AN EVALUATION OF KINDERGARTEN READING INTERVENTION PROGRAMS

by

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(Under the Direction of C. THOMAS HOLMES)

ABSTRACT

Four different reading programs (Scott Foresman, *Road to the Code, Fundations* and a teacher made program) are currently being used in one school system. A study was conducted to determine if one program had a greater impact on reading readiness and reading preparation of kindergarten students to enable them to acquire the necessary reading skills as set forth by the National Reading Panel. The primary concern involved reading on grade level in order to meet the guidelines set by the No Child Left Behind law. As set forth by No Child Left Behind, materials used either as reading curriculum or interventions must be researched based. An assessment was completed using DIBELS (Dynamic Indicators of Basic Early Literacy Skills). DIBELS is a researched based assessment that is used to identify weaknesses in reading skills. The five areas that DIBELS assesses are: initial sound fluency, letter naming fluency, phoneme segmentation, nonsense words and word usage. Assessments were conducted at the beginning, middle and end of the year on kindergarten students. Each of the programs was compared using a univariate analysis. The results indicated that there were no statistically significant differences between the four programs.

INDEX WORDS: DIBELS, Assessment, Reading, Education laws, National Reading Panel, Reading intervention

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DEDICATION

This is dedicated to my wife Lisa and for all the years she has put up with me being in school. I also wish to thank my children for letting me be so busy for so long. Thanks also goes to Thomas Holmes for taking me on as a doctoral student.

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CHAPTER 1

BACKGROUND

The history of Federal government involvement in education dates back to the early days of the nation. The first hint of Federal involvement dates to 1777 when mathematics and military regimen were taught to soldiers in the Continental army. Soon after, in order to support the safety of the new nation, West Point was established and funded by the Federal government. In 1785, the Federal government authorized that one section of land in government owned lands be set aside for educational purposes. Ohio was granted two townships in 1787 to be used as a university. This endowment then led to the practice of setting aside government lands as higher educational facilities as territories were admitted as states into the Union. States then received a portion of the revenue from the sale of government lands to be used to support education. With the passage of the Morrill Act of 1862, 7 U.S.C. § 301, higher education institutions became the beneficiaries of Federal funding. In 1917, the Federal government passed the Federal Vocational Education Act (Smith-Hughes Act, 20 U.S.C. § 11) which now gave states money on the pre-college level to target vocational courses taught in public schools. The Federal government was beginning to expand its influence on public education. This act was followed by legislation in 1941 (directed under the Lanham Act, 42 U.S.C. § 1501) that gave money to local school districts whose tax base was adversely affected by military installations, public housing or Indian reservations which led to increased Federal involvement in education (DeBray, 2007).

With Sputnik being launched into space, the federal government became even more involved with education. The National Defense Education Act, 20 U.S.C. § 401, was passed in 1958 which put a greater emphasis on science education and research. Following this act, a series of laws have been put into place that increases the role of the Federal government in education at the local level. The Civil Rights Act of 1964, 42 U.S.C. § 2000, prohibited discrimination which affected schools in that they could no longer discriminate against students. In 1965, a major law was passed that continues to have an impact on education today. That law is known as the Elementary and Secondary Education Act (ESEA, 20 U.S.C. § 6301). An amendment to that bill was also passed that same year. These two laws provided funds to create programs to work with low income families. The amendments law also added funds specifically to target programs that worked with students with disabilities. Title I and bilingual education programs are a result of these two laws. Project Headstart was also started in 1965 in response to fighting poverty and working with children from low income families. In 1966, another amendment law, 20 U.S.C. § 6301, was added to the ESEA law of 1965 which provided money at the local level for systems to work with disabled students locally and not in state institutions. This amendment law also created the Bureau of Education of the Handicapped and the National Advisory Council which has since become the National Council on Disability. Also in 1966, the Equality of Educational Opportunity Study (Coleman Report) was done which opened the door for the busing of African American students so that desegregation could be achieved.

The next major educational law to be passed was in 1972 which is known as Title IX, 20 U.S.C. § 1001. This law prohibits discrimination based on sex. It is often

associated with women's participation in athletics but it prohibits sex discrimination in all aspects of education. As a continuation of previous laws passed concerning students with disabilities, the Rehabilitation Act of 1973, 20 U.S.C. § 701, was passed which states that programs or activities that receive federal funds, can not discriminate based on a student's disability. Reasonable accommodations must be made so that the student can participate in the program or activity. Due process safeguards were also put in place with Section 504. The Education Amendments of 1974, 20 U.S.C. § 6301, added to the ESEA law passed in 1965. An important part of this law is known as the Family Education Rights and Privacy Act (FERPA). Also known as the Buckley Amendment, FERPA provides to parents and students the right to review their educational records and the right to have their records kept private from other individuals. In 1975, PL 94-142 (the Education of All Handicapped Children Act, 20 U.S.C. § 1400) was passed. This law states that all students are entitled to a free and appropriate education in the least restrictive environment (FAPE). Geared specifically to disabled students, it requires that schools make reasonable accommodations so that disabled students have access to all programs offered by local schools. This law also states that the educational process be adapted to meet the individual student's needs. The Carl D. Perkins Vocational Education Act of 1984, 20 U.S.C. § 2301, provides federal funding to support disabled students in vocational educational classes. It further stipulates that disabled students have equal access to recruitment, enrollment and placement in vocational education.

In 1990, two major laws were passed that greatly impacted education. The first of these renamed the Education for All Handicapped Act (PL 94-142) to the Individuals with Disabilities Education Act (IDEA, 20 U.S.C. § 1400). Besides reauthorizing PL 94-

142, it also adds that transition services be added to the law. Autism and traumatic brain injury eligibility are also included in this newer version of PL 94-142. The term disabled replaced handicap as the new terminology. Disabled connotes that students are capable and able to perform like non-disabled students with accommodations if necessary. Handicapped intonates that the disabled students are less able and capable to do things like non-disabled students. The other major law of 1990 is the Americans with Disabilities Act (ADA, 42 U.S.C. § 12101). This law extends equal access and reasonable accommodations and services (Section 504 of the Rehabilitation Act) to all individuals in the workplace, public or private. This law extended the educational laws to all individuals in all settings. Workplace discrimination based on a disability was now against the law.

Goals 2000: Educate America Act, 20 U.S.C § 5801, was passed in 1994. The purpose of this law was to provide a framework so that the National Education Goals could be met by providing support for new initiatives at the school, state and federal levels. The law provides a means whereby all students have equal access to educational opportunities in order to achieve high standards academically as well as acquire and achieve high occupational skills. The result is to produce students who can achieve in the workplace. IDEA Amendments were passed in 1997, 20 U.S.C. § 1400. These amendments cover a wide array of areas in protecting the rights of disabled students. Specifically, it amends IDEA in the area of student testing on statewide as well as district wide tests. It also covers evaluations of disabled students, addresses parent participation in the decision making process of determining eligibility and placement of students, the way IEPs are developed and reviewed, planning for transitions and disciplining of disabled students. In 1998, the Higher Education Act, 20 U.S.C. § 1001, was reauthorized

and amended and requires states to produce a report card on teacher education. No Child

Left Behind (NCLB, 20 U.S.C. § 6301) was signed into law in 2001. This is a

reauthorization of the 1965 ESEA law. One of the components of this law is that schools

are now held accountable for what they do. Achievement scores of students are looked at

to determine if the school is providing an adequate education for all students. Another

component of this law is to bring all students up to grade level, especially in the area of

reading. By the year 2014, all students are supposed to be on grade level in reading. If

schools do not make adequate yearly progress (AYP) as outlined in the law, they could be

penalized. Schools must set and define high standards of what students should know.

Statewide tests are given to verify what students know. Report cards on schools, districts

and states are also part of NCLB. Certification as a highly qualified teacher is also a part

of NCLB. This measure is to ensure that teachers have the skills and knowledge they

need (DeBray, 2007; New York State Education Department, 2003; Sass, 2007;

Statewide Parent Advocacy Network, Inc., 2007).

Due in part to the law No Child Left Behind, many school systems have had to

implement research based reading intervention programs (No Child Left Behind, 20

U.S.C. § 6301, 2001). The aim of No Child Left Behind is to improve reading skills and

have all children on grade level in reading ability. This has caused a growth in the

number of reading programs available to schools. The reading programs must address the

five areas of reading that have been identified as being essential, namely phonemic

awareness, phonics, oral reading fluency, vocabulary development and comprehension

(Bukowiecki, 2007; No Child Left Behind, 20 U.S.C. § 6301, 2001). Most of the

programs claim to be researched based. The problem then arises as to which program is

of the greatest benefit and causes the greatest increase in reading ability. Schools also have to look at the cost of implementing such programs and if the associated costs match the intended outcome. Evaluation of implemented programs is also needed in making decisions as to which programs are to be used.

The purpose of this study is to evaluate different intervention programs that are being used in one county. Early interventions should be used with children before they feel a sense of failure. Also, early interventions address the narrow gap between those who are achieving and those who are not achieving before the gap widens (Santa & Hoien, 1999). Early interventions can begin to address the issues that are hindering the non-grade level achieving students. Early interventions can intercede before ineffective literacy habits are formed making it more difficult to correct later. With early interventions, students can also have the opportunity to accelerate their literacy progress (Santa & Hoien, 1999). Each elementary school in the county had the freedom to choose which program they would implement. Each school operates independently of each other with respect to curricula and does not have to conform to other schools. At the end of the school year, results will be compared to see if one program produces a larger gain in reading ability in kindergarteners. If one program produces greater gains than the others, that program more than likely will become the accepted reading intervention program for the county.

There are five elementary schools in the county. Two schools are using programs by Scott Foresman Publishing. Two schools are using a program published by Paul H. Brookes. One school is using supplemental materials that accompany English as a Second Language curriculum. Supplemental teacher made resources are also part of this

program. This same school also has another teacher that is using a different program based on the Wilson Reading System. Some of the programs are similar in nature and focus on some of the same aspects of reading ability. Some of the programs have pre/ post test measures as well as progress monitoring systems that are used throughout the teaching process. The duration of the lessons and the number of lessons taught varies from program to program.

One of the constants that all of the schools are using is an evaluation program called DIBELS. DIBELS stands for Dynamic Indicators of Basic Early Literacy Skills. This program is designed to test in a short amount of time key indicators that are required for reading. It is a predictor of reading readiness skills. Early identification and intervention with children who are at risk for reading problems is a must if reading problems are to be eliminated (Kaminski & Good, 1996). If reading problems are identified early enough, it may be possible to come closer to the mandate set forth by NCLB. Two areas that need to be addressed in the identification and intervention process are: (1) identification of students not acquiring reading skills and (2) ongoing evaluation of applied interventions. DIBELS addresses both issues (Kaminski & Good, 1996).

DIBELS is broken down into several components that test reading skill readiness in the areas that have been determined to be essential for reading ability. These areas are phoneme segmentation, initial sound fluency, letter naming fluency, nonsense word fluency, word use fluency, oral reading fluency and retell fluency (Good & Kaminski, 2003). Each test is administered for one minute except for the initial sound fluency which is still timed but in a different format. Research has been done and benchmarks set for each testing period to see if students are progressing toward the end benchmark which

indicates that the students have the skills to read and read on grade level. Grade level as defined by DIBELS is reading well enough to pass group administered state tests of reading comprehension (Good & Kaminski, 2003). DIBELS is administered three times a year. Reports are then run to show at what level students have reached benchmark levels. Extra support or intervention is then administered at different levels according to what the results indicate. A student can be at benchmark, emerging, strategic or intensive levels and then assigned as low risk, some risk or high risk. Interventions are then assigned as appropriate to meet the needs of the students and in helping them reach benchmark levels. If intervention is needed, progress monitoring occurs and results recorded to run reports to see if progress is being made to reach the year end benchmarks as set by DIBELS (Coyne & Harn, 2006; Good & Kaminski, 2003).

The DIBELS evaluation will be the instrument used to determine if one program is more effective than another. Scores from each school can be attained and compared to test the effectiveness of each program to see which program produced the largest gains in student reading skills readiness. Because DIBELS is a scripted evaluation, very little error should occur from school to school although there will be slight variations from tester to tester. However, tester variations were taken into account in developing the program and showed no visible difference in the outcomes. The DIBELS report will be the one constant for all the schools. DIBELS will be used as an evaluation of the various intervention programs currently being used. Based on the results of the evaluation, decisions may be made as to which programs will be used in the coming years. However, this paper can not be the only factor in making those decisions.

