper and lower case letters to derive a total of 52 correct responses.

Figure 9 illustrates the treatment group's performance in relation to the other three comparison groups in the areas of alphabetical letter recognition and the corresponding

letter sound production. The percentage scores of the four groups were representative of the baseline, the end of the first quarter, and the end of the second quarter. At each of these three time periods, each of the groups was given the Rigby Literacy Assessment. In the area of letter recognition, the students were asked to identify all 26 uppercase letters and all 26 lowercase letters. The tests consisted of the teacher showing the students a picture of each of the letters on a flip chart for the child to identify verbally. At the end of the assessment, a percentage was calculated with a total of 52 correct answers being 100% correct. The graph shows that gains were made by all four groups in this study when their baseline scores were compared to the end of the second semester scores.

The treatment group began this study with an average score of 16.75% of letters correctly identified. This average was compared to 63.37% scored, on average, by all children enrolled in kindergarten during the 2007-2008 school year. The 3-year average of 66.28% correct was the highest of any of the four groups being compared in the graph. The fourth group, labeled the district expectation, scored a zero on the baseline assessment. This was derived from the district expectation that all students would learn 100% of their letters by the end of the kindergarten school year. For this study, the district expectation of 100% was divided by all four quarters, starting with zero on the baseline, and gaining 25 percentage points for each of the school year quarters. At the end of the fourth quarter, or the completion of kindergarten, the total expectation of 100% would be reached.

At the end of the second quarter, the treatment group had surpassed the district's expectation but scores remained below the other two comparison groups. It is important

to note that the students in the treatment group made considerable gains when comparing their baseline average of 16.75% to the second quarter average of 77.38%, an increase of 60.63 percentage points. The 60.63% increase was much higher than the 23.24% increase made by the 3-year average group and the 24.51% increase made by the 07-08 building average group. The treatment group also outperformed the expected 50% increase represented by district expectations.

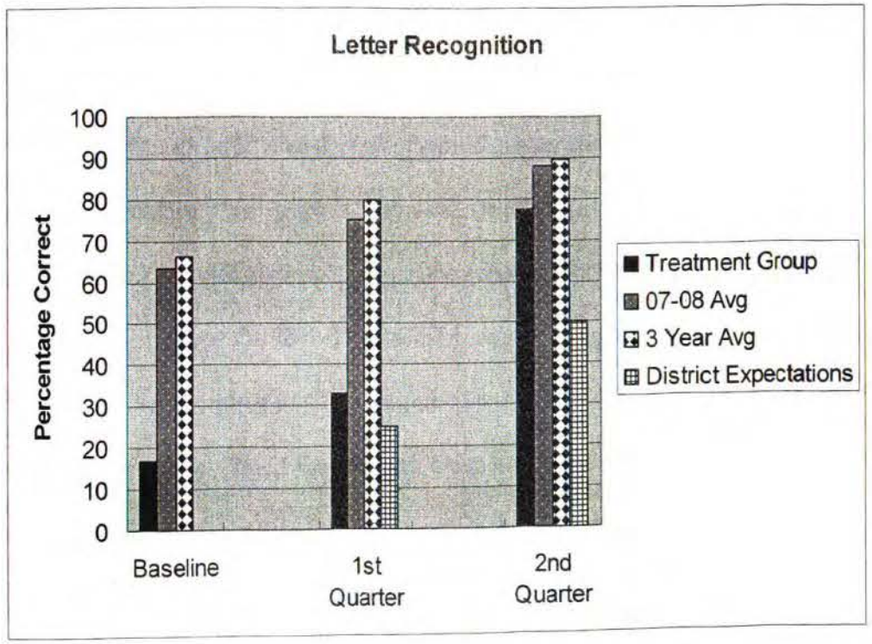

Figure 9. Student Group Comparison of Letter Recognition

In Figure 10, the treatment group performance on the percentage of letter sounds correctly identified was compared to the three other groups studied. The average score for correct letter sounds was based on the students' abilities to correctly produce the letter sound associated with all 26 upper and lower case letters for a total of 52 letter sounds. Therefore, the perfect score of 100% would show that the student could produce the

correct sound for 52 letters, 26 uppercase and 26 lowercase. Figure 10 shows that the treatment group made a substantial gain of 61.14 percentage points when compared to the students' baseline scores, from 2.75% correct sound production to 63.69% correct sound production on the end of the second quarter assessment. All of the comparison groups made great strides during the first two quarters of school where data were collected for this study. The 3-year average for kindergarten students had an increase of 41.41 percentage points from a baseline of 36.38% correct to 77.79% correct at the end of second quarter. Likewise, the 2007-2008 building average increased 40.82%, from a 33.47% baseline to 74.29% on the end of second quarter assessment.

Observation of the graph indicates that the treatment group at the end of the second quarter was still performing below the average of both the 3-year average comparison group and the 2007-2008 building average comparison group. However, the treatment group's score of 63.69% was above the district's expectation of 50% by the end of the second quarter. While the treatment group was below two of the comparison groups, it is important to note that the rate at which the treatment group increased was greater than all three comparison groups. The treatment group average rose from 2.75% to 63.69%, an average increase of 60.94 percentage points. The 3-year comparison group increased 41.41 percentage points and the 07-08 building average increased 40.82 percentage points. The district expectation for growth during this period of time was 50%. The treatment group's increase of 60.94 percentage points was well above the 50% expectation of growth set forth by district curriculum.

