

THE RELATIONSHIP BETWEEN THE DYNAMIC INDICATORS OF BASIC
EARLY LITERACY SKILLS (DIBELS) ORAL READING FLUENCY (ORF) AND
THE ALASKA STANDARDS BASED ASSESSMENT (SBA) FOR PROFICIENCY IN
READING

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ABSTRACT

Polly Rowell. THE RELATIONSHIP BETWEEN THE DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS (DIBELS) ORAL READING FLUENCY (ORF) AND THE ALASKA STANDARDS BASED ASSESSMENT (SBA) FOR PROFICIENCY IN READING. (Under the direction of Dr. Karen Parker) School of Education, February, 2009.

The impact of No Child Left Behind and making Adequate Yearly Progress is influencing classroom instruction with Curriculum Based Measures such as the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The primary population of this study was from a small school in rural Alaska. The purpose of this study was to investigate the relationship between the first grade scores of the DIBELS Oral Reading Fluency (ORF) and the subsequent third grade scores of the Alaska Standards Based Assessments (SBAs) in reading. A Pearson's r statistical test was performed on the data from both scores. The results indicated that there was a positive, correlation between fluency on the DIBELS ORF and comprehension on the Alaska SBAs in reading.

DEDICATION

I owe my life and my salvation to you my Lord. I dedicate this dissertation to my Lord and Savior, Jesus Christ.

I thank Christ Jesus our Lord, who has given me strength, that he considered me faithful, appointing me to his service. 1 Timothy 1:12

You are awesome, O God, in your sanctuary; the God of Israel gives power and strength to his people. Psalm 68:35

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This research study would not have been possible without the support of the faculty of Liberty University. I would like to thank Dr. Karen Parker for the encouragement and belief that I could accomplish this study. I extend my appreciation to members of my doctoral committee, to Hannah and the graduate writing department, and to my friend Hamachan.

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CHAPTER ONE: INTRODUCTION

Reading is easy for few, tolerable for some, and difficult for others. Teaching students to read is the most important process that teachers face. What makes the process of decoding words and comprehending text the basis for educational reform? What makes the developmental process of reading the premise on which schools are held accountable? Teachers must now allot consideration to making Adequate Yearly Progress (AYP) in addition to teaching students, managing assessments, and facilitating intervention strategies. Public Law 107-110, also known as The No Child Left Behind (NCLB) Act, was passed to close the achievement gap among students and to ensure that schools receiving federal funds are accountable for the achievement levels of students (No Child Left Behind Act, 2001; DuFour, DuFour, Eaker, & Karhanek, 2004).

Learning to read is not easy for all students. The process of learning to read has been researched and debated, and no one has found one method which works best for all students (Adams, 2000). Educators are faced with the daunting task of ensuring that all students read and comprehend. Reading will persist to be a content area in which educators will make hypotheses and explore action research methods; however these take time. It is important for teachers to know whether the instructional strategies and methods that are being used are effective. Formative assessments allow teachers to qualify mastery of the objectives. Quick, formative assessments allow for changes in instruction. The changes in instruction may mean the difference in classifying a student as a proficient reader or as an at-risk reader. The authors of Dynamic Indicators of Basic Early Literacy Skills (DIBELS) proclaim them to be tools which will guide instruction and intervention

as well as predict student success (Good III, Gruba, & Kaminski, 2002).

Background of the Study

Why the urgency?

In 1997, Congress authorized the formulation of the National Reading Panel (NRP). The members of the panel included researchers, college instructors, educators, school administrators, and parents. Congress gave the task of “assessing the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read” to a national panel appointed by the National Institute of Child Health and Human Development (National Reading Panel Report, Introduction p. 1-1). Previously, the National Research Council (NRC) Committee presented in their report, *Preventing Reading Difficulties in Young Children* (Snow, Burns, & Griffin, 1998), findings which focused on research relevant to reading. The NRP took into consideration the work of the NRC and structured their research on how best to teach reading. The panel focused their research on five topics: alphabeticity (phonemic awareness and phonics instruction), reading fluency, comprehension (vocabulary and strategies for teaching comprehension), teacher education, and computer technology. In each area, the NRP identified the skill, presented evidence from research, and described classroom instructional practice with strategies for teaching (National Reading Panel, 2000; Farstrup & Samuels, 2002).

The Improving America’s School Act of 1994 mandated that states develop standards for core content subjects and related assessments to measure student achievement of those standards. This, along with the report from the NRP, brought increased attention to the federalization of education policy. This helped to fuel the No

Child Left Behind Act that was passed at the beginning of President George W. Bush's administration. States are required to develop standards for core content subjects and demonstrate accountability for students' achievement of standards. In turn, districts, schools, and teachers share in this accountability. Schools are held responsible for demonstrating AYP of how well their students reach mastery of state standards. Federal money is linked with the result of how well students attain the standards (Alaska Standards Based Assessments, 2006; Ponnuru, 2006). The NCLB Act obliges states to have standards, insists that they are aligned to the curriculum, requires that teachers teach to the standards, and enforces that schools demonstrate how well students are achieving the standards.

High-stakes Testing and Reading Accountability

Research reported by the NRP, as well as other studies, has brought to light many areas in which hypotheses are being formulated, tested, and analyzed. The focus on reading accountability has done much to improve the research structure concerning the early stages of reading. There is much evidence that has shown that those students who do not learn to read well by the third grade have little chance to be successful in school. The students who fall behind their peers face an uphill battle in regaining equal academic achievement and are more likely to experience behavioral difficulties than their peers who demonstrate success with reading. Skills must be taught and assessed early to prevent reading failure (Ericson & Juliebo, 1998; National Research Council, 1999; Good, Simmons, & Kame'enuei, 2001; Clay, 2002; Kamps, Wills, Greenwood, Thorne, Lazo, Crockett, Akers, & Swaggart, 2003). Children who learn poor reading skills and then practice them day after day have difficulty exchanging their bad habits for good

ones, thus inhibiting the process of reading for comprehension (Clay, 2002). Detecting problems in reading fluency and offering explicit, systematic interventions may provide the catalyst for students to make successful progress (Adams, 2000). Again, teachers need quick, research-based, formative assessments which allow for and respond to instructional changes.

National assessments have been used by states to measure how well students are achieving based on national standards for core content subjects. The federal mandates requiring that states develop their own standards for student achievement have generated a spotlight on classroom instruction and assessment. Scores on high-stakes tests show not only how well students are achieving the standards, but also how well schools are documenting their growth. Teachers need formative assessments which show how well students are progressing toward the state standards. The benchmark assessments provide measurement toward this goal in grades three through ten, but there are no such benchmarks for kindergarten, first, and second grades.

Most of the state assessment tests are given in the spring of the third grade. Students have attended three years of formal school before their first high-stakes test. Therefore, waiting until the end of third grade is much too late to influence much change through the reading curriculum and instruction. Earlier identification of reading problems along with timely interventions would increase the opportunity for students to achieve academic success. Struggling readers, when provided remediation with phonemic awareness, can make steps forward toward reading improvement (Adams, 2000). Classroom observations and assessments are meant to inform instruction. When the data is analyzed, teachers will be able to make modifications to support the learning of those

most at-risk for reading failure (Lyons, 2003; Gentry, 2000).

DIBELS, promoted as an outcome-driven model

The Institute for the Development of Educational Achievement at the University of Oregon developed a series of school-based assessments (DIBELS) that measure pre-reading skills as well as the “big ideas” of beginning reading skills. Scores on the assessments enable teachers to identify those students who are not making sufficient progress in the acquisition of reading skills (Moats, 2003; Hoffman, Dwyer, Clarke, & Power, 2002). The DIBELS outcome-based model not only measures pre-reading skills, but also is presented as a predictor of performance of reading success on high-stakes tests and benchmark exams. The writers also contend that it can be used as a progress monitoring tool to guide instruction. This kind of measure supports the efforts of teachers to provide instruction by measuring students in relation to the major components of reading, such as phonological awareness, reading fluency, and summarizing reading passages (Moats, 2003; Good III, Gruba, & Kaminski, 2002). Utilizing this model prevents teachers from treating assessment and intervention as separate entities.

Teachers must have school-based assessments that are reliable and provide tracking of intervention strategies in order to affect the changes necessary for student success. The DIBELS performance continuum provides the teacher with scores which indicate the level of learning as well as documentation (Good, Simmons et al., 2001). The authors of DIBELS claim that early foundation skills can be used to predict proficiency in reading. Several studies (Uribe-Zarain, 2007; Cook, 2003; Miller, 2005) have been devoted to the relationship between performance on the DIBELS assessments and performance on high-stakes tests. The researchers reported that there was a significant

relationship between DIBELS and the state test, especially with students who scored in the proficient range. Other studies (Buck & Torgesen, 2003; Shaw & Shaw, 2002; Wilson, 2005; Barger, 2003) indicated that DIBELS measures were accurate predictors of performance on the state assessment.

Statement of the Problem

This study examined archival data of students over a four year period in Elementary School B to determine the relationship between the DIBELS First Grade Oral Reading Fluency (ORF) scores and their Third Grade Alaska Standards Based Assessment (SBA) scores in Reading. Specifically, this study sought to determine whether students who reached the benchmark level of oral reading fluency in first grade were likely to meet the proficiency standard on the Alaska SBA in the third grade and, conversely, whether first grade students deemed at-risk were unlikely to meet the proficiency standard. The study compared scores of two separate assessments and sought to answer the question:

Is there a relationship between the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency score of first grade students in Elementary School B and the Alaska Standards Based Assessment score in reading?

Statement of Hypotheses

1. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in the years 2003-2006 and their scores on the third grade Alaska Standards Based Assessment score in reading.
2. There will be a significant, positive correlation between scores of students who

take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2003 and their scores on the third grade Alaska Standards Based Assessment in reading.

3. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2004 and their scores on the third grade Alaska Standards Based Assessment in reading.
4. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2005 and their scores on the third grade Alaska Standards Based Assessment in reading.
5. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2006 and their scores on the third grade Alaska Standards Based Assessment in reading.

Professional Significance of the Study

Implications

A positive correlation between a proficiency score on the DIBELS ORF for first grade students and a proficiency score on the third grade reading assessment of the Alaska SBA would provide evidence to support the use of DIBELS as an outcome-based model for assessment and instruction. The ability to identify at-risk students in first grade would prove valuable for developing reading intervention strategies to prevent reading failure and promote reading success. The results would add to the bank of studies

conducted using DIBELS and high-stakes tests (Kamps et al., 2003; Hoffman, Dwyer, Clarke & Power, 2002; Good III et al., 2002).

Applications

Research provides evidence to support the justification of curriculum and materials for reading interventions. Gathering data through research of this type could provide evidence to support the inclusion of a reading specialist within the school. Learning to read is important, so the teaching of reading must be better than it has ever been before (Adams, 2000). This study contributes to the mission of the school by identifying areas of strength and areas of need within the school community. The evidence also becomes valuable to the school district and administration when comparing the results to other data from schools within the district and the state. The results of the study will provide information concerning the appropriateness of the intervention practices and the scrutiny of curriculum. Teachers could utilize the progress-monitoring series of DIBELS as formative assessments and adjust instruction to enable students to become skilled at the standards in the content area of reading.

Teachers, by using assessments like DIBELS, will be able to identify students who may be at-risk for reading, apply intervention strategies, monitor progress, and guide their instruction. This study will provide interest for continued research for other intervention models, such as the Response to Intervention (RTI) and its effect on DIBELS and SBA scores. Hypotheses concerning the strategies and treatments given to at-risk students will be initiated for further research.

Overview of Methodology

This research was a quantitative study and qualifies as non-experimental because there

were no manipulations of variables. It is considered correlational research because it investigated the predictability of scores of one variable (DIBELS ORF) in indicating proficiency on the other variable (SBA) (Ary, Jacobs, Razavieh, & Sorensen, 2006).

Subjects

Elementary School B is located in a rural area in the state of Alaska. The current population of the school is 306 K-5 students. There are 143 female students and 163 male students. Eighty-eight percent are Caucasian, six percent are Alaska Native, one percent are Black, one percent are Hispanic, and less than one percent are Limited English Proficient. Twenty-six percent are identified as special needs students.

The sample subjects for the purpose of this study were students who were assessed with the DIBELS ORF when they were in the first grade and were evaluated by the Alaska SBA when they were in the third grade. The DIBELS data is archived on the DIBELS database. Data from first grade students over a four year period beginning in 2003 was compared with the same students' third grade Alaska SBA scores. This provides a systematic sample of approximately 124 students for whom archival data, on the school computer database, is available.

Instruments

The DIBELS evaluation tool records progress in pre-reading skills in five distinct areas. It measures letter naming fluency, phoneme segmentation, nonsense words, oral reading fluency, and retelling. The scores from the oral reading fluency measure were used in this study. All pre-reading skill assessments, with the exceptions of the oral reading fluency measure and the retell measure, are discontinued at the end of first grade. Archival data from two measures of student academic performance in reading were used

in this study: (1) first grade scores from the DIBELS oral reading fluency measure and (2) third grade reading scores from the Alaska SBAs. The Pearson Product Moment Correlation Coefficient was used to determine the direction and strength of the relationship between the two scores.

The DIBELS ORF measure is given individually in the winter and spring of first grade. The measure consists of three reading passages which the student has never seen. The administrator gives direction to the student to read each passage orally. The administrator crosses out any word that the child reads incorrectly, leaves out, or deliberates on for more than three seconds. At the end of one minute, the administrator totals the words read correctly and records the score. The administrator then documents the median score of the three passages. The test has been determined to have reliability and validity by the creators of the measure. Proficiency is determined by scoring above and within a set range. Good III has stated that there is evidence of reliability, validity, and sensitivity for DIBELS in a series of studies (Good III, et al., 2002).