Assessments are only good if they are used. Assessments should answer questions posed by teachers and schools that lead them to make informed decisions about instruction and curriculum strategies and designs. These decisions are data based and driven. Assessments, as described by Coyne and Harn (2006) have four major purposes: as screening instruments, to progress monitor, to diagnose and to measure outcomes. Assessments that are used as a screening instrument, do not tell with 100% accuracy what the students reading abilities are. They simply point out areas where reading difficulties are being experienced or may be experienced in the future. Coyne and Harn (2006) found that quick assessments dealing with phonemic awareness and alphabetic knowledge are predictive of reading success. DIBELS falls into this category of being a brief assessment of these essential skills. As mentioned previously, progress monitoring provides data to change instructional interventions to help students achieve grade level reading skills. The diagnostic component of an assessment identifies specific areas where students are having trouble and are not responding to the current method of curriculum delivery. The last component of assessments is measured outcomes. The last benchmark data that is gathered is considered the outcome measure. If students have met or exceeded the set benchmark, chances are they will become good readers.

Program 1 Scott Foresman

The Scott Foresman Early Reading Intervention program is one of the intervention programs currently being used by two of the schools. This program is designed around lessons with various activities in each lesson to keep the attention of the students. Each lesson lasts only 30 minutes with each activity lasting three to five

minutes. Each lesson can also be broken down into two 15 minute lessons if needed. There are 126 lessons in the program that cover 30 weeks of instruction. The program is designed for small groups of two to five students. The program can be delivered by a certified teacher or by a para-professional because of the program format. All instruction is done by certified teachers with para-professionals being used in small groups to re-enforce instruction (Grek, 2003; Simmons & Kame'enui, 2003).

The intervention program is a self-contained kit. The teacher does not have to spend much time in preparing the materials. Making copies of the worksheets is the largest time consuming portion of the program. Each kit contains a teacher guide that outlines the program. Also included in the program is a teacher resource package which includes things such as games, letter and picture cards. An assessment handbook is also part of the kit. Scott Foresman recommends using some type of an assessment program in conjunction with the program (Grek, 2003). DIBELS is one program that is recommended. The assessment book that comes with the kit is to be used after a more formal assessment has been given. The purpose of the assessment book is to help determine what areas need to be strengthened and to provide the tools needed to help in strengthening the identified areas. The assessment book provides a placement test which is used to group students together in groups of like ability and helps to determine the beginning point of the lessons for the group. Progress monitoring assessments determine if the students are progressing or if re-teaching/review needs to happen. Progress monitoring also helps determine if students are ready to advance to the next part of the program. Students also have a weekly progress monitor checklist that helps track progress. This weekly checklist also helps determine if the students need re-teaching/

review or are ready to move to the next part of the program. An exit test is also part of the program. The purpose of the test is to determine if the students have mastered the necessary skills to enable them to read (Simmons & Kame'enui, 2003).

The kit also includes decodable reading books that re-enforce learned skills. Manipulatives such as letter tiles and letter cards are also part of the kit. Student activity books are included as part of the kit. A dinosaur puppet is included in the kit to be used at the teacher's discretion to help teach a lesson. Lined white boards are also included to give students practice in what they have learned. As part of the kit, a video is included that demonstrates an actual lesson being taught. This is to be used to help the teacher perfect their own skills at teaching the concepts. This video can also be reviewed throughout the year as a refresher course to make sure the teacher is using the materials correctly. Another video from the authors of the program is also included that discusses the research behind the program (Simmons & Kame'enui, 2003).

Each lesson is broken down into two parts. The first part of the lesson focuses on phonological awareness and the understanding of the alphabet. The second part of the lesson focuses on writing and spelling. If a child is exhibiting problems in the lesson, there are re-teaching strategies available for immediate use by the teacher. Each lesson is carefully organized and sequenced so that student success is greater. The sequencing order is based on skills that are needed by the student to read. Learning is a scaffolding process. As students learn reading skills, and then demonstrate mastery of those skills, they build on those skills for the next part of the lesson. Explicit instructions are used in each part of the lesson to help ensure student success. Each lesson part has a card with the objectives stated clearly, each activity to be done, teacher directions on what to

say, length of the activity and re-teaching activities if needed. Everything is self-contained on one card. The teacher just has to make sure she has all the materials close by so she can use them when called upon in the lesson. Systematic review is also a part of each lesson.

The scope and sequence of the program is divided into four parts. The first part deals with learning letters and sounds. The emphasis in this part is to learn letter names and sounds and then be able to identify letter sounds, both the initial and last sounds. Part one has 42 lessons that cover these topics. Concentration is put into learning new phonological skills in this part of the program. As skills are acquired, a review component is then added so that retention of the skills is learned and not just memorized. Part two of the scope and sequence emphasizes segmenting, blending and integrating sounds into words. It consists of 30 lessons. The first part of this section deals with segmenting and blending sounds into words. The second part of this section deals with integrating sounds and letters. The emphasis in this section of the program is to begin having students take individual words, break them into letter sounds and names and then put them back together to form words. The second part of this section has to do with students integrating the thought process of breaking down words into its parts and seeing the relationship between the letters and sounds and words. Just like part one, there is a review process that also accompanies the skills acquired in part two. Part three deals mainly with reading words and has 24 lessons. This would incorporate using the previous skills in order to read words. Word patterns are taught as another aid to decoding new words. Part three deals with segmenting and blending sounds into words and reading simple words. More emphasis is placed on reading words in part three than in part two.

Part four emphasizes reading of words and sentences as well as short easy read stories. They have 30 lessons to cover. Just as in the previous parts, review is important so that adjustments can be made in the teaching process (Grek, 2003).

The Scott Foresman Early Intervention program is the result of a study conducted at the University of Oregon called Project Optimize. This was a five year longitudinal study addressing two key questions: What types of instruction and intervention are most effective with the bottom 25% of kindergarteners? and How intensive should the intervention be (time, duration, and instructional delivery) for students to reach satisfactory goals and maintain them over time? The study focused on kindergarten students. 441 kindergarten students from seven schools (all Title I) in the Pacific Northwest were chosen to participate in the initial screening. The students were screened on letter naming and onset recognition fluency. Only the bottom 25% in both categories was chosen to participate further in the study. They were invited to attend an extended day kindergarten which consisted of an additional 30 minutes of instruction time. These children were then randomly assigned to three groups to receive the three various interventions. The sample size consisted of 58% males and 42% females with 112 students at the beginning kindergarten level, 96 at the end of kindergarten and 77 at the end of first grade. Instruction was delivered in small groups of two to five children for 30 minutes each day. The teachers involved in these interventions were either certified teachers or para-professionals. Data were collected before the interventions began as well as after the interventions. Progress on all three interventions was monitored monthly. The three interventions were similar in that all three had an emphasis on decoding skills. Two of the three (including Scott Foresman) focused on phonological awareness, alphabetic

understanding and word reading and were very specific on the amount of instruction dedicated to these skills which was 15 minutes. Both were highly specific in instruction and delivery. The remaining 15 minutes is where these two interventions differed. Scott Foresman (intervention A) concentrated on more phonological awareness, developing writing and integrating phonological awareness with orthography (letter sound to whole word writing). The second intervention (intervention B) focused on repeated reading practices, developing literature, explicit vocabulary instruction and explicit story grammar and retell instruction. Both were very explicit in instruction and duration on activities. The third intervention (intervention C) also stressed decoding skills but was less strict and explicit on instructions and delivery time. Instruction focused on a range of phonological awareness skills, alphabetic understanding, word reading and writing (Grek, 2003; Simmons & Kame'enui, 2003).

Data were gathered on two different tests, Phoneme Segmentation Fluency and Nonsense Word Fluency. Phoneme Segmentation is where students are given a word orally and the student must produce all the sounds that are in the word. On the first test, the ending benchmark was to achieve 35 phonemes per minute by the end of the school year. Data were collected from January through May when the ending test was administered. Students in all three of the interventions surpassed the benchmark of 35 phonemes per minute. However, the students that had intervention A (Scott Foresman) had a higher gain than did the other two interventions. The students receiving intervention B also scored higher and had higher gains than those students receiving intervention C. Higher gains is defined as a larger gain from the beginning data to the ending data (e.g., 30 phonemes per minute to 47 phonemes versus 24 phonemes to 40

phonemes per minute). Students that had intervention C did reach the benchmark of 35 phonemes per minute, but just barely. The students receiving intervention A also reached and passed the benchmark two months earlier than the students receiving the other two interventions. Students receiving intervention B reached the benchmark one month before the end of school while those receiving intervention C reached benchmark with the last testing. Data were also compared using scores from students who received no interventions versus students who received one of the three interventions. The percentage of students reaching benchmark was higher for those students who received an intervention. 87% of students receiving intervention A reached benchmark while 73% reached benchmark using intervention B and 70% reached benchmark using intervention C. Of the students who received no intervention, less than 30% reached benchmark (Grek, 2003; Simmons & Kame'enui, 2003).

Data were also gathered on Nonsense Word Fluency. Nonsense Word Fluency is where students are shown a series of nonsense words but the students must be able to read the word as a whole word or be able to produce the correct sounds in the nonsense word. This test tests decoding skills as students see and read unfamiliar words. The benchmark for this test at the end of the year is to produce 25 letter sounds per minute from visual nonsense words. Those students that were receiving intervention A (Scott Foresman) achieved larger gains from the beginning evaluation to the ending evaluation. They also passed the benchmark at an earlier rate than did the students receiving the other two interventions. It was also noted that students receiving intervention A surpassed the benchmark by 56%. Students receiving intervention B also passed the benchmark of 25 letter sounds per minute by the last evaluation. Students receiving intervention C barely

made the benchmark by the last evaluation. Intervention A students reached the benchmark in March compared with intervention B students who reached the benchmark between April and May and intervention C students who reached the benchmark in May with the last evaluation. In terms of real numbers, intervention A students started at 10 sounds per minute and increased to almost 40 sounds per minute. Intervention B students started at seven sounds per minute and increased to 30 sounds per minute while intervention C students started at five sounds per minute and ended at 25 sounds per minute (Simmons & Kame'enui, 2003).

According to the researchers, 97% of the children using intervention A (Scott Foresman) experienced faster achievement rates and were able to sustain those gains over a longer period of time. The researchers also compared specificity and emphasis as lone entities versus a combination of the two together. Interventions A and B are very specific in instructions. Students receiving these two interventions made comparable gains to students receiving intervention C. The difference in the interventions is that in interventions A and B, the students only received 15 minutes of specific instructions versus 30 minutes of less specific instructions using intervention C. The researchers concluded that specific instructions can reduce the amount of time spent on the topic. The researchers also concluded that emphasis on phonology and alphabetic tasks also affected achievement outcomes. The conclusion reached by the researchers is that a combination of emphasis on phonologic and alphabetic tasks with specific instructions yielded greater gains earlier than relying on either emphasis or specificity by themselves. The Scott Foresman Early Reading Intervention program uses this combination as it's basis for a reading intervention program (Simmons & Kame'enui, 2003).

Program 2 Road to the Code

Another program that is currently being used is called *Road to the Code*. This

program is based on two studies that covered a 10 year period (Wahl, 2003). *Road to the*

Code was developed out of the findings of both studies. The focus of this program is

phonemic awareness and alphabetic understanding. It uses games to emphasize both of

these points. It is a scripted program of instruction but can be modified as needed by the

teacher to meet the needs of the students. It is an 11 week program with four sessions

each week lasting 10 to 20 minutes. It is also taught in a small group of four to five

students. The program is set up in such a way that it increases the probability that

students will respond with the right answers. This acts as a re-enforcer of learned

knowledge. Instruction can be changed to help a student to understand the concepts. The

program is not so rigid that it can not be modified. Lessons can be repeated if necessary

in order to help the student grasp the concepts. Lessons can also be shortened due to time

constraints if needed. However, the opening activity must be done with every lesson as it

concentrates on phonemic awareness (Wahl, 2003).

The lessons are broken down into three activities lasting from five to seven

minutes depending on the needs of the students and their ability to grasp the ideas being

taught. The first activity of each lesson is called Say It and Move It. In this activity,

students move tiles as they identify the sounds of each letter in words. This is modeled by

the teacher before the students attempt to identify letter sounds. After the word has been

broken down into each segment, the word is then repeated as a whole word at normal

speaking speed. As students increase in sounding out letter sounds, the teacher no longer

has to model the sounds. This allows for student retention of letter sounds and builds

immediate recognition of letter sounds with the letter itself. The second part of the lesson concentrates on letter names and sounds. This builds on the first activity and increases recognition between letter sounds and names. Initially, eight letters are introduced in this section. These letters are chosen because of the myriad combinations that can be formed using only these eight letters. As students become more comfortable with these letters and have mastered the combinations presented in the lessons, other letters can be introduced and the lessons repeated using different letters and sounds. Words are kept to a consonant-vowel-consonant combination. Lessons can be shortened as needed or spread out over two days if needed. The final activity of each lesson is a review and re-enforcement of phonological awareness. In this part of the lesson, more activities such as those used in the initial lesson activity can be engaged or lessons dealing with initial sounds, rhyming parts of words, segmenting words in a story or blending words in a story that the teacher has segmented. Other activities that can be used are pictures where the students sound out the initial sounds, listen as the teacher uses a puppet to segment or blend sounds. The idea behind this part of the lesson is to create a game like atmosphere where review is the object but done by games or fun activities (Wahl, 2003).