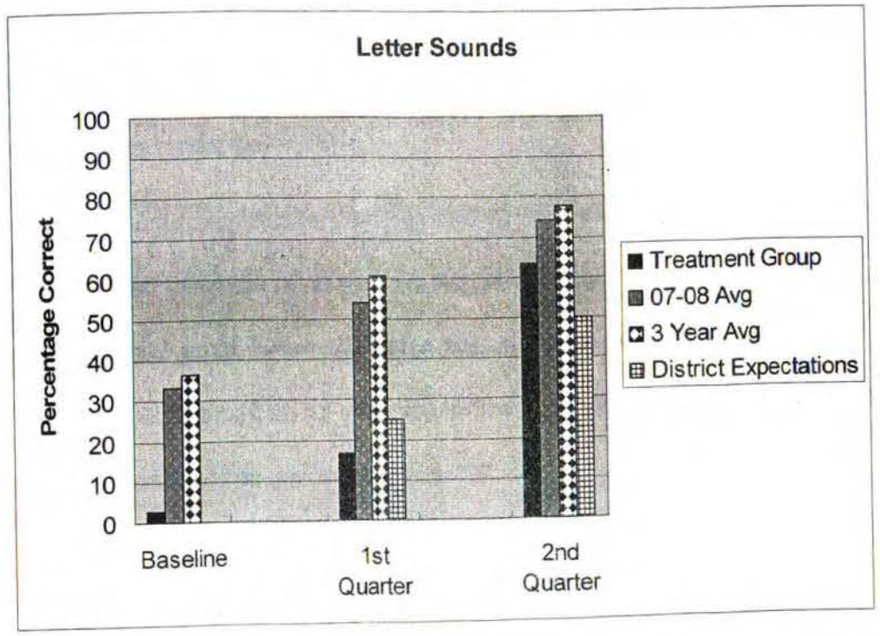

Figure 10. Student Group Comparison of Letter Sound Recognition

After all of the data were collected, the researcher performed a series of tests to determine if the interventions used in this study had a statistically significant impact on the students' performance in the areas of alphabetical letter recognition and the corresponding letter sound production. Tables 7 and 8 show the results of the *t*-tests conducted to indicate whether a statistically significant difference existed in the treatment group's performance in the students' recognition of alphabetical letters and their corresponding sounds, measured against the performance of the three comparison groups.

The purpose of the *t*-test was to determine if the mean scores of the treatment group differed significantly from the hypothesized population mean. The null hypothesis of each *t*-test stated that there would be no significant difference between the mean scores at the end of the second quarter assessments of the treatment group and the three

hypothesized population means. In this study, the mean of the treatment group was compared to the means of the other three comparison groups. The *t*-test results for letter recognition are represented in Table 7.

The *t*-tests completed for this study used the mean performance of the 16 students in the treatment group and the mean of the three comparison groups: the 2007-2008 building average group, three-year average group, and district expectation group. After the completion of each *t*-test, a p-value was derived from the results to determine if the null hypothesis should be rejected or not rejected.

P-values were the basis of comparison of means of the three groups. If the p-value was less than .05, it was deemed that there was a significant difference between the means of the treatment group and the groups being compared. Therefore, the treatment was more likely a contributing factor than random chance in the students' achievement scores.

Treatment group versus 2007-2008 building average group (letter recognition). In Table 7, the first set of data that is analyzed is the comparison of the differences of means of the treatment group and the 07-08 building average group. The null and alternate hypotheses are represented symbolically as H_0: $\mu = 87.88$, H_1: $\mu > 87.88$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given. The p-value for the 2007-2008 building average group was .08. This is greater than .05; therefore, the null hypothesis was not rejected. The *t*-test performed on this set of data did not show that the treatment group mean was significantly greater than the building average mean.

While the statistical test did not indicate that there was a significant difference between the treatment group mean and the building average, there was substantial growth in the overall mean of the group's performance. The treatment group made gains of 60.63 percentage points in the overall mean performance on the skill of letter recognition. This rate of growth shows that the students in the treatment group made some, but not significant, gains in this important basic building block for the success of the group's reading ability.

Treatment group versus 3-year average group (letter recognition). The second comparison of data represented in Table 7 is the comparison of the differences of means between the treatment group and the 3-year average group. The null and alternative hypotheses are represented symbolically as H_0: $\mu = 89.52$, H_1: $\mu > 89.52$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given. The p-value for the three-year average group was .003. This p-value was below the guideline of .05; therefore, the null hypothesis, that there would be no significant relationship between the treatment given and student performance, was rejected. The treatment group's rate of improvement, 60.63 percentage points, was above the rate shown by the three-year average group, 23.24%, and, therefore, with the null rejected, the alternative hypothesis was considered as the more accurate account of the statistical results.

Treatment group versus district expectations (letter recognition). The third comparison of data represented in Table 7 was the comparison of the differences of means between the treatment group and the district expectation. The null and alternate

hypotheses are represented symbolically as H_0: $\mu = 50$, H_1: $\mu > 50$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given. The numbers in these hypotheses represent the assumed average mean of the district expectation based on the projection of 100% at the end of four quarters of school. The district expectation's derived p-value for the comparison of the treatment group's mean and the district expectation was $p < .001$. That p-value was < .05; therefore, the null hypothesis was rejected. The treatment group's overall performance at the end of the second quarter, 77.38 percentage points, and the 60.63 percentage point rate of growth were both above the assumed mean of the district expectation of 50%. Therefore, with the null rejected, the alternative hypothesis was found to be true.

Table 7

t-Tests for Letter Recognition

Letter Recognition			
Variable	*t*-value	p-Value	Decision
07-08 Building Average	-2.711936	0.08034691	Do Not Reject Ho
3-Year Average	-3.1362117	0.00339764	Reject Ho
District Expectation	7.0704047	P<.001	Reject Ho

Table 8 shows the *t*-tests and p-values for the letter sound production tests. The *t*-tests compared the mean of the treatment group to the means of the 2007-2008 building average group, the three-year average group, and the district expectation. Once the *t*-tests

were calculated, p-values for each of the comparison groups were determined. Table 8 shows the results of the *t*-tests conducted to measure the difference between the following groups in the area of letter sound production.