The Alaska SBA is administered in a group setting during the spring of the school year. The assessment measures to what extent students are meeting statewide performance standards in reading. The assessment is criterion based and is aligned with the Grade Level Expectations (GLEs). The GLEs identify specific skills within the content standards. The proficient score represents what students should know, from that content area, for their grade level. The cut scores are the numeric values given to demonstrate proficiency. They are the lowest number of acceptable responses on the SBA which calculates to the minimum score acceptable to be considered proficient. Proficiency is determined by scoring above and within a set range. The SBAs measure

the performance standards within the strands of word identification skills, forming a general understanding and analysis of content or structure. Students must score at or above 300 to reach proficiency in reading. The SBA is content-based, aligned with the Alaska content standards, and has been determined to have content validity and reliability.

Procedures

The DIBELS ORF scores were obtained from the DIBELS data website. The Alaska SBA scores were retrieved from the school data management server, Just Five Clicks. Scores were coded for ease of manipulation and anonymity at the school, and a data key was compiled and secured in the school safe. Students who did not have data for both measures were eliminated from the study sample. The groups were determined by the analysis of the DIBELS ORF scores, and two groups were identified. Students who reached benchmark levels on the ORF and students who did not reach benchmark levels on the ORF were identified as the two distinct groups. Their DIBELS scores were then compared to their scores on the Alaska SBA. The researcher used the Statistical Package for the Social Sciences (SPSS) for descriptive statistic analysis. The DIBELS ORF data was presented in tabular form. The SPSS developed the graphic representations included in the results of the study (page 65).

Definitions

Adequate Yearly Progress (AYP) – This phrase refers to the measure of a school's ability to meet academic progress of state standards as identified by the No Child Left Behind Act of 2002.

Accountability- The point when states, districts, and teachers assume responsibility and are subject to report, explain, or justify the performance of all students in regards to AYP and state standards indicates accountability.

Benchmark- The amount of expected progress a student should make within a specified time frame is referred to as a benchmark (Wright & Wright, 2008).

High-stakes tests- Assessments which are used to determine the AYP of students on the state-curriculum standards of content subject areas (reading, writing, math, and science) are known as high-stakes tests.

National Reading Panel- This was a committee established by Congress in 1997, for the purpose of the investigation of the effectiveness of reading instruction (National Reading Panel, 2000).

Reading fluency- Reading that demonstrates a student's ability to read quickly with accuracy while commanding the use of expression, punctuation, intonation, and pauses indicating understanding is considered fluent (Cunningham, 2000; Shanker & Ekwall, 2003).

Research-based- Programs which are peer reviewed; have applied rigorous, systematic, and objective procedures; employed systematic, empirical methods; and have undergone rigorous data analyses are considered to be research-based (Wright et al., 2008).

Response to Intervention Model (RTI) - RTI is a learning approach that involves using research-validated interventions followed by the monitoring of student progress (Wright et al., 2008).

Standards- This term refers to the established norm of what students are expected to know and do within each grade and content area (Wright et al., 2008).

A Look Ahead

The goal of the introductory chapter was to convey the basis for the research study. The purpose of this research was to study the efficacy of using first grade oral reading fluency scores on the DIBELS assessments to indicate proficiency in reading on the third grade Alaska SBAs. Chapter Two places the problem into perspective by examining a brief history of reading research and the role of reading fluency, reviewing theories of reading fluency, describing current information about DIBELS (supporters and doubters) and its role in Response to Intervention, and describing similar research studies. The focus of Chapter Three is to provide the setting in which the study transpired. This chapter will describe the premise for using Elementary School B and DIBELS, the procedures for collecting data from DIBELS and the Alaska SBAs, and how it was analyzed. The results of the study are provided in Chapter Four. They are presented according to the hypotheses that were identified in Chapter One. Finally, the last chapter provides a summary of the results of the research. It includes an interpretation of the findings, the relationship that this study has to previous research, recommendations for educators, and suggestions for future research.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

Reading inquiry begins with the historical perspective and foundational beginnings of educational research. Reviewing the work of past educators and researchers gives acceptance to their work and provides support to their cause (Fresch, 2008). This chapter provides a brief history of reading, a discussion of the role of reading fluency, a description of relevant theories pertaining to fluency, a review of Curriculum Based Measures (DIBELS) and instructional decisions, a discussion of fluency and high-stakes testing, a brief review of fluency intervention practices, and a review of similar studies.

A Brief History of Reading

The argument for the best method for reading instruction continues to be the focus of discussions of reading pedagogy. There are teachers who posture themselves in the phonics only group, some who place themselves with the whole language faction, and others who are somewhere in the middle. It is difficult to dismiss the idea of teaching students the individual letters and sounds and opt to focus on whole passages instead. Marilyn J. Adams (2000) in her book, *Beginning to Read*, communicates that the argument about the best way to teach reading has been at the center of education since the formation of the syllabic-writing system. The English language is an alphabetic script. The dilemma about the best method, phonics or whole language, is not a new debate.

Colonists brought their education ideas from Europe. The impetus of reading during colonial times was instruction in the alphabetic principle. Students, upon learning letters and sounds, were presented with adult-focused books and narratives to read. The public speaking arts of oration and elocution were emphasized as important components

of the curriculum. Students were of multiple ages and would arrive at school at different times throughout the day. They were required to read the assigned reading lesson aloud. Students paired with their peers to offer assistance with reading. As they completed their oral reading assignment, they would begin their written assignment. The Horn Book, the Bible, and patriotic essays were sources for elocution lessons. Later, early primers were introduced which included pictures of animals shown with the ability to read and write. This was to emphasize the importance of those skills. Reading the Bible was deemed as necessary to gain salvation and, therefore, was considered a crucial skill.

Thomas Jefferson (one of our founding fathers) believed that in order for citizens to be self-governing, they must be literate. His inspirations provided the basis for our public education system. In the late 1700's Jefferson demonstrated federal involvement in education with his call for universal public schooling in content areas such as reading, arithmetic, and history. He was unsuccessful in establishing universal education paid for by public taxes. He also proposed that there be three levels of education. Although his ideals were unrealized at the time, they were influential in the foundation of our public schools (Shannon, 1996; Adams, 2000; Lewis, 2008). In the mid-1800s, the focus of education became more secular with the emphasis on individuals becoming educated, responsible citizens. Influences of literature in Europe and America encouraged the aspiration for an educated public (Adams, 2000). The desire to learn, and the emphasis on the true rewards of education, fueled the need for more than an elementary education, so secondary schools were formed. These grammar schools provided students with preparation for college (Johnson, Dupuis, Musial, Hall, & Gollnick, 2002). Nineteenth-century educators and leaders, such as Horace Mann, posed the argument for sectarian

schools. They were made available for common people and provided the opportunity for secondary education to all people. Although the colonial purpose of education was religious, the emphasis after the Revolutionary War shifted to a common language, patriotism, and unity. The school became the place where students could be nurtured and inspired as American citizens (Johnson et al., 2002).

Mann also proposed a change in curriculum. He criticized reading instruction as a torturous exercise in speech and not a thought process of the mind. He further advocated that reading should be taught through whole, meaningful words rather than the sound symbol approach. The meaning-first curriculum brought about graded readers based on age and achievement level. Again, education was considered the means by which responsible citizens were generated. The curriculum emphasis was more about the meaning of text and less about decoding. Phonics instruction became more of a supplementary method due to the fact that comprehension was the focus of most basal reading programs. Teaching students to use phonetic strategies was to be used only as a last resort (Rasinski, 2003; Adams, 2000).

Late in the 19th century, there was a lack of oral reading in everyday life (Rasinski, 2003). Opportunities for oral reading were more prominent in classroom instruction than in the daily lives of families, but as the curriculum within the schools became more text-oriented, there was a shift toward silent reading. The debate over the merit of oral reading versus silent reading produced studies which demonstrated that silent reading yielded better comprehension (Hoffman, 1996). There were more accessible books, instructional guides, and printed resources that permitted the teaching of larger groups of students. There was less reliance on the sharing of one source. The

words-to-reading approach, with the inclusion of comprehension questions, became prevalent in most of the reading series. Oral reading was discontinued, discouraged, and even forbidden in many schools (Rasinski, 2003).

William S. Gray, a renowned reading theorist, is credited with the development of the first published reading assessment in 1914. This scientific examination of reading looked at oral reading. The administration of this measure kept this assessment from becoming popular. It had to be administered one-on-one, was time consuming, and involved oral reading. The individual nature of assessing oral reading made this type of assessment less desirable. Silent reading became the preferred method for instruction and assessment (Pearson, 2000; Rasinski, 2003).

By the beginning of the twentieth century, the introduction of textbooks and the preference for efficiency and scientific objectivity encouraged assessments which measured silent reading comprehension. Content area reading provided the teacher the opportunity to assess reading comprehension using subject area questions. This method did not always present itself as the best choice. It was difficult to determine if the students' lack of understanding was due to the difficulty of the content or the challenging reading level (Pearson, 2000; Rasinski, 2003).

The focus on efficiency and scientific objectivity did not only stay within the classroom, but also seeped into the field of research. Classrooms and schools became places where good ideas and insights could be tested and scholarly debates could be resolved (Hoffman, 1996). The space race with Russia and the launch of Sputnik fueled a competitive spirit and sense of patriotism. The people in the United States were concerned with education. It was important that the education offered in America be

equal to or better than what is taught in other countries of the world (Adams, 2000; Cowen, 2003). This concern began to call into question the manner in which children were instructed in reading. The question of how best to teach beginning reading continued to offer opinionated answers. Rudolph Flesch (1955) created doubt in the minds of parents about the abilities of schools to educate students with his book *Why Johnny Can't Read* (Cowen, 2003; Alexander & Fox, 2008). He used the space race and preyed on the emotions of the nation to voice his opposition to the reading method of the time. He advocated that children should be taught to read by using alphabetic and phonetic approaches rather than the look and say method. His public clamor created an interest within the political domain of how best to teach reading (Adams, 2000).

In 1959, at the National Conference on Research in English, it was noted that there was a void in research on reading. In 1967, the Office of Education within the U.S. Department of Health, Education, and Welfare sponsored the *Cooperative Research Program in First-Grade Reading Instruction (the First-Grade Studies)*, authored by Bond and Dykstra (Cowen, 2003). The First-Grade Studies investigated beginning reading approaches, effectiveness of the approaches in relation to readiness, and the characteristics of the environment in which the approaches were used. This study was credited with stimulating later research on the role of the teacher and the importance of teacher training through professional development. Most important was the contribution the study had to the field of literacy. Bond and Dykstra noted that no one approach could be labeled the absolute best method. The importance of phonemic awareness and the instruction of phonics in a systematic and deliberate manner emerged as an effective

method in beginning reading (Walker, 2008; Pearson, 2000; Adams, 2003; Cowen, 2003).

The most examined model of federal involvement in education was Title I of the Elementary and Secondary Education Act of 1965, later referred to as the Chapter I program. The intent of the program was to increase academic opportunities for children from low income neighborhoods. It was implemented to close the achievement gap between poor and other children. It was delivered merely as a funding source with no guidelines or accountability, just expectations that the achievement gap would narrow (Snow et al., 1998). Title I was mostly a peripheral program where students were pulled from the classroom for academic instruction (McDonnell, 2005). The schools used the funds, but not necessarily for the purposes to which they were intended. The results from the first evaluation showed little evidence of improvement of the children in poverty, so the continuation of the program was in jeopardy. The federal government needed reassurance that the program could be evaluated in cost-benefit terms in relation to student achievement. States became dependent on the money and were concerned about losing the funds. Title I was reauthorized to insure that students were receiving instruction in addition to and not instead of the regular classroom instruction (McDonnell, 2005; Snow et al., 1998). The program has been restructured several times in an attempt to narrow the achievement gap between students of low- and high-poverty schools. The most recent reauthorization was part of the Improving America's School Act of 2002 (Snow et al., 1998; Shannon, 1996).

Spawned by the perception of the American education system and the best way to teach reading, Jeanne S. Chall contributed a landmark study, *The Great Debate* (1967).

This study compared and contrasted literacy instruction within the classroom. The debate involved a word-with-meaning-first approach versus the phonics-and-decoding approach. Chall interviewed authors, specialists, and teachers. Her findings noted that reading programs, which stressed a phonics approach, indicated a more favorable result toward beginning reading instruction. Her conclusions brought about radical changes in the basal textbooks for beginning reading. The basal textbook writers responded with changes in instructional approaches along with stories utilizing more challenging vocabulary for grade one students. The study also ascertained that reading programs should provide books which build opportunities for fluency practice as well as challenging vocabulary to practice decoding skills. Chall also found that the teacher was considered very important to the success of the reading program. Challenging teachers to change from familiar instructional methods would be not easy. The results implied that the reform should include both the improvement of reading programs and professional development for teachers (Hoffman, 1996; Pearson, 2000; Adams, 2000; Cowen, 2003).

There were teachers who believed that because the main goal of reading was comprehending text, teaching to that ability was most important. There were others who professed that phonics was most important. Could there be a way to bring both points of view together? The Commission on Reading Report (1985) known as *Becoming a Nation of Readers (BNR)* managed to emphasize a balance between the two (Alvermann, 1986; Cowen, 2003). This study was initiated in response to the 1983 critical report; *A Nation at Risk*, by the National Commission on Excellence in Education (Wakeman, Browder, Meier, & McColl, 2007). The BNR researchers combined the strength of linguistics, child development, and behavioral science in their study. This study suggests that

comprehension comes from automatic word recognition (fluency) which comes from learning letters and sounds (phonics). Also significant was the insistence that phonics be taught simply and as soon as possible (by the end of second grade) to allow children to read earlier and faster. This would enable students to accomplish the goal of comprehension. Although earlier studies did not promote one method over another, these researchers emphasized using a combined approach. Considered a constructivist approach, teachers were encouraged to use phonics, writing, and authentic literature to improve comprehension (Alvermann, 1986; Farstrup, 2002; Cowen, 2003).