Road to the Code is to be used where reading activities are a big part of the curriculum. These activities may include reading to students or having students engaged in reading and writing activities. *Road to the Code* is meant as a supplement to the existing curriculum to re-enforce early reading skills. The main goal of this program is to teach students the relationship between letters, letter sounds and words. If students are able to master these skills and see this relationship, reading will become easier (Wahl, 2003).

Even though *Road to the Code* is scripted, teachers are not bound to use the script word for word. Lessons can also be varied according to the needs of the students. This program is less restrictive than the Scott Foresman program. Variation can occur and is encouraged if it meets the needs of the students. Suggestions for pacing and differentiating the lesson to meet the needs of students are also put in the manual as a ready reference for the teacher. The manual is written in such a way that professional training is not needed. Directions are clear and concise. Scripts are written as a guide to be used until the teacher is familiar enough with the activity so that the script is not needed. Lessons are highly structured and put in a developmental sequence to meet student needs. The lessons are also structured so that immediate feedback is available to the students as well as correction of concepts. Because immediate feedback is given, students have a greater chance of producing correct responses which corresponds with learning the concepts. Teacher notes are written in the manual opposite the lesson to point out concepts being taught, ideas on differentiating the lesson, and adapting activities to other parts of the lesson.

The *Road to the Code* program is the result of two studies covering a 10 year period. The first study looked at six kindergarten classrooms and concentrated on the relationship of phoneme segmentation and letter name and letter sound training on early reading skills. The specific goals of the study were: 1) to see if kindergarten students can break down words into the phonemes that make up the word 2) to look at the effects of segmentation training on early reading and spelling skills and 3) to look at the effect of letter naming and letter sound training with phoneme segmentation skills as it relates to early reading and spelling skills. A group of 89 kindergarten students were chosen from

six schools. All students were selected based on a test of segmentation skills and letter name/ sound skills. They were then placed into three groups with no significant differences in race, gender or age. One group received interventions very similar to the present program of *Road to the Code*. Teaching group sizes, duration of intervention and frequency of intervention were very similar to the format used by the *Road to the Code* program today. The second group mirrored the first group in group size, duration and frequency of the intervention. The difference with this group was the intervention they received. This group received instruction in language activities such as vocabulary drills, listening to stories, semantic categorizations and letter name /sound drills. The letter name/sound drills were similar to those used in the first group. The third group received no intervention. A pre/post test design lasting seven weeks was used in this study. At the end of the study, students were tested using the Woodcock Reading Mastery Word Identification subtest, a test of phoneme segmentation, a test of alphabet letter names and sounds and a reading test of phonetically regular words. The researchers found that the treatment group (the group receiving all the interventions) did better than the other two groups. The researchers found there was a relationship between early reading and spelling skills and phonemic awareness with letter name/sound recognition. Instruction that included phonemic awareness and letter name /sound recognition greatly improved the ability of students to acquire early reading and spelling skills. Instruction only in letter naming/sound recognition did not significantly improve early reading and spelling skills (Wahl, 2003).

The second study was similar to the first study in that it used a pre/post test, treatment/control design. Students involved in this study were lower in their phonemic,

letter naming/sound recognition skills than the students in the first study. This study was also a longitudinal study that included students from kindergarten through second grade. The intervention was expanded from seven weeks to 11 weeks which is more in line with the current *Road to the Code* program. Group size, frequency and duration of intervention were the same as in the first study which is in line with the current *Road to the Code* program. There were no significant differences in gender, race or age between the treatment and control groups. At the end of the study, students in the treatment group did significantly better than the control group on tests of phoneme segmentation and letter name/sound recognition. The treatment group also did significantly better on reading phonetically regular and irregular words as well as doing better on a measure of developmental spelling. This study was done in the classroom with regular teachers as the instructors. Other studies previously done had used specialized teachers in settings outside of the classroom. This indicates that the program can be implemented as part of the regular classroom instruction by the regular teacher without specialized instruction. Both studies indicate that phonemic awareness and the alphabetic principle (letter names correlated to their respective sounds as represented by letters) are crucial to developing early reading skills (Wahl, 2003).

Program 3 Fundations

 Fundations is another reading intervention program. *Fundations* is a subprogram of the Wilson Reading program which is designed to be an intervention program. Originally developed as an intervention program for children with dyslexia, it has been expanded to help children who are below grade level in reading. The focus of the Wilson

Reading program is to help students learn to decode words and to learn how to spell words correctly. The Wilson program is divided into 12 steps which are incremental in nature and revolve around the Orton-Gillingham multisensory philosophy. A variety of activities are used to integrate the senses in the learning process. Students hear stories read to them, read the stories to others, retell the stories, write vocabulary in notebooks as well as sky writing (spelling the words in the air), tapping phonemes on their fingers and using visualization techniques to link words with pictures the students have created in their minds (Johnson, 2004). The first six steps revolve around learning basic decoding and encoding (spelling) skills. Steps seven through twelve continue to build on those skills as well as focusing on word analysis, comprehension, vocabulary development and metacognition. The Wilson program provides instruction in the following areas: phonics, phonemic awareness, vocabulary, comprehension and fluency. The Wilson program was first introduced in 1988 (Johnson, 2004).

Fundations grew out of the original Wilson reading program. *Fundations* was introduced in 2002 and was geared specifically for students in kindergarten through third grades. Whereas the Wilson program was designed for small group or one on one instruction in an intensive situation, *Fundations* can be used in a whole class setting as a preventative measure or in a small group setting. It can also be used as an intervention with the lowest achieving students or with students who have learning disabilities as an intensive intervention. Lesson length will be determined by the targeted group. Whole class lessons last about 30 minutes while supplemental help lasts an additional 30 minutes. Students with learning disabilities also receive an additional 30 minutes to an hour of individual instruction. Learning disabled students can receive as much as two

hours of reading instruction compared to the whole class receiving only 30 minutes with some students receiving up to one hour of reading instruction. The *Fundations* program is to be used in conjunction with a literature based program of instruction (Robinson & Wahl, 2003).

Phonemic awareness, letter recognition, phonics, syllable types and affixes are the primary areas of focus for the *Fundations* program. Each lesson is explicit and systematic in its instructions so that students are given numerous chances to produce correct responses. Immediate feedback is given to reinforce previously learned skills or newly acquired skills. With repeated repetition and correction as needed, mastery of the concepts is achieved. Concepts are spiraled in the lessons so that if concepts are not mastered, the students stay on the same level until mastery is achieved. *Fundations* consists of three levels, K, 1 and 2. Level K focuses on learning letter names and sounds, the association between written letters, their sounds and letter names, and phonemic awareness. In level K, students use sky writing to form letters. They use sound cards, tiles, and tapping techniques to learn phonemes and blending skills. Paper and pencil writing of words is also utilized. Students also learn to read consonant-vowel-consonant (CVC) words in level K. Level 1 reviews these concepts and builds on them by adding digraphs, long vowel sounds, two syllable words, base words, suffixes, vocabulary, comprehension, fluency and writing skills to the skills mastered in level K. Level 2 reviews and builds on the skills mastered in levels K and 1 and adds practice at reading and spelling words in word teams according to vowel teams, dividing multi-syllable words into its parts and identifying syllable types (Johnson, 2004; Robinson & Wahl, 2003).

Phonemic awareness is built using one syllable words and manipulating the words to create new words. As students begin to master the words, they then build on that word by manipulating, substituting, adding or blending phonemes. To help solidify the concept of phonemes, students learn to tap their fingers for each phoneme that makes up the word. As they break down the words into its phonemes, they tap their thumb with each finger as they produce the phoneme. Often, they hear the phoneme first from the teacher and then they mimic what they have heard. As mastery increases, students graduate to multi-syllabic words. Another technique that is employed is creating letter-keyword-sound combinations. This technique helps students to remember the name of the letter and the sound that accompanies the letter. Students then practice making up their own words using letters and sounds they have already mastered. This activity is used to teach and review digraphs, blends, consonants, vowels, and to identify parts of words such as the base or root word with suffixes. Students are able to break words into syllables so that they can better read words that are unfamiliar to them.

Students are also presented with trick words that they work with so they can learn how to correctly spell the variations of the same sounds in words. Students use a variety of techniques to learn the various spellings. They make dictionaries of new words they have learned. They make lists of word groups that have the same trick in them. They write words leaving out the part that can be confusing and use the various spellings to see which is the correct spelling of the words. They then check themselves by looking in a dictionary they have made using words they have learned. For example, activities are done with the *ai/ay* sound so that students can learn which words are spelled with *ai* and which are spelled with *ay*. Vocabulary lists are made as a future reference for the

students. In words in which a sound can be spelled differently, students do different activities that teach the different spellings. Again, word lists are made for future reference. An example of this would be the word *froze*. Students have to identify which sound can be spelled differently. The students then do activities trying to identify which is the correct spelling. As part of these activities, students are also marking the words (diacritical, circling, underlining, etc) to help them remember the correct spelling of the words. Multi-syllable words are broken down into their syllables. The teacher pronounces the words and the students have to write each syllable. Word of the day and trick words are also studied. These words are high frequency use words. The trick words are memorized since they do not always follow the standard rules. Again, word lists are generated so they can be a reference for future use. With these types of activities, writing is an integral part of the lesson so that students get reinforcement of the concept they just learned (Johnson, 2004; Robison & Wahl, 2003).

To help with fluency, teachers employ both choral readings and echo readings. Students also do controlled readings which mean they re-read stories they have already read. Stories use 95-100% decodable words so that students can read the stories on their own. Practice in accuracy, speed and expressive reading are part of this exercise. Comprehension is addressed by means of retelling what a student has read. Visualization is taught as a technique to aide in comprehension. Setting, characters, sequence of events, plot and resolution are also taught during this part of the lesson. *Fundations* is not real strong in comprehension, so it recommends that it be used in conjunction with another more formal program of reading comprehension (Johnson, 2004).

The *Fundations* reading program is a new program, being published in 2002. There has been no research specifically on the *Fundations* program or its outcomes. All the research that points toward potential outcomes is based on evaluations of the Wilson reading program. Since *Fundations* is a subgroup of the Wilson Reading program, recent research on the Wilson reading program could be closely associated with the *Fundations* program. Outcomes reached by the Wilson Reading program could also be associated with the *Fundations* program since they are comparable in their approach to teaching reading. One study was conducted over a two year period (1999-2001) involving 374 students with a mean age of between 10 and 11 years. The following four outcomes were reached as a result of this study: pre/post test differences were statistically significant, low IQ students benefited from remediation as well as high IQ students, the most severe group of students saw greater improvement than students in the least severe group and students across all grade levels (3-8) benefited from remediation (Johnson, 2004). This last statement indicates that young as well as older students benefited from the remediation program. There are problems with this study however. The first problem is that this study involved students in grades three through eight. *Fundations* is geared for kindergarten through third grade students. The results may not be accurate for beginning readers nor may the results be extrapolated to fit the kindergarten through third grade students. Another problem with this study involves the pre/post test format. There was no control group in the study which weakens the results. Because of no control group, the gains made by the students can not be attributed directly to the reading intervention but may be due to other factors (Robinson & Wahl, 2003).

Another study was conducted in the school year 2000-2001. This study also studied the effects of the Wilson Reading program as it addressed spelling. The results also indicated that the majority of students in first through third grade were above grade level in spelling. This study also has the same weakness as the above named study in that a control group was not used. The results therefore, can not be directly attributed to the Wilson reading program. The gains in spelling may be attributed to other instructional programs offered at the school (Robinson & Wahl, 2003).

A study was also done in 1995 that studied the effectiveness of the Wilson reading program. This study was done by teachers who were trained in a two day seminar on the Wilson Reading program involving 220 students who had language learning disabilities. Most of the students were receiving special education services. A pre/post test design was used to evaluate any gains made by the students. Significant gains were made in the following areas: word attack, passage comprehension and total reading scores. Most of the students used in the study had not made significant progress using other intervention programs (Johnson, 2004).

In the 1997-1998 school year, another study involving 55 locations nationwide participated in a study of the Wilson Reading program. 168 students in grades two through five were used in the study. Similar gains were made by these students as were the students in the previously cited study (Johnson, 2004). There are two major problems with these last two studies. First, no control groups were used in the studies. The reported gains could be due to the reading program, but could also be due to other factors not mentioned in the studies. The second problem is that the data collectors were the teachers that administered the intervention. Bias could be present in the data.

In spite of these problems, all of the studies involving the Wilson reading program seem to indicate that using the program seems to accelerate reading growth in students greater than one year of growth. The potential for this is that students who are using the program are already behind in reading skills. This program seems to help close the gap these students have in reading. A shortfall of these studies is that they do not focus specifically on the *Fundations* program and did not include kindergarten students in the studies. However, since *Fundations* is a subgroup of the Wilson Reading program, it would be expected that the same or similar gains would be expected from using the program.