The following group results in the area of letter sound production were compared:

1. Treatment Mean versus 2007-2008 Building Mean
2. Treatment Mean versus Mean Score for Past Three Years
3. Treatment Mean versus District Expectation

Treatment group versus 07-08 building average (letter sound production). The null and alternate hypotheses are represented symbolically as H_0: $\mu = 74.29$, H_1: $\mu > 74.29$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given, when compared to the control group labeled the 2007-2008 building average group. The results of the *t*-test that was performed to compare these two groups resulted in a p-value of .0414. Therefore, the null hypothesis was rejected. The alternative hypothesis, which stated that there would be a significant relationship between the treatment given and student performance, was found to be true. The treatment group made gains of 60.94 percentage points in the overall mean performance skill of letter sound production. This rate of growth was above the building average group by over 20 percentage points.

Treatment group versus three-year average group (letter sound production). The second comparison of data represented in Table 8 was the comparison of the differences of means between the treatment group and the three-year average group. The null and

alternate hypotheses are represented symbolically as H_0: $\mu = 77.79$, H_1: $\mu > 77.79$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given. The p-value that was derived for the three-year average group was .0129. The p-value was less than .05, and, therefore, the null hypothesis was rejected. The p-value shows that with the null hypothesis being rejected, the alternative hypothesis (H_1: $\mu > 77.79$) was found to be true.

Treatment group versus district expectations (letter sound production). The third comparison of data represented in Table 8 was the comparison of the differences of means between the treatment group and the district expectation. The null and alternate hypotheses are represented symbolically as H_0: $\mu = 50$, H_1: $\mu > 50$. The null hypothesis stated that there would be no relationship between the treatment given and the students' performance on the post-test after the treatment was given. The numbers in these equations represent the assumed average mean of the district expectation based on the projection of 100% at the end of four quarters of school.

The district expectation group's derived p-value for the comparison of the treatment group's mean and the district expectation was $p = .0149$. The p-value of .0149 was less than .05; therefore, the null hypothesis was rejected. The null hypothesis stated that there would be no significant relationship between the treatment given to the students and the performance of those students on the post-test assessment. The treatment group's overall performance at the end of the second quarter, 63.69 percentage points, and the 60.94 percentage point rate of growth were both above the assumed mean of the district

expectation of 50%. Therefore, with the null rejected, the alternative hypothesis was found to be true.

Table 8

t-Tests for Letter Sound Production

Letter Sounds			
Variable	*t*-value	p-Value	Decision
07-08 Building Average	-1.858956	0.041382122	Reject Ho
3-Year Average	-2.4735541	0.012908643	Reject Ho
District Expectation	2.4004175	0.014900301	Reject Ho

Summary

At the beginning of the 2007-2008 school year, all kindergarten students were given the Rigby Benchmark Assessment to determine which alphabetical letters and corresponding letter sounds each child knew prior to entering kindergarten. Based on these baseline pre-test results, 16 students scored significantly below their peers, with all 16 students scoring below the 25th percentile on letter recognition and letter sounds.

The 16 students who scored the lowest on this assessment met with an intervention specialist on a daily to weekly schedule and learned the basic literacy skills they lacked. These students met with the intervention specialist for varying periods of time in the areas of letter recognition and letter sound recognition. The size of the groups that met with the intervention specialist varied according to individual student needs and the severity of deficiencies identified by the assessment tool. Initially, the students' time

with the specialist ranged from 30 minutes a day of individual intervention time to 30 minutes twice a week in a small group of five. After three weeks of intervention time, the students again took the Rigby Assessment test to determine if growth had occurred. The students' time working with the intervention specialist was modified to meet each student's needs. Students showing significant growth decreased their time with the intervention specialist, whereas students who continued to struggle received additional time and new interventions.

By assessing the baseline knowledge of incoming kindergarten students, the teachers were able to identify students who were significantly behind their peers at the very beginning of the school year. By addressing the needs of these students through additional interventions and instruction, in addition to their normal reading instruction, all of the students made gains at a rate that was greater than that of their peers. However, while all students who received the additional instruction through the intervention specialist made gains, only 75% made significant enough gains to be at or above the average level of students who had not received additional instruction. The 25% of students who did not catch up to their peers continued the additional instruction until they were at a level comparable to that of their peers, or they were referred for special education testing.

The use of a pre-test to identify at-risk kindergarten students and provide them with additional instruction in basic reading and letter recognition skills resulted in all of the students showing some growth at a rate faster than those students who did not receive additional instruction. While the rate of the treatment group was faster than the non-

treatment group, it is important to note that many in the non-treatment group had higher baseline scores and their room for growth was substantially lower than many of the treatment group's members.

Chapter Five - Discussion

To summarize chapter one, the problem statement for this study was based on an elementary school principal's concern that necessary reading assessments and interventions were not being provided for children at the moment they entered kindergarten. The purpose of this study was to determine if the implementation of a research-based intervention program, RTI, would increase the academic performance of kindergarten students identified as at-risk, based on a baseline measure conducted at the beginning of the school year and compared to the same assessment conducted at the end of the first semester. The hypothesis was that there would be a significant increase in academic performance when at-risk students were correctly identified and given access to a research-based intervention program.

In chapter two, the literature review showed the progression of special education laws that led from total exclusion of special education students to a new method for identifying and servicing children prior to placing them in a special education setting. This new method was outlined in the IDEA of 2004. The new law prevented schools from solely relying on old methods for identifying special education students and suggested an early intervention model for helping students deemed at-risk for failure. The researcher concluded chapter two with an emphasis placed on the importance of providing assistance to students as soon as they enter school and the need for early literacy as a necessary life skill for readers.