The significant message from BNR was for teachers to provide opportunities for students to read. This fueled an increase in the publication of new children's books. Teachers gravitated away from basal programs and ventured toward the use of existing literature to teach reading skills. Most of the credit, for the use of authentic literature and activities to teach reading skills, goes to the 1988 California Reading Framework. This framework required that teachers make use of books with challenging text, comprehension questions, and authentic activities as opposed to worksheets and basal readers. Incorporating authentic activities provided for the application of reading and writing skills within other subject-area content curricula. This integrated approach was based on the premise that students will read best when given a purpose (Pearson, 2000; Walker, 2008).

This shift, from the balanced phonics approach toward authentic literature and activities, realized its form in the whole language movement in the early 80s. The whole language movement is described by Pearson (2000) as a constructivist method (where students must build meaning as they read), using authentic literature, activities, and

writing across content curricula. The success of the whole language approach lies with the instructional expertise of the teacher. The de-emphasis of skills and the relationship of the student with the text prompted a change in the way teachers perceived their role (McLaughlin, 2008). Basal text companies responded with changes to their programs incorporating more integrated language arts activities and authentic literature. The teachers' instruction manuals contained fewer vocabulary and phonics lessons which were isolated activities (Pearson, 2000).

The whole language movement met its demise during the early 90s. The image of whole language was not idealized by every teacher throughout the country. The lack of professional development in the whole language method contributed to its disintegration. There was not an individual leader or spokesperson to identify the principles of the approach, nor was there a specific conceptual idea or technique (Pearson, 2000). In the mid-90s, the downfall was hastened when low reading scores by California students were blamed on the move from a phonics-based approach to the whole language approach (Cowen, 2003).

In the mid-80s, during the flare-up of whole language versus phonics movement, there was a congressional request for a report that would review phonics and early reading instruction. The Center for the Study of Reading submitted a proposal, and it was accepted. Marilyn Jager Adams was chosen as lead researcher for this task. In her book, *Beginning to Read: Thinking and Learning About Print* (1990/2000), she provides a complete review with the purpose of bringing balance and reason to the debate of phonics versus whole language (Cowen, 2003). The committee did not repeat the research of the Great Debate nor of the BNR study. It did, however, consider their results and focused a

more comprehensive review on alphabets, early reading research and its development, the debate surrounding phonics, and both the outward and inward nature of the reading process (Pearson, 2000). Adams discovered that students who were taught through reading approaches that utilized both a code-emphasis and meaningful-connected text demonstrated superior results in reading achievement. This study was also the first to introduce the idea of a home-reading connection. It brought attention to the importance of reading to children. Adams suggests that the reading development of young children should include instruction in phonemic awareness, explicit phonics instruction, independent reading of authentic literature, automaticity with print, and reading aloud to children (Cowen, 2003).

Although, Adams provided an extensive review, her research did not provide any solutions to close the literacy gap for minority groups. Along with this concern, the late 90s saw a great increase in technology. The definition of literacy now included being computer literate and able to use the internet. The U.S. Department of Education and National Academy of Sciences had the responsibility to identify effective interventions for struggling readers. Their report, *Preventing Reading Difficulties in Young Children* (PRD), not only addressed the problems of children, but also looked at the education of teachers (both school-aged and pre-school) and anyone who works with young children. It was determined that there were no interventions which could take the place of an excellent teacher (Snow, Burns, & Griffin, 1998; Farstrup, 2006). The PRD report suggested that teachers of young children should provide many occasions for reading, experiences with print (spelling-sound relationships), and opportunities to learn about the alphabetic system and the structure of spoken words. Students need an early-code

emphasis along with an approach that emphasizes meaning. This report also provided specific grade-level recommendations (prefaced by reviews of research) and strategies for teachers of students deemed at-risk for reading failure (Pearson, 1999). Those guidelines included explicit instruction in early intervention and strategies to develop reading fluency (Hiebert, 2002; Cowen, 2003).

In the late 90s, while many states were developing state standards and high-stakes testing, the federal government and legislators became actively involved in making educational decisions, passing bills, and distributing funds. The passage of the *Improving America's School Act* required states to hold all students to high content standards. *The Individuals with Disabilities Education Act* (IDEA) was reauthorized in 1997 and required all students to have access to the general curriculum (Allington, Woodside-Jiron, 1999; Wakeman et al., 2007). Congress created the National Reading Panel (NRP), consisting of reading experts and scientists, to review research in reading instruction and identify the various approaches, key skills, or methods shown to be most effective. Their charge was to concentrate on the years from kindergarten through third grade (National Reading Panel, 2000; Shanahan, 2003; Cowen, 2003). The NRP used the conclusions of the PRD report to help determine the five major issues that would be evaluated (Shanahan, 2003). The 14-member panel divided into five smaller groups to study each topic. The areas identified by the NRP were alphabetics (phonemic awareness and phonics), fluency, comprehension, teacher education/ reading instruction, and computer technology/ reading instruction (Cowen, 2003). It was important to protect the results from bias and prejudice, so the study was guided by pre-established rules and allowed only experimental evidence research to demonstrate effectiveness of the instructional

procedures. Public input was solicited from educators during regional meetings (Shanahan, 2002).

The findings of the report identified the five areas of reading instruction to be phonemic awareness, phonics, fluency, vocabulary, and text comprehension. The report further provided discussion of each of the five areas, including the experimental research results and the most effective instruction to promote successful reading (Armbruster, Lehr, & Osborn, 2001). The committee followed scientific guidelines for research in their review. Due to the manner in which the committee studied the research, the report identified the instructional practices as scientifically researched-based (National Reading Panel, 2000; Cowen, 2003). The NRP report clarified the definitions of *phonemic awareness* and *phonics*, endorsed automaticity of vocabulary to promote enjoyment of reading and fluency, identified instructional comprehension strategies, and supported professional development in literacy (Cowen, 2003).

President George W. Bush, in January of 2002, signed the *No Child Left Behind Act of 2001* (NCLB) which documented his framework for education reform. This act supports the principles of *Brown vs. the Board of Education*, because of which racial segregation in public schools was outlawed (U. S. Department of Education, 2004). NCLB was a reauthorization of the *Elementary and Secondary Education Act* (ESEA) of 1965, but with new requirements focusing on improvements at the elementary and secondary levels. It supported IDEA with the requirement that students with disabilities be included in standards-based reform (Wakeman et al., 2007). The plan was for schools to have students score at 100 percent proficient (on grade level assessments) in reading, writing and mathematics by the year 2014 (Legislative Background, 2008; Hoff, 2008).

The White House surmised that it was necessary to force states to raise academic standards (Ponnuru, 2006). NCLB was based on the belief that schools should set high goals and expectations and be held to strict accountability standards, and students would demonstrate achievement (Congressional Digest, 2008). The purpose of ESEA, IDEA and now NCLB was to narrow the achievement gap between high- and low- performing students (Kim & Sunderman, 2005).

The NCLB Act provided for stronger accountability, increased flexibility and local control by schools, expanded options for parents, and emphasized proven teaching methods. The states gathered the baseline data from assessments for the 2001-2002 school years. This data was used to determine the percentage of students meeting or exceeding the proficiency level of academic performance. The score provided the goal of attainment for the lowest achieving groups of students. The states established their own timelines for all students to reach Adequate Yearly Progress by the end of the twelve-year time frame established by the Act (107-110 NCLB, 2002). States were given deadlines to write assessments based on standards. These were to be in place by 2005-2006. Students were assessed on their achievement levels in meeting those standards. It was also the states' responsibility to set their own academic and achievement benchmarks (Wenning, Herdman, Smith, McMahon, & Washington, 2003; Buly, Valencia, 2002). States would be assigned accountability based on the students' level of proficiency. The scores would be used to demonstrate Adequate Yearly Progress (AYP) in reading, writing, and mathematics, or the schools could bear the consequences of withheld funding and possible take-over by school improvement teams (Congressional Digest, 2008).

AYP has been met when all students (subgroups include economically

disadvantaged students, racial and ethnic groups, students with disabilities, and students with limited English proficiency) meet the absolute level of performance in reading and mathematics. A school that has any group that does not meet the proficiency score will fail to make AYP for that year. Schools that fail to make AYP for two or more years are subject to sanctions, such as decreased federal funding (Kim & Sunderman, 2005).

Schools must have all students, including subgroups, at proficiency level on state reading and mathematics tests by 2014 (Olson, 2006).

According to the online article, *Progress by Our Schools and the U.S. Department of Education Overview (2008)*, all 50 states, the District of Columbia, and Puerto Rico cooperate with accountability plans and the annual testing of students to measure progress toward proficiency, offer parents reports of school progress, and participate in the Nation's Report Card. Also, test scores have increased, the achievement gap has been lessened, and much progress has been made toward the 2014 goal of all children learning to read and do math at grade level or better (<http://www.ed.gov/nclb>).

A Brief Historical View of Fluency

Oral reading fluency is described as translating text orally with speed and accuracy (Walczyk, 2007; Fuchs, Fuchs, Hosp, & Jenkins, 2001). Author Timothy V. Rasinski (2003), in his book, *The Fluent Reader*, states that “fluency is comprised of accuracy, rate, and prosody” (p.5). The National Reading Panel explains that reading fluency involves expression as well as speed and accuracy of text (National Reading Panel, 2000). Fluency is also portrayed as the connection between accurate and automatic decoding and comprehension (Routman, 2003; Padak & Rasinski, 2008; O'Connor, White & Swanson, 2007). Fountas & Pinnell (2006) in their book, *Teaching for*

Comprehending and Fluency, explain that fluency includes not only the explicit, but also the implicit interactions with printed text. The reader can make connections with the text quickly and with ease. There are many definitions of reading fluency, but each involves the students' ability to say words quickly and with precision (Kuhn, 2005; Eldredge, 2005).

As discussed earlier, oral reading was a necessary art for the family until the early part of the 19th century. There were no radios or televisions and very few books. The sharing of literature was the method of family entertainment. The goal of teachers and of instruction was to equip students to be an active participant in family life (Stayter & Allington, 2001; Rasinski & Mraz, 2008). Including oral reading as a part of instruction was considered the mark of a good teacher. Toward the beginning of the 20th century there was a shift toward a decodable or sight-word oriented method of instruction which included strategies in comprehension. Teachers sought to increase comprehension and promote silent reading. An oral reading focus required teachers to work one-on-one with students, whereas silent reading could include large groups of students reading at the same time. Silent reading was thought to be directly related to comprehension. Students were being assessed in standardized formats which required silent reading, so instruction toward this goal was thought to be the most beneficial. This thought process was so strong that some schools began to ban the practice of oral reading as an instructional approach and even discouraged the use of silent decoding by students (Stayter et al., 2001; Rasinski, 2003; Rasinski et al., 2008).

Round-robin reading was an instructional technique that teachers continued to use throughout the latter part of the twentieth-century. The method incorporated the use of

oral reading, and allowed teachers the flexibility to work with a small group or with the whole-class. This practice became controversial because of the nature in which it was used. It required minimum preparation by the teacher and gave the teacher maximum control over the students. The teacher would call on one student to read aloud while other students followed along in their books. If a student was not following along, then the teacher could quickly call on that student in order to redirect their attention. This technique was thought to have caused embarrassment to poor readers and frustration for skilled readers (Rasinski et al., 2008; Rasinski, 2003).

Theoretical Framework for Reading Fluency

The NRP identified fluency as one of the five key skills to reading achievement. Adams (2000) described fluency as a characteristic of skillful reading. Utilizing reading fluency as an overall indicator of reading competence requires a theoretical review. Reading fluency as an indicator of reading proficiency derives credibility from examining the foundation of reading pedagogy. The following is a brief review of some of these foundational theories.

Theory of Automaticity

LaBerge & Samuels (1974) are credited with the Automaticity Model of reading (also known as the bottom-up serial stage model). Stanovich (1996), in the *Handbook of Reading Research, Volume II*, describes it as a rekindling of the concept of automaticity by Edmund Huey. Their model provided the first conceptual framework for using oral reading fluency as an indicator of reading development. They describe reading as an orchestration of many complex skills. During the reading process, there is a limited capacity for cognition. A child must recognize letters; translate them to sound; merge the

sounds together to form words; integrate the words into meaningful sentences; access schema; make inferences; and complete this task quickly, seamlessly, and effortlessly. Automaticity is the management of each of these skills without conscious attention so that cognition can focus on comprehension. Poor comprehension may be explained by the reader investing too much thought into the surface level (decoding) aspects of reading (Stanovich, 1996; Fuchs et al., 2001; Rasinski & Mraz, 2008; Harn, Stoolmiller, & Chard, 2008).

Reading should be so effortless and autonomous that the person performs the task unconsciously to the point that when print is evident, they are compelled to read. It takes place without intention and without interfering with comprehension. It is the successful coordination of concurrent processing (Walczyk, 2000). Samuels theorized that reading includes the process of decoding (sounding out words), comprehension (attaching meaning), and attention (the cognitive process to decode and comprehend). Beginning readers (those who are learning letters and sounds) cannot concurrently decode and comprehend written text; however, fluent readers (whole word readers) can do both at the same time (Samuels, 2002). Adams (2000) suggests that pre-readers, when giving attention to phonemes, have decreased capacity to analyze higher-order sound structures of syllables and comprehension. The comprehension of text can happen only when the reader has the knowledge and skills required for automatic recognition of words. Beginning readers have a limited amount of attention that they can devote to the critical tasks of decoding and comprehension. Reading fluency development is a critical prerequisite to comprehension (Stanovich, 1996; Griffith, & Rasinski, 2004; Kuhn, 2003; Adams, 2000).