Program 4 Extra Support Handbook

Another reading intervention program is the Houghton Mifflin Extra Support Handbook. This handbook is part of the Houghton Mifflin Reading program. It is designed to work with students who may be below grade level in reading. The expectation of the program is to help lower achieving students perform at grade level in reading. The Extra Support Handbook is correlated with the Houghton Mifflin Reading series. Lessons are designed to be taught over a five day period that pre-teaches key reading skills. The pre-teaching allows the students to go into greater depth of key skills to be learned. Pre-teaching also allows the students to become familiar with the key concepts before the skills are taught in the regular lesson. Pre-teaching allows the students to practice the key concepts before the core lesson is taught. By participating in the pre-teaching lessons, the students have a greater chance of being successful when the lesson is taught in a whole class setting since they have already seen and worked with the

key concepts. Confidence and fluency in reading are increased because when the lesson is taught in a whole class setting, the students have already been exposed to and worked with the key concepts.

Lessons focus on phonemic awareness, the alphabet and decoding skills. Directions are explicit and systematic with concepts being presented in a logical, step by step order. Scaffolding is used throughout the lesson. This is accomplished by the teacher modeling the concepts, with visual examples and interactive practice. Lessons also include regular assessments to monitor students' progress and mastery of reading skills. Assessments are done at the beginning of the year to evaluate the skills that the students already possess. After the initial assessment, students are put into two groups, benchmark or strategic. Students placed in the benchmark group are at benchmark or just below. Usually, these students will receive just the regular lessons presented in a whole group setting and receive periodic assessments to make sure they are still on grade level. Students placed in the strategic group receive extra support in regular, structured pre-teaching settings. Evaluations are done regularly to monitor progress. Specific deficits can be assessed and addressed. Another component of the lessons is independent practice where the students apply the learned concepts (Cooper & Pikulski, 2000).

Phonemic awareness, the alphabetic principle and phonics are part of each lesson. Consistency, repetition and predictability aid the students to progress toward grade level reading. Modeling by the teacher is a key component towards helping students succeed at learning reading skills. Constant reminders by the teacher reinforce student comprehension and mastery of reading skills. The lessons are scripted with key concepts and objectives clearly outlined. Materials needed and additional resources are listed on

the lesson outline. Each lesson is built around a lesson theme and skills test. Each theme
and skills test covers three lessons or three weeks. Leveled reading passages are also part
of the lesson. As an addition to this program, the teacher is also using teacher made
lessons and activities. The teacher is relying on past experiences in teaching reading to
supplement the program. The teacher is also co-teaching with an ESOL (English for
Speakers of Other languages) teacher. At times, parent volunteers are also part of the
class.

CHAPTER 2

ESSENTIALS OF READING: A REVIEW OF THE

FUNDAMENTALS OF READING

In 1997, Congress charged the National Institute of Child Health and Human Development and the Secretary of Education to study the teaching of reading. A panel was convened to carry out this charge. The charge was to assess what research showed to be the key components of reading. The Reading First initiative, which is a part of the NCLB describes the following areas as being critical to early reading skills: phonemic awareness, phonics, fluency, vocabulary and comprehension (U.S. Department of Education, 2002). Along with that charge, the Panel was to look at various approaches to the teaching of reading to evaluate the effectiveness of each approach (National Institutes of Health, 2000). The Panel consisted of leading researchers in the field of reading and education as well as parents, reading teachers, administrators and college representatives. The Panel based its initial focus on the work of the National Research Council which found that alphabetics, fluency and comprehension were central to learning to read. The panel then took those areas and developed subgroups to study within each of those areas.

As the Panel looked at the available research, they decided to look at the key concepts of each group. Alphabetics was broken down into phonemic awareness and phonics instruction. Fluency looked at how well students were able to read by decoding words without having to sound out every word. Fluency also dealt with the speed and the ability of the students to put in correct intonation where necessary when reading out loud.

Fluency may be described as being able to read words accurately, rapidly and efficiently (National Institutes of Health, 2000). Comprehension was broken down into three parts: vocabulary instruction, text comprehension instruction and teacher preparation and comprehension strategies. Vocabulary instruction was concerned with how vocabulary was being taught and the methods used to teach the words. The Panel also looked at the role vocabulary played in total reading comprehension. Was being able to read the words the key to comprehension or was it just a part of the comprehension process? In other words, a child could be a very good word caller but could he comprehend what he had read? What role does the acquisition of vocabulary play in comprehension? Under text comprehension instruction, the Panel wanted to know the impact of learning comprehension strategies, both singularly and with multiple strategies. They also looked at how these strategies were implemented. The big question was, did one strategy produce larger gains over any other strategy? The last component of comprehension was teacher preparation in teaching comprehension strategies. The question that was studied was what type of preparation did teachers have in teaching various comprehension strategies and how well did they implement the strategies into their teaching (National Institutes of Health, 2000).

Ehri (2005) points out that the key to understanding how reading skills develop is to understand how beginning readers learn to recognize written words accurately and automatically. She puts forth the theory that readers have four different ways to learn reading which are decoding, analogizing, prediction and memory. Decoding deals with the use of phonemic and phonics skills. Analogizing is using known words and their word parts to read new words. Prediction is done by using context and letter clues to

figure out new words. Memory is just what it implies, sight words that have been memorized. There does not seem to be one best technique for decoding every unknown word. Therefore, several techniques must be taught to students so they can decide for themselves the most efficient and effective approach for them. As they learn the various techniques or skills, they are then translated into strategies that can be used by the students (Bukowiecki, 2007). Baumann (2000) found that teachers today are more motivated to find and use various strategies and techniques in order to meet the diverse needs of their students. He also found that teachers, as well as administrative staff, were more committed to learning new practices and instructional principles in order to have successful students.

Phonemic Awareness

According to the Panel (National Institute of Health, 2000; Kaminski & Good, 1996; Savage & Stuart, 2006; Vellutino, 1991), phonemic awareness and letter knowledge are the two best predictors of reading success in the first two years of school. Although the first two years of school are not specifically mentioned, research indicates that phonemic awareness and letter knowledge are key predictors of reading success in beginning readers (Allor, 2002; Carroll, 2004; Gray & McCutchen, 2006; Leppanen, Niemi, Aunola & Nurmi, 2004; McGuinness, McGuiness & Donohue, 1995; Molfese et al., 2006; Walton, 1995). Phonemic awareness is knowledge of the smallest units of sound produced in language. The English language consists of 41 phonemes. Phonemic awareness is the ability to recognize and manipulate those phonemes according to set rules, both regular and irregular. Reading is the ability to understand how the phonemes

work together to produce words that in turn have meaning. Phonemic awareness is the ability to see phonemes in different combinations and be able to decode new words. Phonemic awareness deals with sounds and blending phonemes together or segmenting words into its parts. It is thought that phonemic awareness aids in helping students to read because the English language is alphabetic (Ehri et al., 2001; Vellutino, 1991). Phonemic awareness is believed to be a prerequisite to learning letter name/sound correlations. Letter name/sound correlations are believed to be a prerequisite to learning words and learning to read. Due to these relationships, instruction in both phonemic awareness and phonics is crucial (Fielding-Barnsley, 1997; Vellutino, 1991). Allor (2002) states that phonological awareness is an oral language. She further states that an understanding between sounds and letters or words in print is essential. Without the ability to segment and blend and understand that the sounds being produced stand for something, students simply become word callers. They have the skills needed to read but lack an understanding of what it means. Due to this lack of understanding, students struggle in reading. Explicit instruction in phonemic awareness is necessary in order for students to learn phonemic relationships. This instruction seems to have the biggest impact in the early years of schooling, preferably in preschool or kindergarten (Allor, 2002; Ehri et al., 2001; Fielding-Barnsley, 1997; Leppanen, Niemi, Aunola & Nurmi, 2004; Molfese et al., 2006).

In their research, the Panel (National Institute of Health, 2000; Ehri et al., 2001) recognized that the studies done with teaching only one or two phonemic awareness skills produced a greater effect size which means greater gains in reading ability. It is thought that teaching more than one or two skills at the same time confuses students. Confusion

occurs because the students can not differentiate which skill to use. When one or two skills are taught, it is believed that the skills are mastered and the introduction of additional skills does not cause confusion (Ehri et al., 2001). In groups where phonemic awareness was also taught using letters (names of letters), greater effect sizes were achieved than those groups who taught without using letters. A combination of the two was the better producer of gaining reading skills. A side effect to this approach is that spelling also improved in the groups that were taught with a combination approach (Ehri et al., 2001). Writing skills were also improved by the combination approach to teaching phonemic awareness. It should be noted however, that teaching phonemic awareness in and of itself does not ensure that a child will learn to read or write. It is merely one component of the reading process (National Institute of Health, 2000). Phonemic awareness needs to be used in conjunction with a well rounded reading program to ensure that all the components that go into reading are addressed and not just phonemic awareness. Vellutino (1991) puts forth the concept that as students learn phonemes, they also need to be taught that words are separate sounds put together and that each sound is represented by a letter or combination of letters. They also need to be taught how the sounds are used in reading. Students need to be taught the link between letters and individual sounds. Letters become the visual link of the sounds. As they develop this relationship, it aids them in looking for these links in new words they are trying to read. Reading unfamiliar words is enhanced because familiar links are recognized in new words which make pronunciation easier. As recognition becomes easier, reading becomes easier (Carroll, 2004). If phonemic awareness is the key to reading, then a variety of phonemic tasks need to be part of the teaching curricula (Davidson & Jenkins, 2001).

Phonemic awareness must be taught explicitly in schools if students are to understand the value and importance of reading. Learning decoding skills provides the means to reading (Murray, 1998).

As mentioned earlier, phonemic awareness by itself does not produce readers. There are several ways to read words. One way is to use phonemic skills to break down the word into its phonemic segments or blends. Instruction in segmenting and blending letter sounds facilitates developing reading skills (Foorman, Francis, Novy & Liberman, 1991). Teaching techniques that emphasize segmenting, lead to more efficient acquisition of reading skills for beginning readers (Levy & Lysynchuk, 1997). Phonemic skills previously learned can be applied to any words that are unfamiliar in order to read. Another way to read is by using associations between known words and new words. Again, phonemic skills are applied here to recognize the correlation between the old and new word. Memorizing sight words is another way to read. This method is limited in its scope in that only memorized words can be read. Transitional skills from the memorized words to new words do not come into play. Reading is slowed down unless a large number of words have been memorized. New words simply have to be memorized in order to read. In learning new words, being able to use segmenting techniques proved to be superior over simply learning whole words. Generalization and retention also proved to be better when segmentation skills were applied versus whole word learning (Levy & Lysynchuk, 1997). There are limitations to all three processes for reading. That is why it is important to have a combination of teaching strategies for teaching reading. All three strategies can be used together to meet the various needs of students. All three strategies used in concert can promote a better reader. The rationale behind using these approaches

is the application of the processes. Students actually see the process in action which helps in the reading process (Ehri et al., 2001).

As expected, phonemic awareness can be taught individually, in small group or in a whole class setting. However, the Panel (National Institute of Health, 2000; Ehri et al., 2001) determined that teaching phonemic skills had a greater effect size when taught in a small group setting. As the Panel studied group sizes, they also looked at the amount of time that phonemic skills were taught. Longer teaching time periods did not always have greater or longer lasting effect sizes. In fact, shorter teaching time periods of phonemic skills produced larger effect sizes. A cautionary conclusion is that instruction in phonemic skills taught for a shorter (20-30 minutes) time period in small groups would produce the greatest effect sizes. The biggest and most long lasting effects of acquiring reading skills would be done in small groups for short amounts of time. This is cautionary because of individual student differences, enthusiasm and preparation of the teacher and the students' abilities and desires to learn to read. Another caution is that the researchers were measuring only certain aspects of reading ability that affected effect sizes. Teachers' own phonemic skills or training needs to be taken into account as well.

Phonics

The second part of alphabetics is phonics. Simply stated, phonics is learning letter sound associations along with spelling rules and the application of the rules of phonics so that known words can be read with ease and unfamiliar words can be decoded so they can also be read. Phonics, like phonemic awareness, is just a part of the reading process. It is a means to an end. Phonics alone can not guarantee that a person will learn to read or

become an efficient reader. A teaching strategy that incorporates phonemes with letter sounds has proven to produce better results with children acquiring reading skills that lead them to be better readers. Phonemic or letter sound training by itself did not produce as great a result as did the combination of the two components together (McGuinness, McGuinness & Donohue, 1995; Schneider et al., 1997). However, as stated earlier, it is one of the predictors of reading success along with phonemic awareness, especially in the early grades. The goal of phonics is to teach students the skills they need in order to be able to read and comprehend written language (Ehri, 2003; National Institute of Health, 2000). Phonics deals with the alphabetic code on which English is based. Having an understanding of the alphabetic code enables readers to read words both in and out of context. Phonics can be used to teach students how to do both.