In chapter three, the methods used to identify and provide kindergarten students with the necessary interventions to increase their early literacy skills were outlined. The

kindergarten students were assessed using the Rigby Assessment Tool to determine the percentage of alphabetical letters and letter sounds they could correctly produce. Kindergarten students scoring 25% or less were given an additional set of interventions and extended periods of instruction above their normal communication arts instruction time. The students were administered the Rigby Assessment upon entering kindergarten and again at the end of the second quarter of the kindergarten year. The Rigby Assessment served as both pre and post-test for the purpose of this study.

The kindergarten students identified as at-risk were given additional interventions. The results of their post-intervention Rigby Assessments were compared to three sets of data. First, results from the treatment group of students were compared to the non-treatment group, who were enrolled at the same time during the first semester of the 2007-2008 school year. These non-treatment, or control group, students received their communication arts instruction in the classroom with the treatment group but received no additional instruction during the school day. Second, assessment averages of the treatment group students were compared to assessment averages of 223 of the non-treatment group students who attended Harris Elementary School during the 2005-2006, 2006-2007, and 2007-2008 school years. Third, the treatment group student assessment averages were compared to the District's expectation for performance based on The City of St. Charles School District's board adopted curriculum.

In chapter four, statistical data analysis was conducted and the effectiveness of the intervention program that was outlined in chapter three was reported. The students receiving intervention services had their performance results compared to students from

two non-treatment groups and the district expectation for The City of St. Charles School District. The analyses showed, in five out of six comparisons, the treatment given was successful at a statistically significant level for improving students' literacy skills. In all six comparisons, there were considerable gains made by students in the treatment group when comparing their rate of growth to that of the non-treatment groups and the district expectation.

Based on the literature review in chapter two and the data results from chapter four, chapter five will include the following: (a) discussion of the findings, (b) recommendations for further research, (c) recommendations for practice, and (d) a report on the current status of RTI at Harris Elementary School.

Discussion of the Findings

The Assistant Superintendent of Student Services in The City of St. Charles School District asked faculty at Harris Elementary School to pilot RTI, a system that moves students through three levels of assistance, called tiers. Each RTI level represents an increase in the time, intensity, or frequency of interventions intended to meet the needs of at-risk children. The Harris Elementary School staff had many discussions about the greatest needs of the children in their building. Through those discussions, the faculty determined the need for an additional layer of academic intervention for children who were falling behind their peers and considered at-risk of failure. It was also determined in those discussions that the interventions should start with the youngest children in the building, the kindergarten students. Reading was identified as the top priority by the staff at Harris Elementary School. As a result, the Rigby Benchmark Assessment was

administered to all kindergarten students during the first two weeks of their kindergarten school year. The assessment covered a number of reading building blocks, but it was determined that letter recognition and letter sound recognition were the most basic and necessary skills needed to help kindergarten students learn to read.

At the beginning of the 2007-2008 school year, the Assistant Superintendent of Student Services provided a part-time Intervention Specialist to help with the RTI pilot program at Harris Elementary School. The Intervention Specialist, an elementary certified teacher, was hired to work three hours a day to provide struggling kindergarten students with an additional layer of instruction and intervention. The kindergarten teachers assessed all of the kindergarten students using the Rigby Assessment Instrument, already a part of the approved reading curriculum. Students who scored below the 25th percentile in the areas of letter recognition and letter sound recognition were assigned to the intervention specialist.

Sixteen students were identified, and they received interventions from the Intervention Specialist. These 16 students spent time during the school day in 30-minute increments as needed, in addition to the normal classroom time working on the Rigby Literacy Program. All 16 of the students, who received the additional interventions, showed great improvement in their ability to recognize alphabetical letters, both upper and lowercase, and their corresponding letter sounds.

At the end of the second quarter, 12 of the original 16 children in the study made gains that put them at or above the levels of their peers, who were not receiving interventions. The four students who were not at the level of their peers at the end of the

second quarter continued to show growth. They remained in the intervention program during the second semester of school, and they continued to receive the necessary interventions in order to catch up to the level of the students who were not receiving extra assistance.

The assessment averages for letter recognition and letter sound production of the treatment group students were compared to three sets of data. First, the treatment group was compared to the non-treatment group. The treatment group's rate of improvement was higher than that of the non-treatment group. Second, the assessment averages of the treatment group students were compared to assessment averages of 223 non-treatment group students who attended Harris Elementary School during the 2005-2006, 2006-2007, and 2007-2008 school years. In both comparisons, the scores of the treatment group students were higher than those of the non-treatment group students. Third, the treatment group student assessment averages were compared to the district's expectation for performance based on the board-adopted curriculum. Again, in both letter recognition and letter sound production, the treatment group scored higher than the district's expectation for performance.

It seems likely that in the case of all 16 children, the increases in assessment averages were seen as a result of filling essential gaps these students had developed through a lack of previous exposure. The typical classroom works on alphabetical letter recognition and the corresponding sounds in a very rapid fashion. The class does not stay on any single letter until every child has mastered the letter and its corresponding sound. Providing the treatment group children with additional exposure and practice with the

letters and letter sounds may be the reason why their rate of growth was higher than that of the non-treatment group children.

Recommendations for Future Research

Recalling the literature reviewed in chapter two, identifying at-risk kindergarten students as early as possible is essential to ensuring that all students receive the instruction needed to be successful (Beldin & Wood, 2005). By identifying these students at the beginning of the kindergarten school year, teachers know which students have not been exposed to basic literacy skills through verbal and written experiences. The results of this study indicate that when these children are identified and provided with the appropriate basic reading interventions, their reading ability in school improves.