A necessary element in skilled reading is automaticity. Automaticity encompasses characteristics which include autonomy and utilization of cognitive resources. Autonomy refers to the capacity to read without actively thinking about it (such as the scroll of print at the bottom of a television show). The reader builds automatic word recognition through extensive exposure to print. Practice with basic sight words and orthographic patterns allow the student to become less focused on laborious letter-to-letter decoding. The skill development of word recognition and practice with reading passages permits students to build automaticity with reading. The automaticity frees the reader to retrieve word meanings which would attribute to comprehension of the text (Kuhn, Schwanenflugel, Morris, Morrow, Woo, Meisinger, Sevcik, Bradley, & Stahl, 2006; Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, & Morris, 2006). Readers have the limited amount of attention to devote to both decoding and comprehension. Focus on one may leave the other to be deficient (Griffith et al., 2004).

Interactive-compensatory Model of Reading

Fluency is increased as readers are able to understand what they are reading. Comprehension requires that readers be fluent so that they can attend to the meaning. Fluency and comprehension are codependent. The interactive-compensatory explanation of reading fluency, as explained by Stanovich in 1980, portrays the reader as constructing meaning from text while reading. He claimed that struggling readers have to compensate for fluency by using context clues and strategies to help with comprehension (Fresch, 2008). This constructivist approach allows the reader to use meta-cognitive strategies to acquire a more extensive understanding. They use existing knowledge as a foundation on which to build new knowledge. The reader is in an active meaning-making role. This

approach gives power to the reader. Comprehending involves the reader, the text, and the context (Granville, 2001). The efficiency with which readers use their schema to gain understanding contributes to the fluency with which they read. The reader actively constructs meaning as they interact with the text. The proficient reader does not decode but selects the most productive cues to predict text that will follow. Schema provides the structure on which comprehension is formed (Tompkins, 2006; Granville, 2001; Lapp, Fisher, & Grant, 2008; Fuchs et al., 2001).

Piaget described learning by students to be an ongoing occurrence between cognitive structures (schemata) and the interaction and adaptation to the environment. New information is organized with prior knowledge. The personal connection made with the text plays an important role throughout the reading process. Proficient readers actively search for and construct meaning in a fluent manner (Tompkins, 2006). The schemata that students possess can be the foundation to link new ideas and expand knowledge. Concept development is organized around schema and includes not only semantic knowledge, but also associations of time, place, context, and emotion. The speed of encoding and retrieval of information from memory allows the reader to be proficient and fluent (Fresch, 2008; Kuhn, 2003; Winters, 2002).

The reader's prior knowledge about the topic enables compensation for poor word-level skills. Low-level readers are less able to employ automatic word decoding. Because of a lack of experience in using a decoding process, compensation is made by the reader to attempt a different strategy employing the meaning of words. The focus shifts from decoding the words to guessing words which would make sense in the context of the passage. The reader uses a combination of text and schemata in this process. The

focus shifts from letters to words to meaning or from meaning to words and then letters. These processes take place interactively with the text. This model supports the teaching of reading strategies in addition to decoding skills (Stanovich, 2000; Rasinski & Mraz, 2008). Teachers apply the interactive theory when they activate students' background knowledge before reading, emphasize comprehension through conversation, utilize reading logs, and use vocabulary word walls (Routman, 2003).

Theory of Expectancy

The theory of expectancy is also known as the two-process theory of expectancy. This provides an alternate suggestion as to why comprehension is labored for some readers. Posner and Snyder (1975) proposed that readers have an automatic-activation ability which takes control when encountering difficult words. In order to understand a passage, the reader must be able to attend to the meaning of the words as opposed to focusing on sounding them out. The theory proposes, for the first process, that the reader, after seeing a word, gains understanding automatically from the overlap of the meaning with the upcoming words. The other words within the sentence activate the memory and enable the reader to connect the word with a semantically known context. The reader then relies on this context to aid in the prediction of upcoming words. By knowing some of the words in the sentence, the reader can make a good guess as to the unknown word. Within strong readers, this process is automatic and quick, but for poor readers the sporadic guessing of words could prohibit the comprehension process. The second process differs in that the reader is so focused on individual words that there is no room for contextual attention (Adams, 2000; Fuchs et al., 2001).

Curriculum Based Measurement (CBM) and Instructional Decisions

The Curriculum Based Measurement (CBM), also known as a General Outcome Measure (GMO), was developed in the late 70s by professor Stanley L. Deno and a research team from the University of Minnesota. The goal was to develop assessments that could repeatedly measure student performance over time and be sensitive enough to evaluate instructional effects. The intent of the measure was to provide special education teachers with a tool that could be used to appraise student response to academic interventions and evaluate the effectiveness of their instruction. Validity and reliability were established through a federally funded, six-year empirical research and development program by the Institute for Research on Learning Disabilities at the University of Minnesota (Deno, 2003).

In the late 80s, CBM scores began to be associated with systematic screening, eligibility, and diagnostic decisions concerning students with academic weaknesses. Currently, CBMs are used to support problem solving in making educational decisions and evaluating intervention strategies for students who are classified as at-risk. They provide data to help with decisions concerning referral, screening, classification, entitlement, instructional planning, and progress monitoring. CBMs should not be confused with curriculum-based assessments (CBA) which is classroom-based instruction used by teachers to evaluate what students have learned. CBAs are not designed to be used frequently and repeatedly (Deno, 2003). CBMs however, are sensitive to a student's growth in basic skills. Recent developments with CBM have generated evidence to support utilizing assessment materials from sources other than a particular school's curriculum. This allows for the standardization of assessment procedures. Data can be

used by teachers and schools and school districts to make instructional decisions. States are also using CBMs to guide instruction toward the goal of proficiency on statewide standards-based assessments (Christy & Silberglitt, 2007; Sibley, Birve, & Hesch, 2001; Shapiro, Keller, Lutz, Santoro & Hintze, 2006; Deno, 2003; Deno, 2003).

The *Teaching Reading Sourcebook, Second Edition* describes CBM as an assessment tool to determine competence in the academic areas of reading, spelling, mathematics, or writing. It requires standardized instructions and contains reading passages that are timed, rules for scoring the passages, and report forms on which to document scores. It is designed to mirror the curriculum that students are being taught. The scores of the CBMs can be collected at one point in time to compare students to normative standards or annually to measure academic growth over years. The oral reading portion of the CBMs requires students to read aloud from a passage for one minute, while the scorer records the number of words read correctly (Honig, Diamond, & Gutlohn, 2008; Fuchs & Fuchs, 2004).

CBMs offer three features that distinguish them from other classroom assessments. First, they are fluency-based, which means that little time is required to respond to test stimuli. Second, the score is an indicator of overall competence in the subject area. The passage is developed based on end of the year difficulty and requires the student to utilize a multifaceted performance. Third, they allow for improvement within the academic year. The CBMs can be administered regularly so that instruction can be modified to reflect academic achievement and growth toward the end of year goal. They can provide a framework for improving student progress and meeting academic expectations toward AYP. CBMs make it possible for schools to provide documentation

and accountability of growth on a continuum of skills. They have been established as reliable and valid measures of achievement in the academic areas of reading, writing, spelling, and mathematics. Both formative and summative assessment data can be derived through CBMs. As summative assessments, they offer a student's level of construct or behavior at a specific point in time to determine screening or eligibility. Formatively, they offer repeated measures to guide instruction and decisions. The CBM tasks are simple to administer and score. They are aligned to instructional goals, and the scores may be demonstrated in graphic form to illustrate the responsiveness of a student to academic interventions (Poncy, Skinner, & Axtell, 2005; Sibley et al., 2001; Silberglytt & Hintze, 2005; Deno, 2003).

Teachers of students who are in need of special education services have had to rely on a "wait and see" approach. Students, in order to qualify for these services, must demonstrate a discrepancy between ability and achievement (Fuch, Fuchs, Compton, Bouton, Caffrey, & Hill, 2007; Busch et al., 2007). Most often these discrepancies do not become severe enough until the third grade, thus labeling it as a "wait to fail" model. NCLB requires states to assess students' acquisition of standards beginning in the third grade. This makes earlier identification of at-risk students critical. Students who are poor readers in the first grade continue to be poor readers without intervention (Clay, 2002; Simmons, et al., 2008). CBMs could be used to identify students who may become at-risk and qualify the interventions that support the avenue to their success. Beginning reading interventions focus on prevention of later reading difficulties. Intervention needs to be carefully designed, so it is strategic, intensive and timely. Children who demonstrate deficiencies in reading during kindergarten and first grade require intensive and

systematic instruction as well as frequent evaluation (Coyne, Kame'enui, Simmons, & Harn, 2004). The goal is to provide adequate instruction and limit the number of referrals to special education. The revised Individuals with Disabilities Education Act (IDEA) suggests that schools may use the Response to Intervention (RTI) approach (Busch et al., 2007; Lose, 2007). By utilizing RTI, schools can give consideration to preventing reading difficulties when they identify students who may struggle with reading, plan instructional goals for success, and document changes in instruction.

RTI proposes a three tier model which executes interventions and examines data to inform instruction. The first tier involves administering a CBM to the entire population of students. Tier two includes the students that scored below the normative benchmark established by the CBM. Students in this tier receive academic interventions in smaller group settings and are assessed often to reveal changes in performance. Adjustments are made in instruction based on the result of the data. The intervention offered at this level is intensive and thorough. The most intensive level, tier three, includes those students that do not make adequate progress at tier two. This level includes setting individual goals and continuous monitoring of progress. RTI requires that students are monitored more frequently and that performance is documented. Also, it requires that interventions are based on students' needs, scientifically supported, and implemented with fidelity. If not, then the RTI process is invalid (Fuchs, et al., 2007). Students not making improvements in tier three may warrant special education services. Utilizing CBM allows educators to examine scores and set appropriate goals for students (Barnett, Elliott, Graden, Ihlo, Macmann, Nantais, & Prasse, 2006; Busch et al., 2007; Lose, 2007; Reilly, 2007; Simmons, et al, 2008).

Dynamic Indicators of Early Basic Literacy Skills (DIBELS)

University of Oregon's Roland Good III and Ruth Kaminski authored educational research on a series of formative assessments in the design of CBMs in an outcomes-driven model. The assessments were named Dynamic Indicators of Basic Early Literacy Skills (DIBELS). They were intended to identify students who need additional support in early reading skills, to evaluate growth in acquisition of early skills, and to evaluate modifications made in instruction. Similar to CBMs, DIBELS measures were designed to be fast (one to three minutes per subtest), easy, efficient to administer, and sensitive to student growth. They were not intended to be used as comprehensive, nor diagnostic, but rather, as academic well-being indicators. DIBELS developments were implemented in response to concern over reading failure as reported by the National Assessment of Educational Progress and the National Reading Panel (2000). The measurements assess early literacy pre-reading skills such as phonological awareness and alphabetic understanding. They consist of four subtests including Letter Naming Fluency, Initial Sound Fluency, Phonemic Segmentation Fluency and Oral Reading Fluency. These subtests help to assess the foundations of the essential components of reading instruction identified by the National Reading Panel (2000). DIBELS are fluency-based measures designed to identify students who may be at-risk in reaching benchmark goals (Good, III, Simmons, & Kame'enui, 2001; Good III, Gruba, & Kaminski, 2002; Moats, 2003; Hintze, Ryan, & Stoner, 2003; Kame'enui, et al., 2006; Hagan-Burke, Burke, & Crowder, 2006; Rouse & Fantuzzo, 2006).

The general population of students is assessed three times per year with the benchmark assessment. The initial screening, done in the fall, identifies those students

who score below the benchmark. Those children are identified as students who may be at-risk for not achieving end of the year reading goals. DIBELS data can be used to identify struggling readers, evaluate the instructional strategies used for remediation, and validate the need for support. The measures were orchestrated to enable teachers to match the needs of students with the best instructional reinforcement. The data compiled from the DIBELS measures can be used to determine the effectiveness of an intervention in a RTI model (Moats, 2003; Hintze, et al., 2003; Hagan-Burke et al., 2006; Dynamic Measurement Group, 2007).

Research studies (Hintze, et al., 2003; Hagan-Burke et al., 2006; Rouse et al., 2006) have contributed to the validating literature of DIBELS as technically adequate sets of measures. The utility of using DIBELS as tools to identify at-risk students was studied in Arizona (Taylor, 2004). The results add to the literature which supports DIBELS as efficient and effective measures. The authors of DIBELS advertise that they are designed to be valid, reliable predictors of reading skill. A study in Oregon examined the validity of DIBELS to predict preschool and kindergarten reading ability one year later. The DIBELS scores were able to predict the reading ability of these students for all reading measures (Johnson, 1996). Other studies have compared CBM assessments with the accuracy of teachers' judgments of reading comprehension as well as with the predictive validity of Early Literacy Individual Growth and Development Indicators (EL-IGDI). Findings revealed that word callers (students who decode word-by-word) did not read as well and scored lower on comprehension measures than their teachers had predicted. These studies add to the growing body of research that CBM-type assessments are valid measures of general reading achievement (Missal, Reschly, Betts, McConnell, Heistad,

Pickart, Sheran, & Marston, 2007; Hamilton, & Shinn, 2003).

The Doubting of DIBELS

Not all researchers find value in DIBELS. The measures, by nature of their development and implementation as approved Reading First assessments, have drawn condemnation from reading scientists. DIBELS have been blamed for creating the literacy gap that it was designed to decrease (Tierney, 2006). The NRP narrowed the view of reading by its identification of the five components of reading success. The Reading First Initiative approves DIBELS as research-based assessments. Scores are scrutinized by districts and states for demonstration of progress. Many reviewers believe that DIBELS can become the curriculum that drives teaching. Increasing scores on the subtests coerces teachers to teach their students to master the subtests, thereby, giving the appearance of improved reading ability (Pearson, 2006; Tierney, 2006; Goodman, 2006).