Goswami (2005) puts forth the tenet that students need to learn some type of visual mapping system in order to understand language. Students learn these visual cues that relate to independent sounds in the language. In English, these visual mapping cues are letters that make up the alphabet. The comparison is made between the alphabet and numbers in a telephone book. Numbers can be randomly memorized but chances are all of the numbers can not be committed to memory. The most important numbers will be memorized and cues are used to help in the memorization process. Phonics would be the same way. Some of the phonics concepts will have to be memorized. But, phonics rules need to be learned so that words can be decoded and transferred to memory. Phonics gives students rules that make the use of letters and their corresponding sounds so that units can be put together to make words. It becomes the foundation for language learning which opens the door to learning in general.

In studying language acquisition across several languages, Goswami (2005) found that students whose languages followed regular rules of phonics achieved reading skills higher than those students whose languages had variations in phonics and phonemes. As an example, students who learned Spanish or Italian scored higher in both word and non-word reading skills than students who were learning English. The reason for this discrepancy is that both Spanish and Italian have consistent spelling systems whereas English does not. The English language learners scored lower even after two years of study. Goswami purports that this points to the fact that phonics skills are critical to learning to read. Students must learn the basics for the words that follow phonics rules and then must memorize the exceptions to the rule. Because the English language is not consistent in its phonics and spelling rules, it is a difficult language to learn.

Phonics teaches students how to decode new words, helps them to recognize old words, or take separate parts of words and blend them together to read new words. It also teaches students to take words that are already known to them and take the various parts of those words to create or decode new and unfamiliar words. Phonics instruction builds on the idea of phonemic awareness. The two parts working in concert, give students a better chance of learning to read with some degree of efficiency and fluency. Studies indicate that students receiving phonics instruction make bigger gains in reading ability than students who receive no phonics instruction.

Three approaches to teaching phonics that the Panel studied were synthetic, large unit and other programs that did not fit into the other categories. Synthetic phonics teaches students to convert letters into sounds and then blend the sounds to form words. Each letter is looked at and sounded out until the blend concept is fixed in the brain. Each

letter is then strung together to form the new word. Large unit phonics teaches students to look at segments or parts of words and then transfer that knowledge to new words. An example would be *book*. The student has learned the word *book* and sees a new word *look*. Instead of sounding out each phoneme, the student recognizes the *ook* sound and puts the new *l* sound with it to form the new word *look*. The third system is systematic in teaching phonics but does it in a way different from the two methods previously described. The data show that effect sizes for all three methods are greater than zero but are not statistically different from each other. The data show that different methods basically produce the same results. What is important however is that systematic approaches to teaching phonics promote greater growth in reading ability than non-systematic approaches (Ehri, 2003; National Institute of Health, 2000).

Phonics instruction seems to have the greatest impact on learning to read in kindergarten and first grades (Ehri, 2003). It is also thought that alphabetic knowledge helps with the memorizing of words that have been read, especially words that follow irregular patterns of spelling. Phonics may play a role in this process since it helps students learn the alphabetic code (Ehri, 2003; National Institute of Health, 2000). Coyne and Harn (2006) put forth the premise that alphabetic knowledge and phonemic awareness are critical for acquiring early reading foundational skills. They also found that isolating, blending and segmenting words at the individual level is crucial to later reading proficiency.

Another area that is affected positively by systematic teaching of phonics is spelling. As students are learning to decode words and learn phonics skills, spelling improves. Phonemic awareness also adds to improved spelling skills since it also deals

with word letter order. Morag Stuart (1999) studied a group of students (five year olds) who were learning English as a second language. The study showed that with a concentration on phonemic awareness and phonics, the students made tremendous gains in reading and spelling. This study supports evidence that both phonemic awareness and phonics are key components to reading but at the same time contribute to spelling ability. In a follow up to the initial data, Stuart found that effects of the phonemic awareness and phonics training had lasting effects over a two year period. Stuart's conclusion is that early concentrated alphabetic training has long term and lasting effects. Phonological awareness in concert with orthographic awareness provides the foundation for reading success in beginning readers (Foorman, Francis, Novy & Liberman, 1991).

In teaching phonics, it must be remembered that phonics is just one component of the reading process. Being able to decode words, blend sounds, use the appropriate corresponding letter sounds correctly are only the means whereby students are able to read and write the English language (Coyne & Harn, 2006; Ehri, 2003). Because English is very complex and varies greatly in how words are spelled and pronounced, systematic phonics instruction is important. If it is not taught, students more than likely will not be able to learn it on their own (Ehri, 2003).The end result of phonics instruction is that students can effectively use these skills to help them use print media.

Another point that needs to be made is that alphabetics is just part of a comprehensive reading program. Phonemic awareness and phonics are only components of the program. Instruction in both phonemic awareness and phonics is vital to reading success (Vellutino, 1991). Explicit instruction in phonemic awareness may help students understand the connection between phonemes, letters and words. This instruction may

help students avoid reading delays because of the phonemic awareness they have acquired. Without this awareness, students struggle in reading and spelling causing an achievement gap between themselves and those students who have acquired phonemic awareness skills (Murray, 1998). Students need practice at applying the newly acquired skills. This could include reading basal readers based on their individual levels of reading ability, group choral reading, peer tutoring, and individual reading.

Fluency

Fluency was the next area studied by the Panel. Fluency depends on how well the phonemic awareness and phonics skills are developed and practiced. If the student is taught the basic skills that will allow him to decode, segment, blend and correctly use alphabetic principles, fluency should be the next step in the process of becoming a fluent reader. Fluency depends on the ability to recognize words and to use them correctly. Just having the skills however, does not always lead to fluency. The learning of sight words can come into play at this point. Knowing sight words depends on the application of both phonemic awareness and phonics. Becoming skilled at reading sight words leads them to becoming entrenched in the readers memory which enhances fluency because little effort is put forth to decode the words. When sight words are read, they are being seen as a single unit and not a grouping of phonemes. As more sight words are learned, the grouping process expands which aids comprehension. If a student has to spend time decoding words, they become more interested in the decoding process rather than in reading for comprehension (Ehri, 2005; Hudson, Lane & Pullen, 2005)). If students have a sound foundation of phonemic awareness and phonics, learning sight words can

become easier. As sight words are learned, connections are made between the phonemes, letters and spelling. With repetition of the words in various contexts (automaticity), the words are moved to memory which aides in the reading fluency process as well as aiding comprehension because less effort is used in decoding and more effort can de devoted to comprehension (Ehri, 2005; Hudson, Lane & Pullen, 2005). Knowing sight words usually means that the meaning of the words is also known which helps with fluency and comprehension. Skilled readers are able to read these words quickly and accurately because they are part of the readers known vocabulary (Ehri, 2003).

Fluency is the ability to read different texts at a speed in which the reader no longer has to decode every word that is presented in the text (Hudson, Lane & Pullen 2005; National Institute of Health, 2000). Fluency indicates being able to use decoding skills with almost no thought given to the process. Decoding becomes an automatic process. Once the process is automatic, the mind is then free to concentrate on comprehending what is being read rather than expending energy on decoding words. Fluency is a step above word recognition. Fluency is being able to read words accurately, rapidly and efficiently (Hudson, Lane & Pullen, 2005; National Institute of Health, 2000). Fluency however, does not automatically lead to comprehension. A person can be very good at reading or word calling but never fully comprehend what they are reading. The comprehension component of reading will be discussed later. Fluency is built by practice (National Institute of Health, 2000).

Reading activities should not be reading word lists in isolation. Rather, activities should include word lists but also use the words in context to help cement the word to memory so that when the word is seen again, it is recognized immediately and does not

need to be decoded which enhances fluency. Guided oral reading practice is one avenue that enhances fluency. Students are able to hear the inflections in reading, hear the correct words spoken and be corrected when mistakes are made. A mixture of reading activities is best so that the various learning styles of students are met. Kaminski and Good (1996) advocate that a broad range of experiences with reading enhances learned skills. As students are exposed to a variety of teaching methods along with various print materials, reading is improved.

In a self report study, teachers indicated that literature should be a part of the overall reading program. Of the respondents, 93% indicated that they spent considerable to moderate amounts of time reading to their students while 83% spent considerable to moderate amounts of time for independent reading practice by students. 81% of those responding stated that they spent considerable to moderate amounts of time in oral or written response time to literature readings. Approximately the same response from teachers said they also spent the same amount of time in some type of writing activity. From these surveys, it was surmised that students are receiving lots of exposure to literature and literature based activities that compliment the phonics, phonemic awareness and vocabulary building skills. These activities give the students time to practice the reading and writing skills they have learned (Baumann et al., 2000).

Accuracy in word calling also improves during guided reading activities. Oral reading activities also improve fluency whether it is done in a small group, individually or as a class. According to the studies (National Institute of Health, 2000), the type of guided oral repeating reading activities did not matter. It was shown that reading skills improved about the same despite any differences between reading programs that

incorporated these types of activities. Reading in and of itself seems to help students learn and use the reading skills they have been taught. However, a question is raised; does reading more make you a better reader or do you read more because you are a better reader? This question needs further research. This reciprocal relationship was also noted between phonological awareness and reading levels (Schneider et al., 1997). As reading levels improved, phonological skills improved. As phonological skills improved, reading levels improved. Once again, a question is raised that needs further study: do phonological skills increase reading levels or do reading levels increase phonological skills? Bukowiecki (2007) stresses the same point that fluency improves as teachers implement frequent fluency practice as a part of the reading program. Several fluency techniques were studied and all had about the same impact on reading fluency. The conclusion is that it does not really matter what technique is used, as long as it is used frequently, fluency will improve. In their study, Levy and Lysynchuk (1997) came to the same basic conclusion. They found that teachers were complaining because skills learned one day were not remembered or generalized to other areas. They found that if a variety of techniques were used and used frequently, especially in making associations between orthographically similar words, generalizations occurred more often when faced with new words. They suggest that teachers use more teaching strategies to make their teaching more complete.

Comprehension

Comprehension was the last area studied by the Panel. Comprehension is the end result of skills learned. If students are able to read words but not comprehend what is

written, it does them no good. Written skills are also affected if comprehension is weak. Comprehension leads to life long learning. Comprehension involves three components: integrating complex skills (vocabulary, word use, etc.), active interactive strategic processes that lead to comprehension and teachers teaching a variety of comprehension skills to students so they have an arsenal at their disposal to use in understanding language (National Institute of Health, 2000).

Vocabulary words and understanding are critical to reading and language acquisition. If students know words orally, they can begin to transfer oral words to written words with an understanding of what the word means. Vocabulary is a key element in reading comprehension. Vocabulary can be taught in a variety of ways. More exposure to vocabulary in a variety of settings helps the reader incorporate the words into their own vocabulary and memory (Ehri, 2003). If the word is in the child's vocabulary, reading and comprehension are greatly enhanced.

Interactive strategies are cognitive strategies that students learn so that when they encounter problems in reading comprehension they will be able to use reasoning to overcome the difficulties. Teacher preparation comes into play with teaching comprehension strategies. Teachers should be teaching a variety of strategies to help students overcome difficulties in reading comprehension. These strategies are specific in nature and differ from the cognitive strategies. Examples of the several strategies that can be employed are summarization, question and answer, use of graphic organizers, cooperative teams for discussion or self questioning on the text. As a variety of methods are used, students learn different strategies they can use when needed.

Vocabulary, although important to reading comprehension, has not been shown to have a direct link to reading comprehension. There is a causal link between the two but there has been no hard evidence to show that a large vocabulary makes better readers. The idea behind vocabulary is to recognize the words immediately so that larger groupings of words can be put together so that the meaning is clearer (National Institute of Health, 2000). Repetition of words, connecting words to various contexts, active tasks using the words all enhances the ability to remember the word and its meaning.

Students that learn cognitive strategies to reading comprehension make significant gains in reading comprehension. However, they must be explicitly taught these strategies by their teachers. The teachers must model and show how to use the strategies in order to demonstrate to the students the effectiveness of each strategy. Again, several methods should be involved so that students can use what meets their needs and talents. Comprehension has been shown to improve when students have been taught a variety of cognitive strategies to use when reading various texts (National Institute of Health, 2000). Teacher preparation in the teaching of strategies is very important. If teachers only know one or two strategies or are uncomfortable in teaching strategies, students suffer. Comprehension by students will not be as great as it could be because the students are limited as to what they can do. If the teachers themselves do not know the strategies, they can not teach them. The Panel determined that teachers need to have specific training on various comprehension strategies in order to feel comfortable and capable of teaching the strategies to students (National Institute of Health, 2000).