The model used in this study was a modified form of the RTI model outlined in the IDEA of 2004. An increase in student achievement has also resulted for students in other school districts when the RTI model was implemented. Additional benefits from using the RTI model beyond increasing student achievement, such as a significant decrease in the number of students referred to special education testing which normally occurs at the beginning of first grade, have been seen from some of the school districts using the RTI model. Steven Beldin of the North Kansas City School District used his district as an example when he spoke at the 2006 Missouri Council of Administrators of Special education (MO-CASE) Conference in Springfield, Missouri. He reported that his school district saw a significant decrease in the number of special education referrals and attributed this decrease to the district's full implementation of the RTI model. North Kansas City School District's drop in special education referrals was specifically credited

to the early interventions given to students who did not have the help at home (Beldin, 2006). Ms. Beth Wood, Staff Development Facilitator for the North Kansas City School District, reinforced this information at a RTI training session in the summer of 2008 in The City of St. Charles School District, Ms. Wood shared the following data about special education referrals before and after the use of RTI:

Table 9

Number of Special Education Referrals in North Kansas City Schools

	1999-2000 Before RTI	2006-2007 After RTI
Number of Referrals for Special Education Testing	511	158
Number of children identified with a Specific Learning Disability	178	59
Number of students identified as non-disabled	156	51

The data in Table 9 represent a decrease in both the number of student referrals for special education testing and in the number of students that qualified for special education services (Wood, 2008).

If the North Kansas City results were to become the norm, then the special education world would change dramatically. The special education teacher, who performs diagnostic testing and places children in the special education programs, would see a decrease in the number of students being tested. There would be a decrease in the

students who do not qualify for special education services, due to previous exposure to interventions used in the RTI model. This would mean more time could be devoted to those children who have a true disability.

At the time of the study, Harris Elementary School had a different population of students than the other four elementary schools in The City of St. Charles School District. The number of students who received free and reduced lunch at Harris Elementary was only half that of the other four elementary schools. Additionally, the minority population at Harris Elementary was substantially lower than the minority populations in the other elementary schools. While the percentages of students who (a) received free and reduced lunches and (b) represented minority groups showed Harris to be a far different school from the other four elementary schools in The City of St. Charles School District, the size of the school's total populations could cause the percentages to be somewhat misleading. For instance, at the time of this writing, Harris has twice the total population of another elementary school located in the same district. The smaller school has the same number of free and reduced lunch students as Harris Elementary. Thus, when comparing percentages, the smaller school appears to have a much needier population, when in fact the two schools have the same number of actual students in that demographic category. The replication of this study in the other four schools with differing demographics may help verify the findings. This study should also be replicated with new kindergarten students at Harris Elementary, to determine if the results of this study are typical.

Further research should be done to identify the effectiveness of (a) the intervention specialist and (b) the interventions provided to the kindergarten students in

response to the RTI results. The treatment group in this study should be followed in a longitudinal study to see if the gains made, during the time of this study, continue to help the students to stay on the same level as their peers in the area of reading.

It should also be noted that since the beginning of this study, additional identification and intervention programs have been implemented at Harris Elementary in other grade levels. The success of these additional interventions has varied from grade level to grade level. The impact of this study and the other interventions will be assessed when the treatment groups move to the next grade level. It is recommended that the number of students who receive these interventions be followed over a five-year period, at a minimum, to determine if the early interventions show an impact on future learning. By identifying struggling students and providing early interventions, the students can more rapidly make the necessary gains to achieve at the levels of their peers.

Recommendations for Practice

This study focused on the effects of early learning interventions for kindergarten students. Kindergarten students considered at-risk of failure because of their performance on the Rigby Literacy Assessment were given additional instruction and exposure to basic skills in the areas of alphabetical letter recognition and letter sound recognition. The study suggested that when kindergarten students were identified early and given extra instruction, they showed growth at a statistically significant rate when compared to their peers who did not receive the extra instruction. Many of the treatment students were at or near the same ability level as their peers by the end of the second quarter.

The identification and intervention process performed in this study was a pilot for The City of St. Charles School District. At the time of this study, Harris Elementary was the only elementary school within The St. Charles School District exploring the possible advantages of a RTI approach, when helping at-risk students prior to a formal special education referral. New mandates from the federal IDEA laws, as well as state mandates, currently require all schools to use RTI in some capacity when identifying at-risk and special education students. The success of the treatment group in this study suggests that this type of early identification and intervention process should be replicated in the other four elementary schools in The City of St. Charles School District.

It is recommended that the identification process and intervention program created for this study continue, using the RTI model as a guideline for assisting all students at the first sign of concern, at all elementary grade levels in The City of St. Charles School District.

The staff at Harris Elementary School recognizes that there is a need for interventions beyond the letter recognition and letter sound recognition skills discussed in this study. The focus of this study was on two very basic skills: letter recognition and letter sound recognition. Based on the results of this study, the RTI model has the potential to be effective in teaching students additional skills in other academic areas. By applying the RTI model outlined in this study to all subjects, the potential to help students grow would result in a significant improvement over current practices. Students considered at-risk in math, science, or any other subject could be provided with early assessments and targeted, monitored interventions as outlined in Figure 11. Teachers

could meet the needs of these students and head off potential gaps in the child's education.

In addition to academic areas, the RTI model could lend itself well to the area of behaviors at school. Students often enter kindergarten with a wide range of values and behaviors. Some have been exposed to formal school settings in preschools or daycare centers and some have never been in a formal social group setting. Others have never been held accountable for their own actions, and they struggle when they enter kindergarten. By applying the principals of the RTI model, as seen in Figure 11, to the appropriate behaviors expected in a school setting, these children could have their behavior modification needs addressed before behavior problems interfere with their general education.