Critics of the DIBELS measures have concerns that they may mispredict reading performance through the over-zealous use of the word *fluency*. It is used to describe each measure (initial sound fluency, letter naming fluency, phonemic segmentations fluency, and oral reading fluency). Researchers argue that because the NRP focused on these few components of reading and mandated controlled practice (heavy phonics) and assessment, teachers teach to the test (Tierney, 2006; Wilde, 2006). Reading is the ability to identify words while constructing meaning (comprehension). The prominence of DIBELS is on speed not comprehension. The reading process for beginning readers is different because they are learning to decode. The measures are designed to be fast, one-minute measures. The focus is on reading rate rather than expression or meaning (Rasinski & Lenhart, 2008). The timed tests present problems for researchers. The

emphasis is more about speed and less about accuracy. DIBELS send a mixed message that reading can present information, but it must be done quickly, which is confusing to beginning readers (Goodman, 2006; Pearson, 2006).

Scientists have scrutinized the claims that DIBELS are a good predictor of performance on state high-stakes assessments in reading. DIBELS Oral Reading Fluency scores were compared to the Alabama SAT 10 Reading Comprehension subtest. The purpose of the study was to compare the two tests and determine if there was a correlation between the two. The findings showed that there was a moderate correlation. It was not considered a strong predictor, and many of the students identified as at-risk in the first grade remained in the intensive group (Seay, 2006). The DIBELS website identifies two studies (Buck & Torgesen, 2003; Wilson, 2005), in Florida and Arizona, as evidence of predictability. After closer investigation of the findings, the critics found that the measures aren't predictive for all students, only those who are the strongest or weakest readers. The students who are middle-of-the-road, those who are considered strategic, may or may not be identified. Those students can be misidentified and be subjected to sub-skills and strategy training in lieu of quality literature. The low cost of DIBELS precludes school districts to opt out of using more costly, diagnostic assessments which provide more details about academic deficiencies (Wilde, 2006). Critics also found that the even though the authors claim the skills build upon each other, success on one subtest does not predict success on the next subtest (Manning, Kamii, & Kato, 2006).

Similar Studies

The relationship between reading fluency and comprehension has received more emphasis since the NRP published their report. The authors of DIBELS have marketed these assessments as tools which can be used to screen for reading difficulties, to monitor progress of interventions for struggling readers and as indicators of proficiency on state tests. This section of the review of literature describes five studies which compared the use of DIBELS as indicators of performance on end of year tests and state assessments.

The DIBELS ORF median scores of thirty-eight third grade students from a school in Buncombe County were compared with their scores on the North Carolina end of grade assessments. The end of year assessment consisted of passages for the students to read as well as multiple-choice questions about the passage. The assessments were given approximately one week apart; therefore, the results were considered a correlation rather than a prediction of proficiency. The researcher found that the correlation was stronger for those students who scored over 100 correct words per minute (cwpm), and weaker for those who scored less than 69 cwpm on the DIBELS ORF (Barger, 2003).

A similar study compared the DIBELS ORF median scores of third-grade students with the Arizona Instrument to Measure Standards (AIMS). The AIMS was a multiple-choice test to measure grade-level reading proficiency highlighting comprehension. The purpose was to establish the ability of the DIBELS ORF to determine a correlation with the AIMS. The results showed a positive correlation between students with higher levels of fluency and the state test. Students who were deemed at-risk on the ORF measure did not meet proficiency. The study determined that the ORF scores could be used to determine which students, in the third grade, would be

likely to meet proficiency as well as those students who would be quite unlikely to meet proficiency on the state test for Arizona (Wilson, 2005).

Third grade scores from the comprehension portion of the Florida Comprehensive Assessment Test –Sunshine State Standards (FCAT-SSS) were compared with third grade DIBELS ORF median scores. The purpose of this study was to determine if the DIBELS ORF measure would be predictive of achievement in comprehension on the FCAT-SSS. Data for this study was from thirteen different schools and included 1102 students. The fluency scores and the FCAT-SSS scores were obtained from the same students approximately one month apart. The study indicates that the DIBELS ORF scores accurately predicted the proficiency level on the FCAT-SSS for those students who met proficiency on the ORF measures; but it did not accurately predict proficiency for those students who were below proficient on the ORF measure (Buck & Torgesen, 2003). Some of the students passed the FCAT-SSS even though they did not meet proficiency on the ORF.

The DIBELS ORF scores of a group of third grade students were compared with the scores from the comprehension portion of the Colorado State Assessment Program (CSAP) in a research study in 2002 for the purpose of utilizing DIBELS ORF as a predictor of placement levels. The results of this study indicated that for students scoring proficient and advanced proficient on the DIBELS ORF measures and for students scoring unsatisfactory and partially proficient, the ability to predict was high. For those students who scored in between the lowest level and the high level, the ability to predict was less defined (Shaw & Shaw, 2002).

Fourteen schools in the Reading First Program in the State of Delaware were the

subjects used in a similar comparison study which included comparing the third grade DIBELS ORF median scores with the reading portion of the Delaware Student Testing Program (DSTP). The study involved the winter ORF score from 852 students as well as the DSTP reading score administered in the spring. The results indicated a significant correlation between the scores. Students who demonstrated proficiency on the ORF met achievement levels on the DSTP. Students who were not proficient on the ORF, as well as those students classified at some risk, may or may not have shown proficiency on the DSTP. The study helped the researcher to identify further questions for research with the students involved. The researcher questioned why the DIBELS ORF was a better predictor of the reading portion of the DSTP for Hispanic students. Also needing further research was the investigation as to why the majority of false positive cases were African American. Most notable was the question as to why the scores of certain students correlated more than other students (Uribe-Zarain, 2007).

Fluency and High-stakes Tests

The ability to read and comprehend is considered critical to individuals in preventing social and economic disasters. Many view literacy achievement as the skill that could alter lives. Reports such as *A Nation at Risk* in 1983 contributed to the public doubt and scrutiny of the education system. The business community felt that workers were unprepared in complex literacy skills necessary for a global economy. Government officials believed that educators were too close to the internal debate over the best way to teach reading to be unbiased. The federal government involvement with the passing of legislation such as NCLB in 2002 required the states to create standards-based education along with assessments to measure student learning of the standards. Standards-based

reform has become the main focus of education. The assertion of the reform was that if states offered challenging standards for all students, aligned assessments to the standards, and demanded accountability, students would learn. The premise was that testing would drive teaching and learning. The assessments are now considered high-stakes because of the consequences imposed by the government on states and schools that do not make Adequate Yearly Progress (Buly & Valencia, 2002; Reutzler & Mitchell, 2005; Yeh, 2006; Assaf, 2006).

Districts are required to administer local and state standard-based achievement tests to gather performance data to demonstrate accountability. Policy makers are required to make decisions which may necessitate teachers to abandon beliefs and deny professional experience. Educators could respond with low-level, drill-and-skill instruction, cover just the material required by standards, and/or become overwhelmed with accountability pressures. The balance and quality of the curriculum is defined and narrowed by fearful teachers. Students who fail to make the benchmarks are required to take additional assessments. Classroom teachers are observed and evaluated based on the fidelity with which they cover the curriculum. Some states are using results of benchmark assessments to determine promotion of students to the next grade. There is concern that high-stakes testing has the power to undermine high quality teaching and student attitude. Policy is also blamed for redesigning classroom instruction into basic skill instruction in decoding and constricting curriculum with test preparation. The higher-level thinking activities have been replaced by judicious skill instruction in decoding and comprehension (Buly et al., 2002; Assaf, 2006; Yeh, 2006). The American Educational

Research Association (AERA) recommends that high-stakes tests meet the following conditions (Winograd, Flores-Duenas & Arrington, 2003):

- Decisions, which affect student lives, should not be based on one score.
- Opportunities should be available for both teachers and students to learn and practice standards.
- Tests must be valid for intended use.
- There should be notice of negative side effects based on testing.
- Scores and levels should be validated measures.
- There should be security of remediation for those who need it.
- Tests should be sensitive to language differences.
- Testing programs should make sure that the score reflects the construct rather than the disabilities of students.
- Tests should be formatted to with rules that allocate for true comparisons of scores.
- The test scores should be reliable and accurate for their intended purpose.
- The intended and unintended effects of testing should contain an on-going evaluation process (p. 210).

Stakes are the formal consequences for students, teachers, and schools based on the scores on the state test. There can be negative impacts on teaching and learning when stakes are high and the pressure to raise scores is high. Likewise, there can be positive impacts when stakes are high but the pressure to raise test scores is low. A positive atmosphere can occur when the education community is refocused to accept test scores as an indicator of learning. Districts can be taught to utilize the scores in making

improvements in instruction while maintaining a balanced curriculum. Rapid assessments, like CBM and DIBELS, help to foster balanced instruction and offer positive uses of test results. They allow for rapid diagnostic information about student progress without the pressure of failure. They provide for the identification of students who are likely to be successful or for those who are likely to fail statewide assessments. Information relevant to student achievement can be charted toward acquisition of instructional goals. Schools need assessments which can be used to screen students who are likely to fail state tests. Assessments that are focused and comprehensive provide for early identification and prevention of students being labeled as learning disabled. Changes to individual learning programs help to pinpoint needs and offer support at critical learning stages (Menzies, Mahdavi, & Lewis, 2008). CBM has been determined to have a moderate to strong relationship to the results on standardized tests. It is considered to be an effective screening tool that predicts outcomes on statewide measures as well as a support for monitoring for adequate progress in an RTI model. Screening allows educators to identify those students who may be at-risk for reading problems and allows for a more diagnostic profile where warranted (Honig et al., 2008; Shapiro et al., 2006; Yeh, 2006; Christ & Silberglitt, 2007; Sibley, Biwer, & Hesch, 2001).

Fluency Intervention Practices

Fluency was once thought to be the end result of accurate word identification skill coaching, so the instructional focus was on sight word recognition, the dissection of words into their sound parts, and vocabulary development (Routman, 2003). Not only does fluency involve accurate word decoding, but also the rate and expression in which one reads helps to determine if the process is fluent. Recently, the report of the NRP has

identified fluency as one of the five components of effective reading instruction. Fluency allows students to interact with the text. It provides the reader the occasion to demonstrate skill and receive feedback from the listeners. It frees the working memory to concentrate on comprehension of the text. When teachers model fluent reading, it gives their students the opportunity to examine the elements of expression (prosody) and develop comprehension strategies in a non-threatening atmosphere (Richards, 2000; Rasinski, 2006).

The development of fluency is considered critical to the advancement of students' literacy progress and understanding. Students who struggle with fluency do not have the mental energy to attend to comprehending the content of the text (Therrien, Gormley, Kubina, 2006). The lack of progression may also cause a dislike for reading and perpetuate an attitude of failure which compounds the aversion to practice. The emotional well-being of children in the early childhood stages is critical to their attitudes of self-worth. A study that examined the emotional development of how pre-readers viewed themselves as readers using wordless picture books suggests that struggling readers may view themselves as different early on. The findings suggest that how young children value themselves as readers plays an important role in academic posturing. Attitudes that reading is too difficult present a challenge to overcome. Positive learning experiences between students and teachers support both social and emotional development, thereby assisting in developing the whole child (Bagdi & Vacca, 2005; Lysaker, 2006).

It is imperative to facilitate fluency at a young age (Stayter & Allington, 1991). Fluency can be influenced by the students' ability to comprehend, the number of words that can be recognized by sight, how quickly the student can decode, the purpose for

which they are reading, the vocabulary, and the motivation to read the passage. Suggesting that there was a link between fluency and comprehension may be a new concept to some teachers (Hasbrouck & Tindal, 2006). The NRP also discovered that teachers were deficient in their knowledge of reading fluency and provided instructional strategies to support its improvement. The area of reading fluency, in older students, may also be considered the most difficult skill to remediate (O'Connor, White, & Swanson, 2007). As students progress through grades, the gap between readers and nonreaders widens. This phenomenon has been called "The Matthew Effect." This phrase was coined by Keith Stanovich in 1986. The meaning is drawn from the Book of Matthew in the Bible. It comes from the verse: "For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath" (25:29). Readers have the skills to read and do so abundantly, whereas weak readers don't have the skills, so they avoid reading as much as possible (Stanovich, 1993; Honig et al., 2008). The National Reading Council reported that consistent practice in the reading of passages was the best strategy for building automaticity.

The important components of reading fluency are accuracy, automaticity and prosody. Rasinski (2006) cautions teachers that these components must be taught together and not as separate entities. It is important to note that it is possible to teach a student accuracy, automaticity, and prosody in a way that the student will enjoy and learn. Reader's Theater has been suggested as one method that can be used to teach each of the elements of fluency (Rasinski, 2003; Rasinski, 2006). Other interventions that have been proposed are: repeated readings in which students practice reading short passages over and over until a desired level of fluency has been reached (Therrien, et al., 2006;

O'Connor, et al., 2007); question generation in which the teacher indicates the purpose for reading (Therrien, et al., 2006); continuous reading in which students read different passages (O'Connor, et al., 2007); read alouds in which the teacher models fluency and prosody; choral reading supported by groups of students; and paired reading (orally and simultaneously) with a partner (Rasinski, 2003).

Students can improve comprehension abilities when provided with strategies for reading. Teachers can encourage students to choose the least disruptive method for understanding a passage. They may choose from strategies such as slowing the reading rate, pausing to reflect on a passage, re-reading in order to process, reading aloud, sounding out unfamiliar words, and jumping over to gain meaning from context. Students should be exposed to fluent oral reading by teachers during read-aloud, direct, explicit instruction in phonics skills and opportunities for fluency practice with repeated readings. These research-based fluency approaches are considered strategies that can influence improved reading skills (Walczyk et al., 2007; Rasinski et al., 2003; Kiley & Jensen; 2006; Menzies et al., 2008; Otaiba & Fuchs, 2006).