CHAPTER 3

STUDY FORMAT

The purpose of this study is to find out if one program produces greater gains in reading skills than the other programs. The programs being evaluated are the Scott Foresman Reading program, *Road to the Code*, *Fundations* and a teacher made program used in conjunction with an ESOL reading program. All of the programs are researched based. Most of the programs focus on teaching some type of phonics. The difference between the programs is the methodology used to teach the phonics skills. Most of the programs have evaluations as part of the program to see if progress is being made by the students. Re-teaching is also part of the program as well as tailoring the lessons according to the needs of the students. Some type of scaffolding is also built into the programs so that as students master reading skills, they then build on those skills. The two programs, Scott Foresman and *Road to the Code*, are very similar in their approach to teaching basic reading skills. They both emphasize phonics and are similar in how phonics is taught. The Scott Foresman program suggests that a pre-test be given before interventions begin. The program suggests an evaluation like DIBELS and even mentions using DIBELS as the evaluation instrument. Although *Road to the Code* does not call for a pre-test, the research base used for designing the program did incorporate a pre-test. *Fundations* has its own evaluation system. The Extra Support Handbook relies on teacher observation as the evaluation instrument.

Research Questions

There are two main questions that are addressed with this study. Those two questions are:

1. Does a ready made program such as the Scott Foresman Reading program, *Road to the Code*, or *Fundations* produce greater gains in reading achievement than a teacher made program?

2. Does one ready made program produce greater gains than another program if all the programs are aligned with Reading First?

Hypotheses

There is one main hypothesis that is being tested which is:

Ho: There will be no statistically significant differences among students taught with one of the four reading programs on reading scores.

Study Design

The study will consist of a pre/post test design. Data were collected within the first two weeks of school on all kindergarten students. These data will be used as a baseline for comparison. The initial data is used to prescribe at what level intervention is needed. Interventions range from no intervention other than what is done in the regular classroom in a large group to various small group pullouts. Interventions could also be done once a month, twice a month, weekly or daily. These interventions are based on whether the student is classified as benchmark, strategic or intensive.

Assessments are done periodically with each program to determine if student needs have changed. As students' needs change, interventions change. Assessments are done once again in the middle of the school year. Evaluations are made based on the results and interventions introduced or modified as needed. New assessments are also done at this time. The thought process is that students have learned enough basic skills so that they can be evaluated to see if reading skills are being acquired. Within the last three weeks of school, kindergarten students are tested again. The hope is that all students would have made benchmark by the end of the year. Program scores will be compared against each other. Schools using the same program will be combined to form a comparison between the programs. The scores will be combined and compared against the other schools' scores.

Four programs will be evaluated in this study. There are two schools that are using the Scott Foresman program and two schools that are using the *Road to the Code* program. One school is using two different programs, *Fundations* and ESL teacher made materials. Three types of comparisons will be made. The first comparison will be made using data from the first and middle assessments. This comparison will look at initial sound acquisition. Initial sounds are only assessed at the beginning and middle assessments because it is believed that all initial letter sounds will be learned by the end of the kindergarten year and an end of year assessment is not necessary. In this assessment, students are shown a series of four pictures and told what the pictures are. Questions are then asked and the student either points to the picture or says the picture that represents the sound made by the test administrator. Students are timed according to how fast they respond. A formula is then used to determine how the responses are scored.

The second comparison will be a beginning of year and an end of year assessment. This assessment looks at letter naming. Students are shown a sheet containing a list of letters and they have to name each letter. They are timed for one minute. The correct number of letter names is counted and that becomes the score for that assessment. The last comparison will be a middle of the year to the end of the year. This comparison will involve phonemic segmentation and nonsense word fluency. Both are timed for one minute. To assess phonemic segmentation, test administrators say a word and the student has to produce all of the phonemes in that word. The number of correct segments is the score received on the test. With nonsense word fluency, students are shown a page of nonsense words. The student then has to produce the phonemes in the word or read the word as a whole. The number of correct phonemes or words is the score received on the test.

Limitations of the Study

A limitation to this design is the prior knowledge or lack of knowledge of reading skills that the students had before beginning school. For example, there are a few pre-schools who prepare the students for kindergarten by already teaching them many of the skills needed for reading success. Some of the students that come from these pre-schools come into kindergarten already reading. Other students enroll in kindergarten having little or no exposure to reading or books. Another limitation to this design is that the students may perform better at the end of the year due to the exposure of the testing format. They will have had several assessments before the year end data is collected and are familiar with the format. Another limitation is that most of the students have never been tested

before and are not familiar with testing procedures. Likewise, the baseline data is taken in the first two weeks of school and the students are not acclimated to the school setting and all that that entails. When the data is taken, the students are tested by other individuals with whom they are not familiar. Failure to respond lowers scores. Failure to respond with people they are not familiar with is a limitation. The students have not had time to acclimate to their school or teachers or what happens in schools. By the time the year end data is collected, the students are familiar with the test givers and respond more openly. Also, they have had practice at doing the assessment format. Familiarity with the tested information also skews the results (Ary, 1990).

Failure to have a control group is another limitation to the test design being used. Maturity that occurs in the students over the course of a year is another variable that can not be controlled. Developmentally, the students are at different levels of understanding and ability to learn. Reaching new development levels is another variable that can not be controlled or accounted for in the effects of the interventions. Implementation of the various interventions is also a variable that can not be controlled. Teachers varied in their implementation of the different programs. Some followed the programs precisely while others started off following the programs closely but then backed off in their intensity. Level of enthusiasm and confidence in the programs and their outcomes by the teachers can not be controlled which is another problem with the design. Another limitation to this study is that all students who are learning English as a second language are housed in one school. This may adversely affect the scores from that school.

The students studied come from a rural county. In 1999, 11% of the population lived below the poverty line which comprised 9% of families living in the county. Per

capita income of the county is $17,000. The county is ranked 130 out of 180 for property

wealth for school funding purposes. Due to these statistics, all of the elementary schools

are Title I schools. Of the total county school population, 38% of students are on the Free

and Reduced lunch program. The retention rate county wide is at 3.18%. According to

statistics from 2002, 29% of the adult population did not graduate from high school. 40%

of the population graduated high school while 11% percent earned a Batchelor's degree

or higher with 19% of the population earning some type of college credit. The

community is predominately Caucasian (89%) with 9% African American and 2%

Hispanic or other groups. Each of the schools roughly follows this same pattern with

some variations. One school however, does house all of the students who need English as

a Second Language.

CHAPTER 4

DATA

An analysis was done evaluating the four reading programs (*Fundations, Road to the Code*, Scott Foresman, and teacher made materials) in five different areas. The five areas of investigation were: initial sound fluency, letter naming, phoneme segmentation, nonsense words and word use. The following tables represent the findings of the evaluation. Comparisons were made using a univariate analysis of variance. The number of subjects varied from assessment to assessment depending on attrition of students or absence the day of the assessment with the assessment never being made up. Results may also be skewed since one school did not assess all five areas being studied. Tables 4.1-4.2 show the results of the analysis of initial sound fluency. This assessment is done at the beginning and middle of the year.

Table 4.1
Between Subjects Effects: Initial Sounds

Source	SS	df	F	p
Corrected Model	2950.05[a]	4	5.02	.001
Intercept	51146.13	1	348.12	.000
Initial 1	2708.59	1	18.43	.000
Program	221.58	3	.50	.681
Error	53478.58	364	146.91	
Total	333481.00	369		
Corrected Total	56428.64	368		

a. R Squared = .052 (Adjusted R Squared = .042)

Table 4.2
Means: Initial Sounds

Program	Mean	SD	Adj. Mean	SE	N
Fundations	23.10	9.93	25.84[a]	3.88	10
Road to Code	27.81	12.02	28.50[a]	1.12	118
Scott Foresman	27.66	12.03	27.01	.96	161
Teacher Made	26.82	13.87	26.75	1.35	80
Total	27.40	12.38			369

a. Covariates appearing in the model are evaluated at the following values:
   Initial 1 = 9.03

Table 4.1 shows the effects the programs had on each other. As indicated by the *p* values, no significant differences were evident between the four programs on initial sounds. The adjusted means, as shown in Table 2, were applied to take in to account any pre-existing differences that were present in the four groups. Adjusting for the means shows the greater effect the treatment may have had. As stated earlier, no significant differences were noted.

The results of the letter naming analysis are shown in tables 4.3 – 4.11. This assessment was done three different times throughout the year. Because several comparisons were being made between groups, pairwise comparisons as well as the Bonferroni method were used to show which group or groups showed a significant difference over other programs. The means were again adjusted to account for pre-existing conditions.

Table 4.3
Between Subjects Effects: Letter Naming: Letter 2

Source	SS	df	F	p
Corrected Model	34386.32[a]	4	62.00	.00
Intercept	82872.99	1	597.74	.00
Letter 1	33358.59	1	240.60	.00
Program	1221.46	3	2.93	.03
Error	50465.76	364		
Total	584184.00	369		
Corrected Total	84852.08	368		

a. R Squared = .405 (Adjusted R Squared = .399)

Table 4.4
Means: Letter Naming: Letter 2

Program	Mean	SD	Adj. Mean	SE	N
Fundations	38.00	11.83	44.83[a]	3.74	10
Rode to Code	37.91	16.96	36.83[a]	1.08	118
Scott Foresman	37.45	15.05	37.49[a]	.92	161
Teacher Made	33.64	12.64	34.29[a]	1.31	80
Total	36.79	15.18			369

a. Covariates appearing in the model are evaluated at the following values:
Letter 1=12.17

Table 4.5
Pairwise Comparison: Letter Naming: Letter 2[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	8.00		
Scott Foresman	7.33	-.66	
Teacher Made	10.54*	2.54	3.20

* Mean difference is significant at the .05 level
a. Adjustment for multiple comparisons: Bonferroni

The results indicate that there is a significant difference in some areas between some of the programs. When comparing the first assessment to the second assessment, a significant difference was found between the *Fundations* program and the teacher made program with *Fundations* being the better program. No other significance was found between any of the other programs.

Table 4.6
Between Subjects Effects: Letter 3

Source	SS	df	F	p
Corrected Model	29754.98[a]	4	32.26	.00
Intercept	153966.62	1	667.75	.00
Letter 1	26045.19	1	112.95	.00
Program	2412.41	3	3.48	.01
Error	81623.67	354		
Total	936404.00	359		
Corrected Total	111378.65	358		

a. R Squared = .267 (Adjusted R Squared = .259)

Table 4.7
Means Letter Naming: Letter 3

Program	Mean	SD	Adj. Mean	SE	N
Fundations	43.90	14.29	49.98[a]	4.83	10
Rode to Code	51.42	18.31	50.36[a]	1.40	117
Scott Foresman	48.13	18.32	48.24[a]	1.20	158
Teacher Made	42.58	13.95	43.18[a]	1.76	74
Total	47.94	17.63			359

a. Covariates appearing in the model are evaluated at the following values:
     Letter 1=12.11

Table 4.8
Pairwise Comparison Letter Naming: Letter 3[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	-.38		
Scott Foresman	1.74	2.12	
Teacher Made	6.80	7.18*	5.06

*   Mean difference is significant at the .05 level
a.   Adjustment for multiple comparisons: Bonferroni

In comparing the first assessment with the third assessment, a significant

difference was found between *Road to the Code* and the teacher made program with *Road*

to the Code being the better program. This is a change from the previous assessment. In

the previous assessment, *Fundations* proved significant over the teacher made program.

Just like the previous assessment, no other significance was found between any of the

other programs.

Table 4.9
Between Subjects Effects Letter Naming: Letter 3

Source	SS	df	F	p
Corrected Model	57652.63[a]	4	93.43	.00
Intercept	14065.70	1	91.17	.00
Letter 2	53814.55	1	348.83	.00
Program	1501.42	3	3.24	.02
Error	57387.60	372		
Total	965884.00	377		
Corrected Total	115040.23	376		

    a. R Squared = .501 (Adjusted R Squared = .496)

Table 4.10
Means Letter Naming: Letter 3

Program	Mean	SD	Adj. Means	SE	N
Fundations	43.90	14.27	42.62[a]	3.98	10
Road to Code	51.22	18.16	50.03[a]	1.13	120
Scott Foresman	47.47	18.15	47.16[a]	.95	168
Teacher made	42.41	13.88	45.02[a]	1.40	79
Total	47.51	17.49			377

    a. Covariates appearing in the model are evaluated at the following values:
       Letter 2= 36.36

Table 4.11
Pairwise Comparison Letter Naming: Letter 3[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	-7.40		
Scott Foresman	-4.53	2.87	
Teacher Made	-2.39	5.01*	2.13

    * Mean difference is significant at the .05 level
    a. Adjustments for multiple comparisons: Bonferroni

In the last analysis, comparing assessments two and three, *Road to the Code*

performed better than the teacher made program. No other differences were noted

between the other programs. According to these analyses, Scott Foresman and the teacher

made programs seem to be equally effective in all areas of teaching letter names.
Fundations showed a difference in the first analysis over the teacher made program but in
later analyses showed no difference. No significant differences were noted between
Fundations and the Scott Foresman programs. *Road to the Code* however, showed a
significant difference over the teacher made program on two analyses while showing no
difference with the other programs. Since *Road to the Code* showed a significant
difference over the teacher made program on two out of the three analyses, *Road to the
Code* may be better than the teacher made program for teaching letter names. *Road to the
Code* however, can not be considered the best program for teaching letter names since it
did not show any difference over the other two programs.