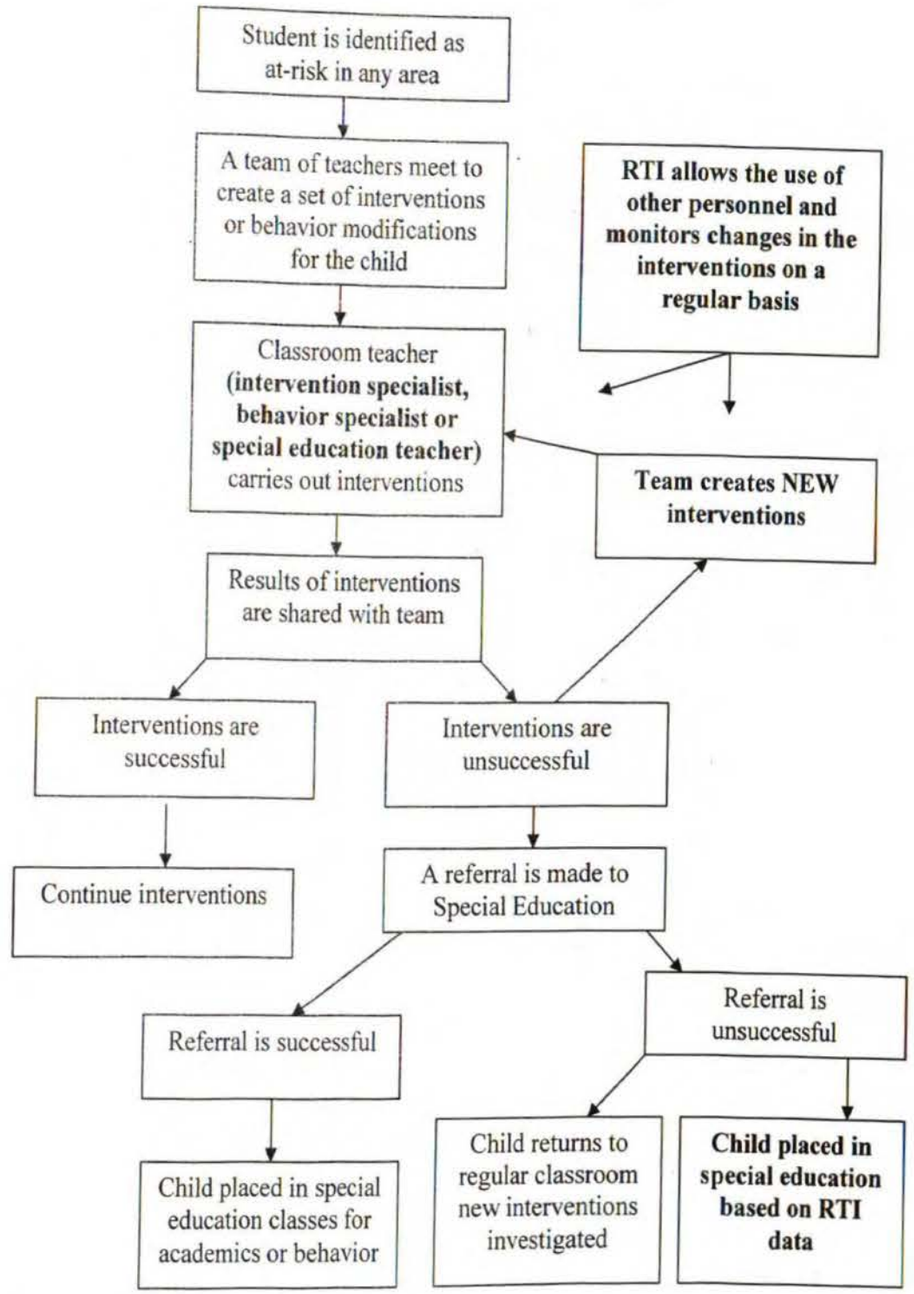

Figure 11. Algorithm Illustrating the RTI Process for All Academic and Behavior Areas

Note: The RTI process is in bold.

The success of this program should trigger an investigation into the feasibility of starting an early childhood program in The City of St. Charles School District. The success of early interventions could be replicated at the early childhood center, at the first sign of difficulty with academic skills, in children as young as three years old. The early childhood center could provide the students with a level of exposure to academic skills that they may be missing in their homes and eliminate the basic skill gaps that many students experience when entering kindergarten.

Report on Current Status of RTI Program at Harris Elementary

Since the completion of this study, the Harris Elementary School intervention program has grown into a much larger program. At the beginning of the 2008-2009 school year, all students in all grade levels were assessed to determine the children considered significantly behind their peers academically and who would benefit most from receiving interventions through the RTI model. These students were given interventions on a weekly or daily basis, based on their needs, just as described in this study. The school has implemented a partnership with some students from a nearby university. The university students serve in the role of interventionist, in order to provide more students the smaller group interventions that were found to be successful in this study. Harris Elementary has also started to train parent volunteers to serve as interventionists to ensure even more contact time for at-risk children in all grade levels.

Summary

The results for this study are encouraging to the staff of Harris Elementary School. Students identified as at-risk at the beginning of their kindergarten year were provided interventions in a one-on-one setting for 30 minutes a day. Other students received their interventions in small groups for 30 minutes twice a week. All of these students showed gains in their ability to correctly identify alphabetical letters and their corresponding letter sounds. Fourteen out of 16 students in the treatment group made gains that were significant enough to be considered at the anticipated level according to the guidelines laid out by the district kindergarten expectations for learning. The staff at Harris Elementary School set out to find a way to reach beginning kindergarten students who were significantly behind the levels of their peers in pre-reading skills. The Harris staff chose to implement the RTI model that allowed interventions to be administered at the start of school with very young children. The findings of this program are promising. Perhaps the RTI program can affect change for all grade levels and all areas of student achievement.