Summary

The purpose of this chapter was to place this study in the perspective of current research practice. The emphasis on testing cannot be thoroughly understood without taking a historical look at reading. Teaching practices are influenced by research and political pressures, and it is necessary for the researcher to examine this information as a foundation for investigations (Fresch, 2008). Next, the topic of reading fluency was introduced and positioned within the framework of the subject of reading. Specifically, what does the process of reading fluency have to do with the improvement of reading

comprehension, and can oral reading fluency measures be used as indicators of its development? Lastly, reading fluency practices and the instructional recommendations for advancement were reviewed. The review of literature provides this study with the situation for plausibility.

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this quantitative study was to determine whether there is a relationship between first grade scores on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency (ORF) and performance on the Alaska Standards Based Assessment (SBA) in Reading and whether scores on the DIBELS ORF can predict scores on the SBA. The research context, the participants in the study, the instruments, the procedures used, and the analysis of the data are described in this chapter.

The General Perspective

This quantitative study analyzed the predictability of the first grade DIBELS ORF scores on the reading scores of Standard Based Assessments. Data was collected including scores over a four year period, and the following statistical analyses were performed: the mean, standard deviation, frequency, and Pearson's r . This study encompasses the following research question:

Is there a relationship between the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Score of first grade students in Elementary School B and the Alaska Standards Based Assessment in Reading?

Statement of Hypotheses

1. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in the years 2003-2006 and their

- scores on the third grade Alaska Standards Based Assessment scores in Reading.
2. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2003 and their scores on the third grade Alaska Standards Based Assessment scores in Reading.
 3. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2004 and their scores on the third grade Alaska Standards Based Assessment scores in Reading.
 4. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2005 and their scores on the third grade Alaska Standards Based Assessment scores in Reading.
 5. There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2006 and their scores on the third grade Alaska Standards Based Assessment scores in Reading.

Research Context

This study took place in a small suburban school in the Matanuska-Susitna Borough in Alaska. It is located 42 miles from Anchorage. The town was first founded by Athabascan-Dena'ina Indians in the pre-1900 era as a highway village. In 1917 it was homesteaded and developed as a farming community. Today, the main industry is farming along with the wholesale distribution of farm products. In 1990 the population

was approximately 2000 and has risen to the latest figure of approximately 3000. The majority of the residents are Caucasian with an Alaska Native population of about 3.6%. Most of the employable residents work in the local towns within the borough or in the city of Anchorage. The U.S. Census Bureau estimates that 9.8% of the families are below the poverty line and the rate of unemployment is at 8.9% (Alaska Division of Community Advocacy, 2008). There is one elementary school within the community, and middle and high school students are transported to school in the nearby local town.

Alaska uses a two-tiered system of decentralization (state/borough). The state is divided into 16 boroughs. There are 53 school districts in the state of Alaska with about 500 schools. The schools vary in sizes ranging from 2000 students in a single city school to 20 students in one school within rural areas (Alaska Teacher Placement, 2008). The head of the Department of Education is appointed by a state school board with final approval by the governor. The state school board of seven members sets education policy including academic content and performance standards. The state is actively participating in the standards-based reform process. Currently there are content standards for 12 subject and skill areas, age-graded performance standards, and benchmark assessments in grades three, six, and eight. Students participate in a kindergarten/first grade profile, benchmark assessments (SBA), the Terra Nova, and The High School Graduation Qualifying Exam (Alaska Department of Education and Early Development, 2008).

The Matanuska-Susitna school board is elected by the constituents of the borough. It operates 38 schools (15 elementary) within a geographical area approximately the size of the state of West Virginia. There are five middle schools and five high schools. There are about 947 teachers, and the student/teacher ratio is 17/1. The total number of students

within the borough is approximately 16,000 (11% Alaska Native) with a high-school dropout rate of about 4.3%. According to the most current report (2007) from the National Assessment of Education Progress (NAEP), Alaska students performed below the national average in reading. In 2003, 42% of Alaska schools met targets for AYP; in 2004, 58.8% met targets; and in 2005, 59% of schools met the target. Currently, the Matanuska-Susitna School District has not met all requirements to have made AYP (Alaska Department of Education, 2006; Alaska Department of Education, 2008).

The school in this study will be identified as Elementary School B. It opened in 1980, serving approximately 475 kindergarten through sixth grade students. Sixth grade was moved to the middle school in 1988, and the school now serves preschool through fifth grade with approximately 310 students. Enrollment fluctuates between 280 and 310 students. Attendance in kindergarten is not mandated by the state. The school personnel consists of: an administrative staff (principal, school nurse, and three administrative assistants); a librarian; a physical education teacher; a part-time music teacher; 15 classroom teachers; two part-time literacy coaches; a certified Title One teacher; two reading tutors; two part time speech professionals; and a special education team of a preschool teacher, two intensive-education teachers, and two resource-education teachers along with two para-professionals. The teaching staff of Elementary School B is characterized as 100% highly qualified, and 50% of them have earned a Master's Degree or higher. The district provides English Second Language/Bilingual, migrant, Indian Education, Special Education, Speech Therapy, Talented and Gifted, Title I, and Special Education self-contained programs to the population based on need. Elementary School B offers basketball, track, and cross-country after-school sports programs and Book Club,

Battle of the Books, Band, and Choir before-school programs. Many students live far from the school and ride the bus for over an hour each way. Not all students take advantage of these programs because of the rural nature of the population. Title I provides opportunities for enrichment through family nights. There is an average of about 33% participation of families in these events.

Student demographics for Elementary School B, at the time of this study, include a population of 306 students from kindergarten through fifth grade. There are 143 female students and 163 male students. Eighty-eight percent are Caucasian, six percent are Alaska Native, one percent are Black, one percent are Hispanic, and less than one percent are Limited English Proficient. Twenty-six percent were identified as special needs students. Approximately 50% of the school population is provided with reduced or free breakfast and lunch (School Action Profile, 2008). Based on the free and reduced lunch percentages, the Title I program is school-wide. The attendance data for the SBA data collection period is found in Table 1.

Table 1: Attendance Trends for Elementary School B

ATTENDANCE TRENDS		
Fiscal Year	Attendance	Tardiness
2004-2005	94.1%	3%
2005-2006	98%	3%
2006-2007	81.5%	7.2%
2007-2008	93.6%	3.28%

The Kindergarten/First Grade Profile, DIBELS, AIMS-Web, Measure of Academic Progress (MAP), SBA, and Terra Nova are used to monitor progress and assess students. Since AYP status has been recorded, Elementary School B has not consistently met the requirements for year-to-year progress. The major concerns are to identify students who may be at-risk for reading failure and to improve the percentage of students acquiring the proficiency level on the Alaska SBA. Title I requires Elementary School B to identify students who may be at-risk for reading failure as soon as possible and intervene with explicit and systematic instruction utilizing research-based practices. The school has adopted the Response to Intervention model. Students are screened with the DIBELS assessment. Based on scores, students are identified as intensive, strategic and benchmark. Those students who score at the intensive level are identified as needing intervention. The intervention process involves planning instruction based on student academic need and setting a goal for success. The quality of instruction, its intensity, and progress monitoring to determine the effectiveness of the instruction are implemented and scrutinized.

The Research Subjects

This study was designed to determine whether a first grade oral reading score can be used to predict academic achievement on the Alaska SBA in reading. The study requires first grade DIBELS ORF data from years 2003-2006. The SBA data encompasses scores obtained in the spring of 2005, 2006, 2007, and 2008. The SBA data for third grade from these years was used in the correlation.

The sample subjects for the purpose of this study were students who were assessed with the DIBELS ORF when they were in the first grade and were evaluated by

the Alaska SBA when they were in the third grade. The DIBELS data is archived on the DIBELS database. Data from first grade students over a four year period beginning in 2003 was compared with the same students' third grade Alaska SBA scores. This provides a systematic sample of approximately 124 students for whom archival data, on the school computer database, is available. See Table 2 for the description of subjects, classified by gender and identified by the year of SBA score.

Table 2: Students categorized by Gender and Year

STUDENTS WITH FIRST GRADE ORF AND THIRD GRADE SBA SCORE					
Subjects	2005	2006	2007	2008	Totals
MALE	18	14	16	17	65
FEMALE	16	17	14	12	59

Table 3 relates AYP data for the enrollment and ethnicity of students tested in grade three during the fiscal years involved in the study (Alaska Department of Education, 2008).

Table 3: Alaska SBA Ethnicity of Grade Three Students of Elementary School B

ELEMENTARY SCHOOL B ETHNICITY OF GRADE THREE						
Fiscal Year	Caucasian	Alaska Native	LEP	Black	Hispanic	Meets AYP
2004-2005	89%	7.27%	1.8%	0%	1.8%	No
2005-2006	90%	8%	<1%	<1%	<1%	Yes
2006-2007	76.4%	15.6%	<1%	0%	<1%	No
2007-2008	86%	9%	<1%	0%	<1%	Yes

Table 4 provides information about the status of Elementary School B meeting Adequate Yearly Progress during the years of the study until the current year.

Table 4: Adequate Yearly Progress

YEAR	SCHOOL MET AYP
2004	YES
2005	NO
2006	YES
2007	NO
2008	YES

Instruments Used in Data Collection

DIBELS

Roland H. Good III and Ruth A. Kaminski of the University of Oregon developed a series of brief measures (DIBELS) designed to gauge foundational skills related to composite reading behavior. DIBELS provides screening of students who may be at-risk for reading difficulties and progress monitoring for evaluation of intervention practices. DIBELS measures are designed to be given three times during the year: fall, winter, and spring. DIBELS are brief, one-minute assessments in onset recognition fluency, letter naming fluency, phoneme segmentation fluency, nonsense word fluency, and oral reading fluency (Moats, 2003). Using the same CBM passage to test and retest provided reliabilities ranging from .92 to .97. Coefficients ranging from .52 to .91 were established through several criterion-related studies (Good III et al., 2002). Validity and reliability can be verified through the DIBELS Data System website

<https://dibels.uoregon.edu/measures/orf.php#tech>).

Elementary School B has used the DIBELS measures as a screening instrument for eight years. The ORF is administered in the winter and spring (end of the year) of first grade. The first-grade student ORF scores from the end of the year were used in this study. The students are removed from the classroom and assessed by a trained evaluator. The assessments are presented individually between one assessor and one student. Students are shown a total of three, first-grade level passages. The title of the passage is listed at the top of the page presented to the student. The examiner's scoring booklet contains scripted directions, and the passages with the number of words in each row of the passage written to the right of the sentences. Standardized instructions are given to students to read the passages orally. Scoring is determined by a combination of both accuracy and speed. The student is given three seconds to read the individual words. After the time limit has passed, the assessor reads the word and marks it as an error. The examiner counts the words read correctly within the one-minute time frame. The score is the median from the three passages. Proficiency is determined by the following scale. First grade students who read 40 or more correct words per minute are considered at low risk for reading difficulties, those who score 20 through 39 are considered at some risk, and those who score 19 and below are deemed at-risk for reading failure.

Table 5: DIBELS First Grade ORF End of Year Benchmark Goals

END OF YEAR ORF BENCHMARK SCALE	
Status	Scores
At-risk	0-19
Some Risk	20-39
Low Risk	40>

Note: Information was adapted from the DIBELS Data System at dibels.uoregon.edu (2008).

The scores are entered into the DIBELS Data System, a web-based service to which the school subscribes. The data manager enters the scores for the students, and the teachers have access to graphs and reports for instructional planning and evaluation. Data management through the web-based service allows for instructional planning, evaluation, and tracking of individual students, schools, and districts. All DIBELS data is archived on the DIBELS Data System website and the first grade ORF scores used in this study are from spring of 2003, 2004, 2005 and 2006.

Alaska Standards Based Assessment

As stated in Chapter One, the Alaska SBA is administered in a group setting during the spring of the school year. The assessment measures to what extent students are meeting statewide performance standards in reading. The assessment is criterion-based and is aligned with the Grade Level Expectations (GLEs). The GLEs identify specific skills within the content standards. The proficient score represents what students should know of that content area for their grade level. The SBAs measure the performance standards within the strands of word identification skills, forming a general understanding

and analysis of content or structure.

The cut scores are the numeric values given to demonstrate proficiency. They are the lowest number of acceptable responses on the SBA which calculate to the minimum score acceptable to be considered proficient. Proficiency is determined by scoring above and within a set range. Students receive raw scores based on their performance on the SBAs. This represents the number of multiple-choice items answered correctly plus the points earned by the constructed-response items on the reading portion of the SBA. The raw score is converted statistically to a scale score. The Rasch family of measurement model was used to compute scale scores for the SBAs. The range of scores is from a minimum of 100 to a maximum of 600. Students must score at or above 300 to reach proficiency in reading. The SBA is content-based, aligned with the Alaska content standards, and has been determined to have content validity and reliability. The assessments were first administered operationally in 2005 and 2006. Table 5 shows the third grade cut point for both the raw scores and the scale scores for the reading portion of the Alaska SBA.

Table 6: Alaska SBA Minimum Scale Scores for Reading

MINIMUM READING SCALE SCORES FOR EACH PROFICIENCY LEVEL FOR THIRD GRADE ALASKA SBAs		
	Raw Score Cut Point	Scale Score Cut Point
Below Proficient	18	261
Proficient	26	300
Advanced Proficient	46	392

Note: Table Adapted from Alaska Comprehensive System of Student Assessment Technical Report (2006).

Elementary School B students take the Alaska SBA during the spring of each year. The SBA is given during late March or early April to assure that the scores are in the hands of parents by the end of the school year. The district enrolls the students through the Data Recognition Corporation (DRC) in the winter of the testing year. The school receives the testing items the week prior to testing under the direction of a testing coordinator. The test administrator prepares the room for assessment. Each content area is administered on a different day. Reading is administered on the first day of testing. The grade three students are randomly given one of 14 versions of the reading test. The directions for administration of the test are scripted. Students are allowed a five to ten minute break after 40 minutes of testing. The tests are not timed, so the students have the entire test day to finish the exam. The test administrator monitors students to ensure test security procedures are followed, to ensure students work in the correct content area, to prohibit sharing answers, and to ensure bubbles are darkened correctly. The administrator duties also include procedures to collect and secure materials after the completion of the test. Once the entire test (reading, writing, and math) has been completed, the test coordinator secures the tests from grades three, four, and five and packages them for shipping to the district where they are forwarded to the DRC for grading. The test booklets are scanned and scored. The scores are returned to the district and recorded on the district database.