Phoneme segmentation results are shown in tables 4.12 – 4.14. This assessment is
also done two times during the year. It is usually done in the middle and year end
assessments.

Table 4.12
Between Subjects Effects: Phoneme Segmentation

Source	SS	df	F	*p*
Corrected Model	18187.26[a]	4	38.84	.00
Intercept	92428.68	1	789.57	.00
Phoneme 1	9666.68	1	82.57	.00
Program	4900.14	3	13.95	.00
Error	43547.10	372		
Total	973686.00	377		
Corrected Total	61734.37	376		

a. R Squared = .295 (Adjusted R Squared = .287)

Table 4.13
Means: Phoneme Segmentation

Program	Mean	SD	Adj. Means	SE	N
Fundations	43.80	10.45	45.45[a]	3.42	10
Road to Code	50.43	11.22	50.92[a]	.98	120
Scott Foresman	52.70	13.46	51.40[a]	.84	168
Teacher Made	40.49	9.43	42.28[a]	1.23	79
Total	49.18	12.81			377

a. Covariates appearing in the model are evaluated at the following values: Phoneme 1= 32.68

Table 4.14
Pairwise Comparison: Phoneme Segmentation[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	-5.46		
Scott Foresman	-5.95	-.48	
Teacher Made	3.17	8.64*	9.12*

* Mean difference is significant at the .05 level
a. Adjustment for multiple comparisons: Bonferroni

As can be seen from these data, both *Road to the Code* and Scott Foresman show significant differences from the teacher made program. There does not seem to be any significant differences between the *Fundations* program and the teacher made program.

The next analysis was an analysis of nonsense words. Again, this assessment is usually done in the middle and end of the year. Results from this analysis are listed in tables 4.15- 4.17.

Table 4.15
Between Subjects Effects: Nonsense Words

Source	SS	df	F	p
Corrected Model	66767.39	4	67.64	.00
Intercept	28870.98	1	117.00	.00
Nonsense 1	60916.33	1	246.88	.00
Program	2221.38	3	3.00	.03
Error	91788.34	372		
Total	767208.00	377		
Corrected Total	158555.73	376		

a. R Squared = .421 (Adjusted R Squared = .415)

Table 4.16
Means: Nonsense Words

Program	Mean	SD	Adj. Means	SE	N
Fundations	35.20	15.15	39.73[a]	4.97	10
Road to Code	45.11	23.34	43.69[a]	1.43	120
Scott Foresman	39.68	19.98	38.21[a]	1.21	168
Teacher Made	34.39	15.64	39.08[a]	1.79	79
Total	40.18	20.53			377

a. Covariates appearing in the model are evaluated at the following values:
   Nonsense1 = 25.88

Table 4.17
Pairwise Comparison: Nonsense Words[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	-3.95		
Scott Foresman	1.51	5.47*	
Teacher Made	.65	4.60	-.86

* Mean difference is significant at the .05 level
a. Adjustment for multiple comparisons: Bonferroni

From these results, *Road to the Code* seems to have a significant difference over the Scott Foresman program. No significant differences seem to exist between any of the other programs. This is unusual in that no differences have shown in previous analyses. Also, both programs are similar in what they teach, how they teach and the structure in which they teach the material.

The last analysis was word use. This assessment is usually done three times a year. However, the schools that use *Road to the Code* did not use all three assessments. One school did not even use this assessment at all. Due to one assessment not being done, the middle and end of year data were used in this study. The results therefore may be skewed somewhat due to lower numbers for the *Road to the Code* program. Tables 4.18-4.20 show the results for the analysis.

Table 4.18
Between Subjects Effects: Word Use

Source	SS	df	F	p
Corrected Model	26233.26[a]	4	30.66	.00
Intercept	54291.91	1	253.84	.00
Word 2	16646.15	1	77.82	.00
Program	3268.75	3	5.09	.00
Error	65875.37	308		
Total	554322.00	313		
Corrected Total	92108.63	312		

a. R Squared = .285 (Adjusted R Squared = .276)

Table 4.19
Means: Word Use

Program	Mean	SD	Adj. Mean	SE	N
Fundations	32.80	9.05	33.62[a]	4.62	10
Road to Code	30.21	17.05	33.77[a]	1.91	61
Scott Foresman	43.52	16.73	41.55[a]	1.16	163
Teacher Made	34.99	15.56	36.17[a]	1.65	79
Total	38.43	17.18			313

a. Covariates appearing in the model are evaluated at the following values:
   Word 2 = 23.39

Table 4.20
Pairwise Comparison: Word Use[a]

Program	Fundations Mean Difference	Road to Code Mean Difference	Scott Foresman Mean Difference
Road to Code	-.15		
Scott Foresman	-7.93	-7.78*	
Teacher Made	-2.55	-2.40	5.38

* Mean difference is significant at the .05 level
a. Adjustment for multiple comparisons: Bonferroni

The results from this analysis indicate that the only difference between any of the programs was between the *Road to the Code* and the Scott Foresman programs with Scott Foresman showing a significant difference over *Road to the Code*. This again is unusual in that Scott Foresman and *Road to the Code* are so similar in teaching methodology. In this study, these two programs have only shown differences between themselves twice. The other time a difference was noted was in nonsense words where *Road to the Code* showed a difference over Scott Foresman. In this analysis, Scott Foresman shows a difference over *Road to the* Code. It must be remembered however, that one school did not use this assessment at all and may therefore skew the results. The schools using the Scott Foresman program were the only schools that did all three assessments as prescribed by the assessment protocol. This may account for the difference over *Road to the Code*.

CHAPTER 5

CONCLUSION

The purpose of this study was to evaluate different reading programs being used in one school system. Four programs, Scott Foresman, *Road to the Code, Fundations* and a teacher made program were used in this study. All four programs taught components of the key areas as set forth by the Reading Panel although they emphasized different components and taught them in different sequences. Scott Foresman, *Road to the Code* and *Fundations* are ready made programs that come with most of the materials included in the program. No special training is needed to implement any of the programs. The fourth program is a program with materials that are teacher made and rely heavily on the teacher's teaching experience of reading of over 25 years. Materials from an ESOL teacher's manual and supplemental manual are also used.

From the analyses that were done, no one program significantly performed better than any other program on all assessments. On each area that was studied, except for initial sounds, there was one program that did show a significant difference over another program. However, it was not the same program every time. The teacher made program did seem to be the weakest of the four programs since on several assessments, there were significant differences between the teacher and ready made programs with the ready made programs performing better. *Rode to the Code* was the only program that consistently showed a difference with the teacher made program. However, the only conclusion that can be drawn is that *Road to the Code* had more significant differences than did the other programs. It does not mean that *Road to the Code* is a better program

on reading outcomes. That can not be determined from this analysis. It simply means that statistically, *Road to the Code*, showed significant differences over the teacher made program. Follow up studies need to be conducted to see if reading gains are long lasting.

The hypothesis being tested was: *Ho:* There will be no statistically significant differences among students taught with one of the four reading programs on reading scores. Even though on individual analysis, there were some significant differences between programs, overall, there was no one program that consistently showed a significant difference over all the other programs. On several analyses, other programs did show a significant difference against the teacher made program. However, not all programs showed the same difference on the same analysis. Overall, all four of the programs seemed to be equal although there may be individual strengths in each program. However, as mentioned earlier, the teacher made program seemed to be the weakest. Therefore, the hypothesis being tested is proven to be true, there will be no statistically significant differences among students taught with one of the four reading programs on reading scores. Differences may occur due to how true the programs are implemented, teaching ability of the teacher, maturity and preparation of the students before they come to school, parental help and the natural developmental process of students throughout the year. In spite of these differences, there does not seem to be any major significant differences between the four programs and their outcomes.

There were two questions that were also explored in this study. Both questions dealt with gains in reading and compared ready made programs against each other and ready made programs against a teacher made program. Although a definitive answer can not be deduced from this one study, there does seem to be some evidence that ready made

reading programs produce greater gains in reading if significant differences can be interpreted as gains in reading. The ready made reading programs, compared against each other, only produced a significant difference on two analyses. What this would indicate is there were no differences in the programs overall. Outcomes from the programs should also be comparable, but this can not be confirmed from this study. It is a question that still needs further inquiry. This study was not longitudinal but analyzed data from one year only. Follow up studies need to be done to determine if the data from this study are consistent over time. Reading gains also need to be addressed as they were not a part of this study.

The assessment being used to compare the four programs is called DIBELS. It is an assessment that is given three times a year that assesses various components of reading readiness. DIBELS is a research based assessment with benchmarks for reading readiness skills. There are benchmarks for each assessment period and grade level. If students reach the benchmarks set by the DIBELS assessment, they should have the necessary skills to read. The purpose of DIBELS is to identify areas of weakness in reading skills so that interventions can be put in place for students needing reading remediation. From the DIBELS assessments, classroom instruction should be differentiated so students receive the necessary help in order to read on grade level. In kindergarten, DIBELS assesses initial sound fluency, letter naming fluency, phoneme segmentation, nonsense words and word use fluency. Letter naming and word use fluency are assessed three times a year and the others are assessed two times a year. All students in kindergarten are assessed using the DIBELS assessment.

On the analysis of initial sounds, all four programs seemed to have the same results. This would indicate that in spite of the differences in the programs, the four programs worked equally well in teaching initial sounds to students. A conclusion could be drawn that as long as initial sounds are taught, despite the method, students are able to learn initial sounds and no difference is noted in achievement. Since phonemic awareness and letter knowledge are predictors of reading success (National Institute of Health, 2000; Kaminski & Good, 1996; Savage & Stuart, 2006; Vellutino, 1991), it should come as no surprise that there were no differences between the programs since all of the programs had a strong component in this area. Phonemic awareness and letter knowledge are the basics of learning to read. A thorough knowledge of initial sounds is essential if reading is to be acquired. All four programs begin with this area of emphasis and then build on learned skills. If students can master these areas, chances are they will become readers.

Letter naming was assessed three times during the year. The teacher made program showed that there were some differences in outcomes versus the other programs. In comparing the first assessment against the second assessment, *Fundations* showed a significant difference over the teacher made program. In this assessment, there did not appear to be any difference between the other programs other than *Fundations* over the teacher made program. The conclusion that can be made from comparing the first and second assessments is that all the programs are equally effective in teaching letter names but that *Fundations* does produce a difference over the teacher made program. In comparing the first assessment against the third assessment and the second assessment against the third assessment, *Road to the Code* showed a significant difference over the

teacher made program. In these comparisons, the other programs showed equal results against each other. The overall conclusion that can be drawn is that the teacher made program may not be the best program to use to teach letter names. The other three programs showed no difference between themselves so they may be equally effective in teaching letter names to students. This falls in line with the research presented by Allor (2000) and Murray (1998) that states that explicit instruction needs to be used in teaching phonemic awareness. The explicit instruction provides opportunities for students to learn phonemic relationships. This in turn leads to better readers. All of the programs except the teacher made program, provide explicit instruction in the area of phonics and phonemic awareness. Because of the explicit instruction, no differences may be noted between the programs. *Road to the Code* may be stronger in teaching phonics and phonemic awareness than the other ready made programs. This may account for the difference it showed over the teacher made program. Ehri (2003) also points out that English is very complex and words do not always follow the same pattern of spelling or pronunciation. Without systematic instruction in the areas of phonics and phonemic awareness, students may not be able to learn the concepts.

The next analysis was phoneme segmentation. This analysis was also done twice a year. Just like the previous two analyses, the teacher made program once again had other programs that showed a significant difference. In this analysis, both programs, *Road to the Code* and Scott Foresman, showed significant differences over the teacher made program. No apparent difference was present between *Fundations* and the teacher made program. This indicates that the teacher made program once again was the weakest program, even though no difference was noted between the teacher made program and

Fundations. A conclusion could be that *Road to the Code* and Scott Foresman both have strong segmentation components. The difference might also be attributed to the explicitness of instruction.

With the next comparison, a new difference was noted. A significant difference was noted between the *Road to the Code* and the Scott Foresman programs in comparing nonsense words. This is interesting since no differences have been noted before between the two programs. Since the two programs have had no differences before, it could be assumed that they would be the same in this analysis since both programs are so similar in how they teach reading. The methodologies are very similar in both programs also. However, since there is a difference, it might be concluded that the method used by *Road to the Code* is superior to Scott Foresman in teaching nonsense words. One explanation for this might be that in their research, Good and Kaminski (2003) stated that if additional intervention was needed with the Scott Foresman program, *Road to the Code* was an intervention that would be good to use. However, the other two programs, *Fundations* and the teacher made program proved to be equal to *Road to the Code.* Does this mean that *Road to the Code* is the better program? What might be concluded is that nonsense words are not emphasized in the Scott Foresman program and that the emphasis is on other skills that Scott Foresman feels are more important. Since *Road to the Code* showed no differences with the other programs, perhaps they also emphasize nonsense words as well as *Road to the Code*.