References

Beck, M., Curse, K., & Fernandez, J. A. (2008). An updated review of Rigby Literacy using the consumer's guide to evaluating a core reading program, Mid-continent Research for Education and Learning, *Harcourt Achieve*, 1-41. Aurora, CO:Author.

Beldin, S. (2006, December). *Response to intervention in the North Kansas City School District.* Presented at the Missouri Council of Administrators of Special Education (MO-CASE) winter conference, Springfield, MO

Beldin, S., & Wood, B. (2005). Response to intervention: Consideration for implementation. *Innovations*, *33*, 2-7.

Bender, W. N., & Shores, C. (2007). *Response to intervention: A practical guide for every teacher.* Thousand Oaks, CA: Corwin Press.

Brown-Chidsey, R. (2007). No more "waiting to fail". *Educational Leadership*, *65*, 2, 40-46.

Brown-Chidsey, R., & Steege, M. W. (2005). *Response to intervention: Principles and strategies for effective practice*. Minneapolis, MN: Guilford Publications, Incorporated.

Cortiella, C. (2006). *NCLB and IDEA: What parents of students with disabilities need to know and do.* Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.

Cunningham, A. E., Perry, K.E., Stanovich, K. E. & Stanovich, P.J. (2004). Disciplinary knowledge of K-3 teachers and their knowledge calibration in the domain of early literacy. *Annals of Dyslexia, 54*, 139-167.

Daly, E. J., Martens, B. K., Barnett, D., Witt, J. C., & Olson, S. C. (2007). Varying intervention delivery in response to intervention: Confronting and resolving challenges with measurement, instruction, and intensity. *School Psychology Review, 36*, 562-581.

Dickson, S. V., & Bursuck, W. D. (1999). Implementing a model for preventing reading failure: A report from the field. *Learning Disabilities Research and Practice, 14*, 191-202.

DuFour, R., & Eaker, R. (1998). *Professional learning communities at work : Best practices for enhancing student achievement*. New York: Solution Tree.

Eaker, R., & DuFour, R. (1992). *Creating the new American school: A principal's guide to school improvement*. New York: Solution Tree.

Fuchs, D., & Fuchs, L. S. (2006, January/February/March). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly*, 93-99.

Fuchs, L. S., Fuchs, D., & Speece, D. L. (2002). Treatment validity as a unifying construct for identifying disabilities. *Learning Disability Quarterly, 25*, 33-45.

Gersten, R., & Dimino, J. A. (2006). RTI (response to intervention): Rethinking special education for students with reading difficulties (yet again). *Reading Research Quarterly*, 99-108.

Hale, J. B. (2006). Implementation of IDEA: Integrating response to intervention and cognitive assessment methods. *Psychology In the School*, *43*, 753-770.

Holdnack, J. A., & Weiss, L. G. (2006). IDEA 2004: Anticipation implications for clinical practice-integrating assessment and intervention. *Psychology in the Schools*, *43*, 871-882.

Jenkins, J. R., Hudson, R. F., & Johnson, E. S. (2007). Screening for at-risk readers in a response to intervention framework. *School Psychology Review*, *36*, 582-600.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, *80*, 437-447.

Juel, C. (1996). What makes literacy tutoring effective? *Reading Research Quarterly*, *31*, 268-289.

Justice, L. (2006). Evidence-based practice, response to intervention, and the prevention of reading difficulties. *Language, Speech, & Hearing Services in Schools*, *37*, 284-297.

Justice, L. M., Invernizza, M., Geller, K., & Welsch, J. (2005). Descriptive-development performance of at-risk preschoolers on early literacy tasks. *Reading Psychology*, *26*, 1-25.

Knoblauch, B., & Sorenson, B. (1998). IDEA's definition of disabilities. *ERIC Clearinghouse on Disabilities and Gifted Education*. Retrieved February 13, 2007, from ERIC Digest E560 database.

Leafstedt, J. M., Itkonen, T., Arner-Costello, F., Korenstein, B., Medina, M., Murray, A., et al. (2007). "Was it worth it? You bet": The impact of PL 94-142 on lives and careers. *Issues in Teacher Education, Fall*, 19-31.

Long, R. (2005, June/July). IDEA legislation adds response to intervention component. *Reading Today, 22*. Retrieved March 26, 2007, from EBSCOhost Research Database 07374208.

Marston, D. (2005). Tiers of intervention in responsiveness to intervention: Prevention outcomes and learning disabilities identification patterns. *Journal of Learning Disabilities, 38*, 539-544.

Martin, E. W., Martin, R., & Terman, D. L. (1996). The legislative and litigation history of special education. *The Future of Children, 6*, 25-37.

Martinez, R. S., Nellis, L. M., & Pendergast, K. A. (2006). *Closing the achievement gap series: Part II response to intervention (RTI) - basic elements, practical applications, and policy recommendations* (Publication Vol. 4, No. 8, Fall). Indiana: Indiana Institute on Disability and Community.

Marzano, R., Pickering, D., & Pollock, J. (2001). *Classroom instruction that works.* Alexandria, VA: Association for Supervision and Curriculum Development.

McConnell, S. (2007, March/April). The reauthorization of the Elementary and Secondary Education Act is an opportunity to return to the law's original intent and update it for today's schools. *Principal*, 16-20.

Mellard, D. (2004). Understanding responsiveness to intervention in learning disabilities determination. *Understanding RTI.* U. S. Department of Education/ OSEP sponsored NRCLD. Lawrence, KS

Mid-continent Research for Education and Learning (2005, February). *A study of the effects of Harcourt Achieve's Rigby Literacy Program: Final evaluation report.* Aurora, CO: Author.

Missouri Department of Elementary and Secondary Education. (2004). *Missouri state plan for special education.* Jefferson City, MO: Author.