Procedures Used

The implementation of this quantitative study required a preliminary review of

literature. The examination of literature focused on an abbreviated history of reading, the role of reading fluency, a description of relevant theories pertaining to fluency, Curriculum Based Measures (DIBELS) and instructional decisions, fluency and high-stakes testing, and fluency intervention practices.

A letter was submitted to the principal and the school district requesting permission to use the DIBELS ORF scores and the third grade Alaska SBA scores for the correlation. Since the study involved archived scores, and because the researcher used no personal identifiers, there was no need to secure parental permission. The researcher was granted access to the complete database of scores for Elementary School B.

The students who had both the DIBELS ORF score from first-grade and a third-grade SBA score were entered on an Excel spread sheet. The researcher coded the scores and removed identifiers. The key for the coded scores was locked in the school safe separate from the scores. The school identity was also concealed to preserve the confidentiality of the students.

Data Analysis

Archived data from first grade DIBELS ORF was generated by a district-appointed assessment team, and scores were recorded on the DIBELS Data Management Website. Archived data from third grade Alaska SBAs in reading was generated by a scoring agency and recorded on the district data management system, Just Five Clicks. The purpose of this research was to determine if a relationship exists between the two measures, fluency and comprehension.

This quantitative study required a statistical procedure for a correlation to determine a relationship. The Statistical Package for the Social Sciences (SPSS) version

16.0 was used in the analysis. The Pearson's r statistical test was also performed on the combined data from all first grade ORF scores and third grade Alaska SBA scores. The Pearson's r statistical test was performed for each of the hypotheses to determine the relationship. The analyses also include the mean, standard deviation, and frequencies for each of the hypotheses.

Summary of Methodology

This chapter provided the research problem and placed it within the context of the study. The research participants and the environment were also discussed to give the reader insight into the role of assessment in Elementary School B. The discussion also included the instruments used in the research as well as the rationale behind the data analysis that was required to determine the relationship. Chapter Four will present the data analysis that identifies that a relationship exists between Elementary School B's first grade DIBELS ORF scores and the third grade Alaska SBAs scores in reading.

CHAPTER FOUR: RESULTS OF THE STUDY

As stated in Chapter One, the study reported here examined archival data to determine the relationship between first grade students' DIBELS Oral Reading Fluency (ORF) scores and third grade Alaska Standards Based Assessment (SBA) scores in Reading. This chapter is organized by the hypotheses that were investigated through this study. The research involved archival data of first grade students over a four year period in Elementary School B. As stated in Chapter One and again in Chapter Three, this study dealt with the comparison of the scores of two separate assessments and sought to answer the question:

Is there a relationship between the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Score of first grade students in Elementary School B and the Alaska Standards Based Assessment in Reading?

Hypothesis #1: There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in the years 2003-2006 and their scores on the third grade Alaska Standards Based Assessment in Reading.

The number of subjects for this study was 124, and the database of these subjects was used in the analysis of this hypothesis. The data were graphed as a histogram with a normal curve to assess the range and the degree to which the data were distributed normally (Figure 1). Variables were determined to be normally distributed before data analysis was performed. The correlation between the DIBELS ORF scores of the combined years of first grade students of Elementary School B and the Alaska SBA

scores in reading of the combined years of third grade (N=124) was positive and significant ($r = .671$, p (two-tailed) $<.01$ level) (Table 7). This coefficient can be squared to produce the coefficient of determination, $(.671)^2 = .450241$, or 45% of the variance in the SBA score can be explained by the first grade ORF. This indicates a significant, positive correlation revealing that the hypothesis is supported.

Figure 2 reveals this relationship in a scatterplot. The placement of the dots indicates that there is a positive, linear relationship between the two variables. The SBA scale score is shown on the vertical axis and has a horizontal reference line at 300, the score set for proficiency. Students scoring above the horizontal line met or exceeded the Alaska Standards in reading for third grade. The ORF scale is on the horizontal axis with a vertical reference line at 40 words per minute, the benchmark score for proficiency. Students with ORF scores above 40 are considered to be low risk. Students with ORF scores below 40 are considered to have some risk or are considered to be at-risk for reading difficulties. The figure reveals that not all students who fell below proficient on the DIBELS ORF assessment fell below proficient on the Alaska SBA in reading.

Figure 3 is a graphical representation of the first grade scores listed by ORF categories. Out of the 124 first grade students involved in this research, the data shows that ninety-eight point five percent of the students who were classified low risk passed the SBAs in reading, Seventy-seven percent of the students who were classified at some risk passed the SBAs in reading, and Forty-three percent of the students who were classified at-risk also passed the SBAs in reading.

Table 7: Descriptive statistics and correlations for first grade 2003-2006 DIBELS ORF and Alaska SBA in reading

Descriptive Statistics

	Mean	Std. Deviation	N
SBA	3.8106E2	71.84103	124
ORF	58.4839	40.13625	124

Correlations

		SBA	ORF
SBA	Pearson Correlation	1	.671**
	Sig. (2-tailed)		.000
	N	124	124
ORF	Pearson Correlation	.671**	1
	Sig. (2-tailed)	.000	
	N	124	124

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 1: Histograms of 2003-2006 ORF and SBA data

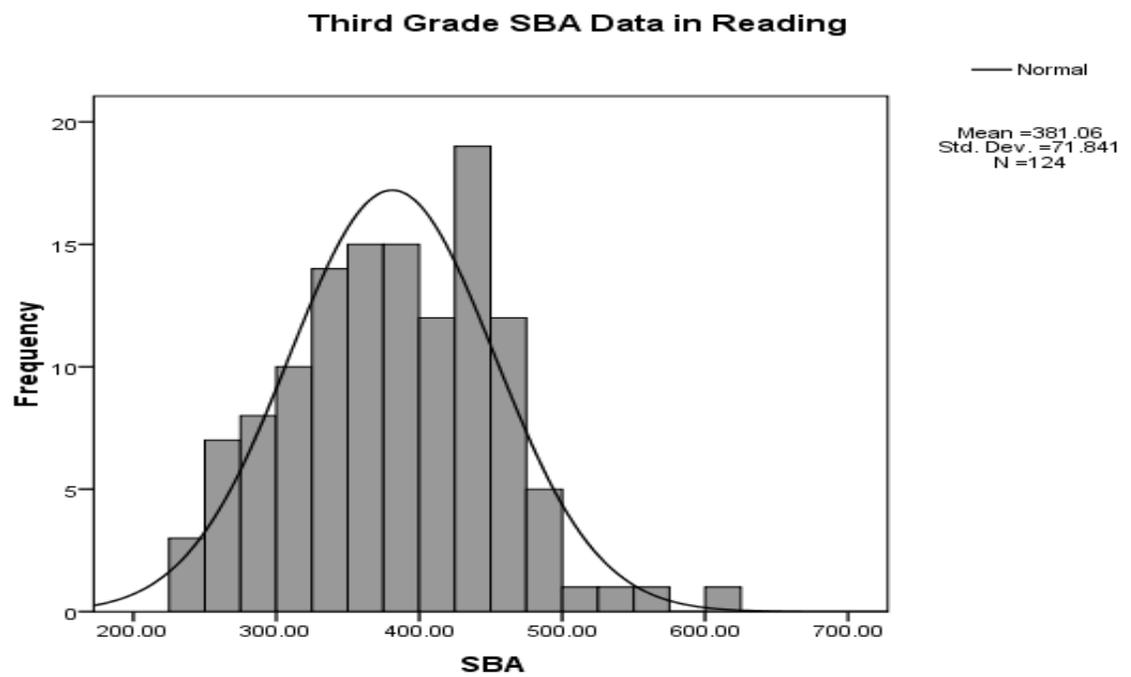
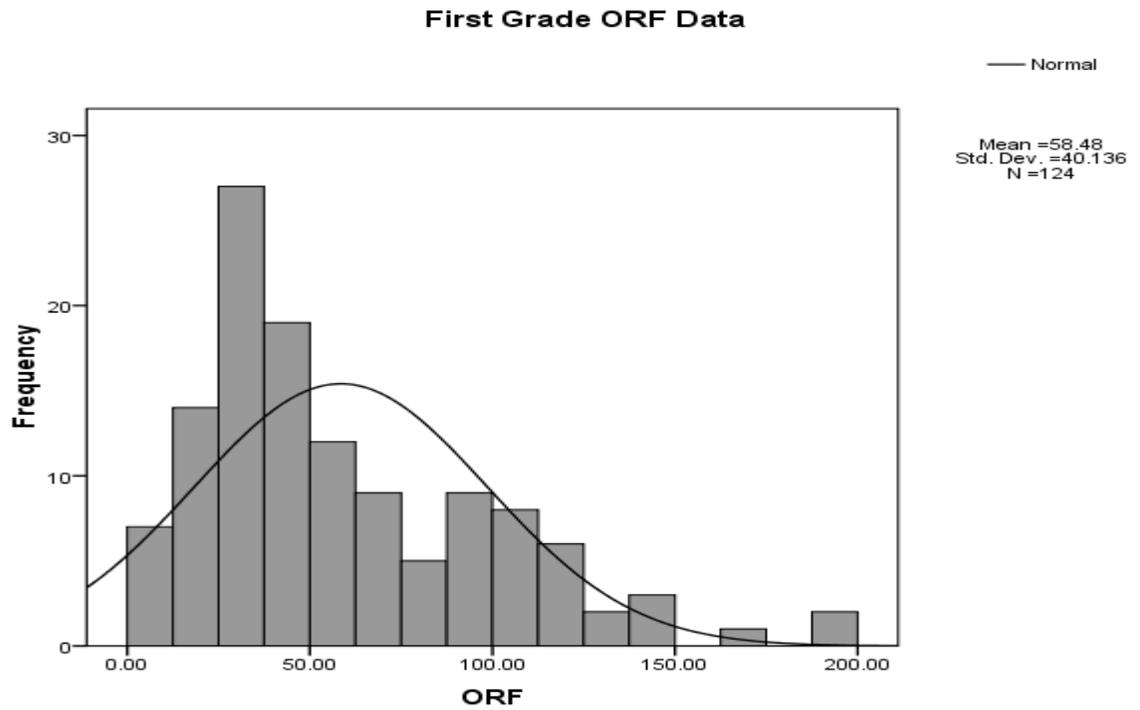


Figure 2: Scatterplot for 2003-2006 DIBELS ORF and Alaska SBA in reading

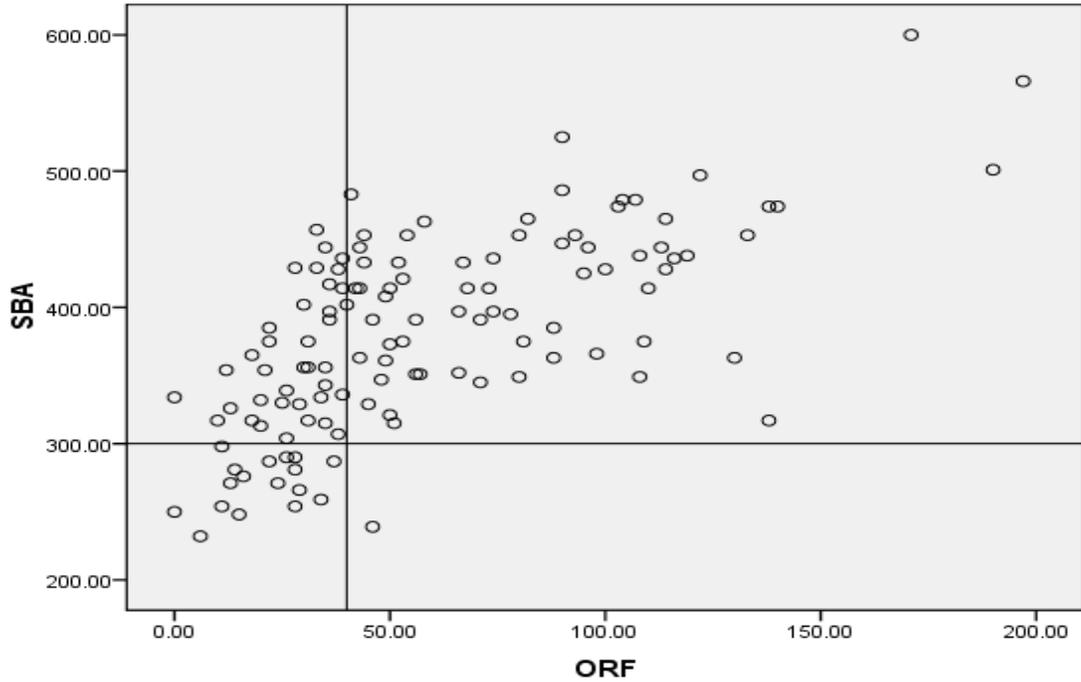
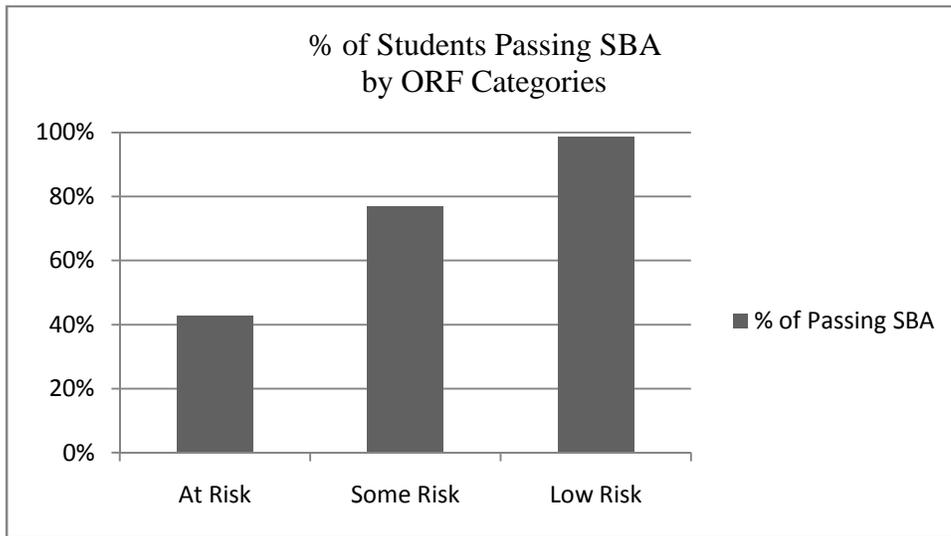


Figure 3: Breakdown of percentage of students passing SBA by ORF categories for 2003-2006



Hypothesis #2: There will be a significant positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading

Fluency instrument as first graders in 2003 and their scores on the third grade Alaska Standards Based Assessment in Reading.