The last comparison was word use. The results of this analysis may be skewed because one school did not do this assessment at all. Therefore, true results may not be represented in the data. Unlike the last analysis, Scott Foresman showed a significant

difference over *Road to the Code* but not over *Fundations* or the teacher made program. This is an unusual result since both programs are closely aligned in how they teach the various areas of reading skills. It is also unusual that Scott Foresman showed a difference over *Road to the Code* since on one other analysis, *Road to the Code* showed a difference over the Scott Foresman program. It would stand to reason that if it showed a difference on one analysis it would also show a difference on another analysis.

One possible conclusion, although not definitive, is that the *Road to the Code* program seemed to be a stronger program over the teacher made program since it consistently showed significant differences over the teacher made program. It also showed some difference over the other programs, but not in every analysis. Is *Road to the Code* the better program? Further research needs to be conducted in this area before a definitive answer can be made since the other two ready made programs seemed to perform as well as *Road to the Code* in the areas examined.

The teacher made program however, seemed to perform lower in each area assessed. One of the ready made programs usually showed a significant difference over the teacher made program. As explained earlier, this difference could be due to the explicit nature of teaching the materials. The three ready made programs are scripted and very explicit in their instructions whereas the teacher made program is less explicit. Spiral learning may not be as strong in the teacher made program. The teacher relied solely on judgment as to when the students moved to the next concept in the program. In the ready made programs, spiraling as well as assessments are part of the program. Teachers have data to use to determine if students are ready to move to the next concept. The ready made programs are researched based. Therefore, lesson presentations are

presented in a logical order building on previously learned concepts. Teachers do not have to determine the lesson progression as they do in the teacher made program. It merits further investigation to see if the teacher made program truly is the weakest of the four programs. The teacher made program may need to be looked at to see if it is following any prescribed order of lessons or if the lessons are taught randomly. The program may need to be looked at to see if changes need to be implemented so that it falls in line with the other programs. Since systematic approaches to teaching reading show greater predictability for reading success, it may be that the teacher made program needs to be more systematic in its approach to teaching reading.

The results are not definitive in this study. More research needs to be done over a longer period of time in order to get more data on these four programs. A control group is needed to get more accurate data so that a truer comparison of the programs can be made. Follow up studies need to be done to test the effectiveness of the programs over time to see if students truly read on grade level or not. Part of the follow up studies would be retention of material taught. Greater control also needs to be done in administering the assessment since all of the schools did not follow the protocol as prescribed. Another area to be examined is how close the teachers follow the programs they use. If the programs are not used as designed, outcomes may be affected. Two other areas to study are the teacher made and *Fundations* programs. Would the same results occur if another teacher used their own materials? Would the same results occur if a reading specialist used their own materials? Since *Fundations* was used with such a small group, would the same results be achieved if the program was used with a larger group of students? As can be

noted, many questions are left unanswered by this study. To truly determine if one program is more effective than another, further research is needed.

With the passage of recent educational legislation, especially No Child Left Behind (No Child Left Behind, 20 U.S.C§ 6301, 2001), schools have been forced to re-examine how they teach reading. According to the law, all students are to be on grade level in reading by the year 2014. Schools are now being held more accountable for what they are doing. One of the measures being used is Adequately Yearly Progress which means that schools have to be meeting state standards for progress in reading, attendance, etc. As part of their response to the law, states are to use research based programs to teach reading or for intervention programs in reading. Schools now have to report to state and federal governments as to how they are progressing. One aspect of NCLB is that students are required to take some type of national standardized test so that states can see how they are doing compared to other states. States also have set standards that schools have to meet on standardized tests. If schools do not meet a certain level of proficiency, they are penalized. Other areas that are also taken into account in measuring yearly progress are attendance, number of special education students tested, minorities tested, etc.

Because of these new regulations, schools have to look closer at what they do. Schools are now evaluating how reading is being taught and if it is research based. They are also looking at the intervention programs they are using to remediate those who are not on grade level in reading. As programs are evaluated, effectiveness and ease of implementation as well as the cost of the programs must also be considered. Programs must however be researched based.

The National Reading Panel found five key areas that are critical to reading. These areas are: phonemic awareness, phonics, fluency, vocabulary and comprehension (National Institutes of Health, 2000). The Panel looked at each of the areas and the research that had been done in each area. They then looked at current teaching practices and how the practices aligned with the research on best practices in reading. Recommendations were made based on the best practices as defined by research. Schools were then to look at the research and find programs based on the results posted by the Panel. If schools implement programs that are research based, the hope is that all students will be able to read on grade level. Students who have reading difficulties will be identified earlier and interventions will be put in place so they receive the services they need in order to read. By using research based programs, best practices are being used so that greater success can be made towards helping students learn to read.

REFERENCES

Allor, J. H. (2002). The relationships of phonemic awareness and rapid naming to reading development. *Learning Disability*, 25, 47-57.

Americans with Disabilities Act (ADA), 42 U.S.C. § 12101 (1990).

Ary, D., Jacobs, L. C., et al. (1990). *Introduction to research in education.* Fort Worth: Holt, Rhinehart and Winston, Inc.

Baumann, J. F., & Hoffman J. V., et al. (2000). "The first R" yesterday and today: U. S. elementary reading instruction practices reported by teachers and administrators. *Reading Research Quarterly*, *35*(3), 338-377.

Bukowiecki, E. M. (2007). Teaching children how to read. *Kappa Delta Phi Record, 42*(2), 58-65.

Carl D. Perkins Vocational Education Act of 1984, 20 U.S.C. § 2301 (1984).

Carroll, J. M. (2004). Letter knowledge precipitates phoneme segmentation, but not phoneme invariance. *Journal of Research in Reading, 27*(3), 212-225.

Civil Rights Act of 1964, 42 U.S.C. § 2000 (1964).

Cooper, J. D., & Pikulski, J. J. (2000). *Extra Support Handbook: Preteaching and Reteaching Lessons*. Houghton Mifflin.

Coyne, M. D., & Harn, B. A. (2006). Promoting beginning reading success through meaningful assessment of early literacy skills. *Psychology in the Schools, 43*(1), 33-43.

Davidson, M., & Jenkins, J. R. (2001). Effects of phonemic processes on word reading and spelling. *Journal of Educational Research, 87*(3), 148-157.

DeBray, E. H. (2007). Federal education activities-History, summary by agency. Education Encyclopedia, from http://education.stateuniversity.com/pages/1986/Federal-EducationalActivities.html

Education Amendments of 1974, 20 U.S.C. § 6301 (1974).

Education of All Handicapped Children Act, 20 U.S.C. § 1400 (1975).

Elementary and Secondary Education Act of 1965 (ESEA), 20 U.S.C. § 6301 (1965).

Elementary and Secondary Education Amendments of 1966, 20 U.S.C. § 6301 (1966).

Ehri, L. C. (2003). Systematic phonics instruction: Findings of the national reading panel. Invitation seminar organized by the Standards and Effectiveness Unit, Department for Education and Skills, British Government. London, England.

Ehri, L. C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading, 9*(2), 167-188.

Ehri, L. C., & Nunes, S. R., et al. (2001). Phonemic awareness instruction helps children to read: Evidence from the national reading panel's meta-analysis. *Reading Research Quarterly, 36*(3), 250-287.

Federal Vocational Education Act, 20 U.S.C. § 11 (1917).

Fielding-Barnsley, R. (1997). Explicit instruction in decoding benefits children high in phonemic awareness and alphabet knowledge. *Scientific Studies of Reading, 1*(1), 85-98.

Foorman, B. R., Francis D. J., et al. (1991). How letter-sound instruction mediates progress in first-grade reading and spelling. *Journal of Educational Psychology*, *83*(4), 456-469.

Goals 2000: Educate America Act, 20 U.S.C. § 5801 (1994).

Good, R.H., & Kaminski, R.A. (2003). *DIBELS Dynamic Indicators of Basic Early Literacy Skills 6th Edition: Administration and Scoring Guide.* Longmont: Sopris West.

Goswami, U. (2005). Synthetic phonics and learning to read: A cross-language perspective. *Educational Psychology in Practice, 21*(4), 273-282.

Gray, A., & McCutchen, D. (2006). Young readers' use of phonological information: Phonological awareness, memory, and comprehension. *Journal of Learning Disabilities, 39*(4), 325-333.

Grek, M. L. (2003). What is Scott Foresman Early Reading Intervention? from http://www.fcc.org.

Higher Education Act, 20 U.S.C. § 1001 (1998).

Hudson, R. F., & Lane, H. B., et al. (2005). Reading fluency assessment and instruction: What, why, and how? *The Reading Teacher, 58*(8), 702-714.

IDEA Amendments, 20 U.S.C. § 1400 (1997).

Individuals with Disabilities Act, 20 U.S.C. § 1400 (1990).

Johnson, T. (2004). What is the Wilson reading system? from http://www.fcrr.org.

Kaminski, R. A. & Good III, R. H. (1996). Toward a technology for assessing basic early literacy skills. *The School Psychology Review, 25*(2), 215-227.

Lanham Act, 42 U.S.C. § 1501 (1941).

Leppanen, U., Niemi, P., et al. (2004). Development of reading skills among preschool and primary school pupils. *Reading Research Quarterly, 39*(1), 72-93.

Levy, B. A. & Lysynchuk, L. (1997). Beginning word recognition: Benefits of training by segmentation and whole word methods. *Scientific Studies of Reading, 1*(4), 359-387.

McGuinness, D., Guinness, C., et al. (1995). Phonological training and the alphabet principle: Evidence for reciprocal causality. *Reading Research Quarterly*, *30*(4), 830-852.

Molfese, V. J., Modglin, A.A., et al. (2006). Letter knowledge, phonological processing, and print knowledge: Skill development in nonreading preschool children. *Journal of Learning Disabilities, 39*(4), 296-305.

Morrill Act of 1862, 7 U.S.C. § 301 (1862).

Murray, B. A. (1998). Gaining alphabetic insight: Is phoneme manipulation skill or identity knowledge causal? *Journal of Educational Psychology, 90*(3), 461-475.

National Defense Education Act, 20 U.S.C. § 401 (1958).

National Institutes of Health. (2000). National Reading Panel: Reports of the subgroups teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, D.C., National Institute of Child Health and Human Development/National Institutes of Health.

New York State Education Department. (2003). The no child left behind act of 2001. from http://www.emsc.nysed.gov/deputy/nclb/parents/facts/eng/eng-overview.html

No Child Left Behind Act, 20 U.S.C. § 6301 (2001).

Rehabilitation Act of 1973, 29 U.S.C. § 701 (1973).

Robinson, C., & Wahl, M. (2003). What is fundations? from http://www.fcrr.org.

Santa, C. M., & Hoien, T. (1999). An assessment of early steps: A program for early intervention of reading problems. *Reading Research Quarterly, 34*(1), 54-79.

Sass, E. (2007). American education history: A hypertext timeline. from http://www.cloudnet.com/~edrbsass/educationhistorytimeline.html#1900.

Savage, R., & Stuart, M. (2006). A developmental model of reading acquisition based upon early scaffolding errors and subsequent vowel inferences. *Educational Psychology, 26*(1), 33-53.

Schneider, W., Kuspert, P., et al. (1997). Short-and long-term effects of training phonological awareness in kindergarten: Evidence from two German studies. *Journal of Experimental Child Psychology, 66*, 311-340.

Simmons, D. C., & Kame'enui, E. J. (2003). *Early Reading Intervention.* Pearson Education, Inc.

Statewide Parent Advocacy Network, Inc. (2007). Chapter two: Federal laws. Retrieved from http://www.emsc.nysed.gov/deputy/nclb/parents/facts/eng/eng-overview.html.

Stuart, M. (1999). Getting ready for reading: Early phoneme awareness and phonics teaching improves reading and spelling in inner-city second language learners. *British Journal of Educational Psychology, 69*, 587-605.

Title IX of the Education Amendments of 1974, 20 U.S.C. § 1001 (1972).

U. S. Department of Education. (2002). What to Know & Where To Go: Parents' guide to No Child Left Behind. A New Era in Education. Department of Education, ED Pubs.

Vellutino, F. R. (1991). Introduction to three studies on reading acquisition: Convergent findings on theoretical foundations of code-oriented versus whole-language approaches to reading instruction. *Journal of Educational Psychology, 83*(4), 437-443.

Wahl, M. (2003). What is road to the code? from http://www.fcrr.org.

Walton, P. D. (1995). Rhyming ability, phoneme identity, letter-sound knowledge, and the use of orthographic analogy by prereaders. *Journal of Educational Psychology, 87*(4), 587-597.