National Joint Committee on Learning Disabilities. (2005). *Responsiveness to intervention and learning disabilities* (2nd ed.). Austin, TX: Pro-Ed.

National Research Council. (2002). *Executive summary: Disproportion representation of minority students in special education.* Washington, DC: Author.

National Research Center on Learning Disabilities. (2002). *Common ground report.* Nashville, TN: Author.

Ofiesh, N. (2006). Response to intervention and identification of specific learning disabilities: Why we need comprehensive evaluations as part of the process. *Psychology in the Schools, 43,* 883-888.

Parents United Together (n.d.). *The legislative history of Special Education.* Retrieved May 14, 2007, from the Parents United Together Web site: http://www.parentsunitedtogether.com/HistorySped.html

Samuels, C. A. (2005). RTI method gets boost in spec. ed. *Education Week, 25,* 13, 1,19.

Samuels, C. A. (Nov. 2006). Ed. dept. backs research plans for RTI method. *Education Week, 26.*

Snow, C. E., Burns, M. S., Griffin, P. (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Snyder, P., & VanDerHeyden, A. M. (2006). Integrating frameworks from early childhood intervention and school psychology to accelerate growth for all young children. *School Psychology Review, 35,* 519-534.

Speece, D.L., Case, L. P., Molloy, D. E. (2003). Responsiveness to general education instruction as the first gate to learning disabilities identification. *Learning Disabilities Research & Practice, 17,* 118-123.

Strangman, N., Hitchcock, C., Hall, T., Meo, G., & Coyne, P. (2006). Response to instruction and universal design for learning: How might they intersect in the general education classroom? Retrieved February 27, 2008 from the Access Center Web site: http://www.k8accesscenter.org/training_resources/RTIandUDL.asp

Tilly, W. (2006). Response to intervention: What is it? Why do it? Is it worth it? *The Special EDge, 19,* 1-20.

U.S. Department of Education, Office of Special Education and Rehabilitative Services. (2004). *26th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act 2004,* Washington, DC: Author.

U.S. Department of Education, Office of Special Education and Rehabilitative Services. (2002). *A New Era: Revitalizing Special Education for Children and Their*

Families. Washington, DC: President's Commission on Excellence in Special Education.

United States Department of Education. (2004). *Archived Information: IDEA.* Retrieved February 13, 2007, from http://www.ED.gov/IDEA

United States Department of Education. (2004). *Archived Information: NCLB.* Retrieved February 13, 2007, from http://www.ED.gov/NCLB

Wasik, B. A. (1998). Developing a common language: A response to topping. *Reading Teacher*, *52*, 52-54.

Wasik, B. A., & Slavin, R. E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. *Reading Research Quarterly*, *28*, 178-200.

Weaver, R. (2006, Novembrer). A positive agenda: The National Education Association proposes wide-ranging revisions to fix flaws in No Child Left Behind. *Educational Leadership*, 32-36.

Weiss, T. (2000). Special Education (IDEA) - a short history. *Parents Inc.*, *22*. Retrieved February 26, 2007, from http://www.parentsinc.org/spedhist.html

Wood, B. (2008, August). *Response to intervention basics.* Presented at the City of St. Charles School District summer in service, St. Charles, MO

Yell, M. L., Katsiyannis, A. & Hazelkorn, M. (2007). Reflections on the 25th anniversary of the U.S.Supreme Court's decision in Board v. Rowley. *Focus On Exceptional Children*, *39* ,9, 1-12.

Zirkel, P. A. (2006). *SLD eligibility:A users' guide to the new regulations.* Lawrence, KS: National Research Center on Learning Disabilities.

Appendix

City of St. Charles Schools
SPECIAL EDUCATION REFERRAL PROCESS

➔Teacher Referral Begins with #1

1. **Hold building team meeting**

   a. Review most recent screening results - Please do not conduct new screenings, unless the child's ENTIRE class will be participating! (EX Vision, hearing and language screenings)

   b. Identify specific concerns and document these concerns

   c. Contact parent with concerns

2. **Develop and implement interventions (approximately 6 to 8 weeks)**

   a. Prioritize concerns

   b. Develop intervention strategies specific to concerns

   c. Document/Chart results

   d. Modify strategies as needed

   e. Refer for testing if lack of response to interventions

➔Parent Referral Begins with #3

3. **Fill out "Request for Consideration for Initial Special Education Evaluation" form (2 pages)**

   a. Provide parent with most current Procedural Safeguards (most current is Oct. 2006)

   b. Be sure the date of referral and the date the Procedural Safeguards are sent to the parent are the SAME!

   c. Attach to referral form copies of the following:

      1. Screening Results – Again, please do not conduct new screenings, unless the child's ENTIRE class will be participating!

2. Documented intervention strategies (if completed prior to parent request)
3. Standardized test scores
4. Grades and Progress Reports
5. Permanent Record
6. Work samples
7. Any other relevant information

4. Send completed packet to your appropriate Special Education Coordinators at Central Office.

5. Once the file is reviewed by the Special Education Coordinator the following process will take place within 30 days of the referral date.

- The Coordinator will schedule a meeting with the parent and the appropriate building personnel working with the child (regular education teacher, principal, counselor, etc.). The meeting may also take place by conferring with the appropriate individuals.
- From the meeting, it will be determined if an evaluation is necessary.
- If testing is needed, once permission from the parent is received, testing will be completed in 45 to 60 days.
- Before the 60 days are over, the Special Education Coordinator will schedule a staffing with the appropriate individuals to review testing results and determine eligibility for an educational disability.
- If a child is found eligible for an educational disability, an IEP meeting will be scheduled within 30 days of the staffing.

Figure 1
Special Education Process in The City of St. Charles School District

Vitaé

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