The data were graphed as a histogram with a normal curve to assess the range and the degree to which the data were distributed normally (Figure 4). Variables were determined to be normally distributed before data analysis was performed. This analysis involved 34 first grade students. The correlation between the DIBELS ORF scores of first grade students of 2003 and their third grade Alaska SBA scores in reading was positive and significant ($r = .727, p$ (two-tailed) $< .01$) (Table 8). This coefficient can be squared to produce the coefficient of determination, $(.727)^2 = 0.528529$, or 53% of the variance in the SBA score can be explained by the first grade ORF. This indicates a significant, positive correlation revealing that the hypothesis is supported.

Figure 5 reveals this relationship in a scatterplot. The SBA scale score is shown on the vertical axis and has a horizontal reference line at 300, the score set for proficiency. Students scoring above the horizontal line met or exceeded the Alaska Standards in reading for third grade. The ORF scale is on the horizontal axis with a vertical reference line at 40 words per minute, the benchmark score for proficiency. Students with ORF scores below 40 are considered to have some risk or be at-risk for reading difficulties. Students with ORF scores above 40 are considered to be low risk.

Figure 6 provides the breakdown of students by ORF and SBA performance. Sixty-five percent of first grade students who met proficiency on the ORF met or exceeded proficiency on the reading section of the Alaska SBA. Twenty-four percent of the students that did not meet proficiency on the first grade ORF also met or exceeded proficiency on the Alaska SBA. Twelve percent of the students did not meet proficiency

on either measure.

Table 8: 2003 ORF and SBA Descriptive Statistics and Correlation

Descriptive Statistics

	Mean	Std. Deviation	N
SBA	3.8915E2	76.88840	34
ORF	65.7647	39.41009	34

Correlations

		SBA	ORF
SBA	Pearson Correlation	1	.727**
	Sig. (2-tailed)		.000
	N	34	34
ORF	Pearson Correlation	.727**	1
	Sig. (2-tailed)	.000	
	N	34	34

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 4: Histogram of 2003 ORF and SBA Data

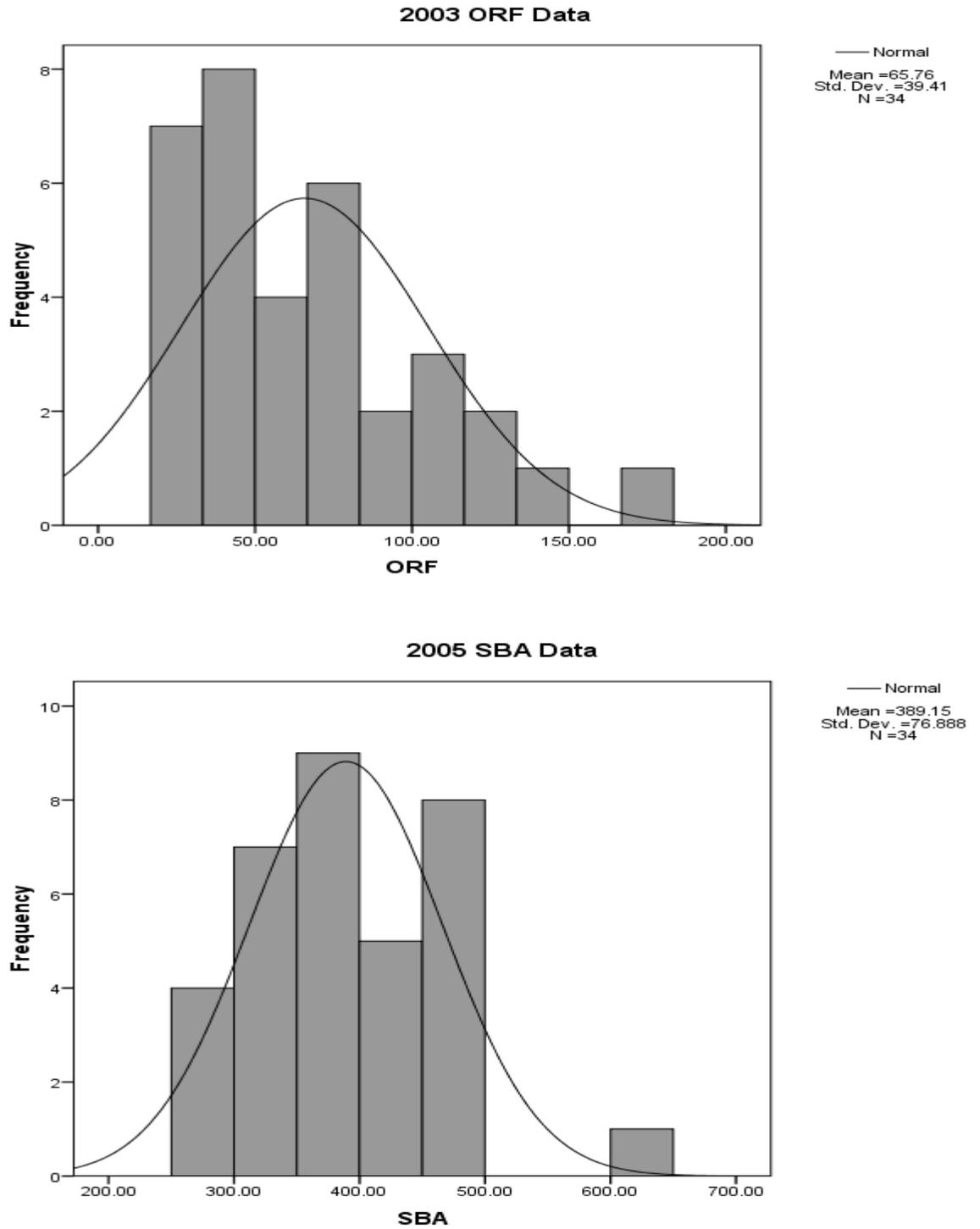


Figure 5: Scatterplot of 2003 ORF and SBA Data

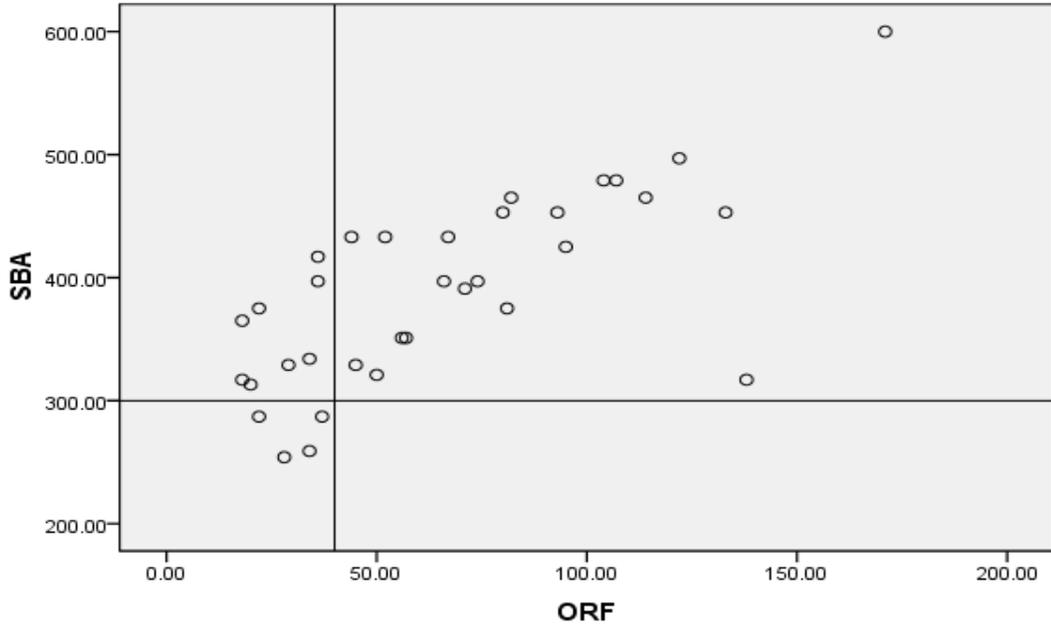
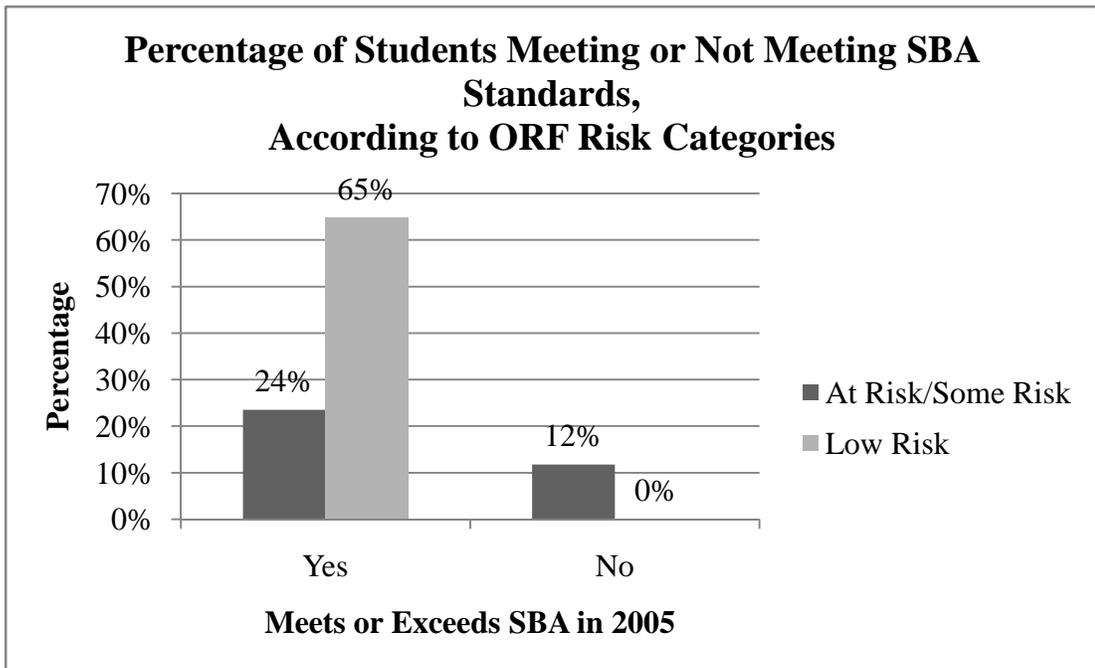


Figure 6



Hypothesis #3: There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2004 and their scores on the third grade Alaska Standards Based Assessment in Reading.

The data were graphed as a histogram with a normal curve to assess the range and the degree to which the data were distributed normally (Figure 7). Variables were determined to be normally distributed before data analysis was performed. This analysis involved 31 first grade students. The correlation between the DIBELS ORF scores of first grade students of 2004 and their third grade Alaska SBA scores in reading was positive and significant ($r = .618$, p (two-tailed) $< .01$) (Table 9). This coefficient can be squared to produce the coefficient of determination, $(.618)^2 = 0.381924$, or 38% of the variance in the SBA score can be explained by the first grade ORF. This indicates a significant, positive correlation revealing that the hypothesis is supported.

Figure 8 reveals this relationship in a scatterplot. The SBA scale score is shown on the vertical axis and has a horizontal reference line at 300, the score set for proficiency. Students scoring above the horizontal line met or exceeded the Alaska Standards in reading for third grade. The ORF scale is on the horizontal axis with a vertical reference line at 40 words per minute, the benchmark score for proficiency. Students with ORF scores below 40 are considered to have some risk or be at-risk for reading difficulties. Students with ORF scores above 40 are considered to be low risk.

Figure 9 provides the breakdown of students by ORF and SBA performance. Fifty-five percent of first grade students met proficiency on the ORF and met or exceeded proficiency on the reading section of the Alaska SBA. Twenty-nine percent of the

students that did not meet proficiency on the first grade ORF also met or exceeded proficiency on the Alaska SBA. Thirteen percent of the students did not meet proficiency on either measure. Finally, three percent of students who met proficiency on the ORF did not meet proficiency on the Alaska SBA.

Table 9: 2004 ORF and SBA Descriptive Statistics and Correlation

Descriptive Statistics

	Mean	Std. Deviation	N
SBA	3.7235E2	79.50411	31
ORF	60.0645	44.52186	31

Correlations

		SBA	ORF
SBA	Pearson Correlation	1	.618**
	Sig. (2-tailed)		.000
	N	31	31
ORF	Pearson Correlation	.618**	1
	Sig. (2-tailed)	.000	
	N	31	31

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 7: Histograms of 2004 ORF and SBA data

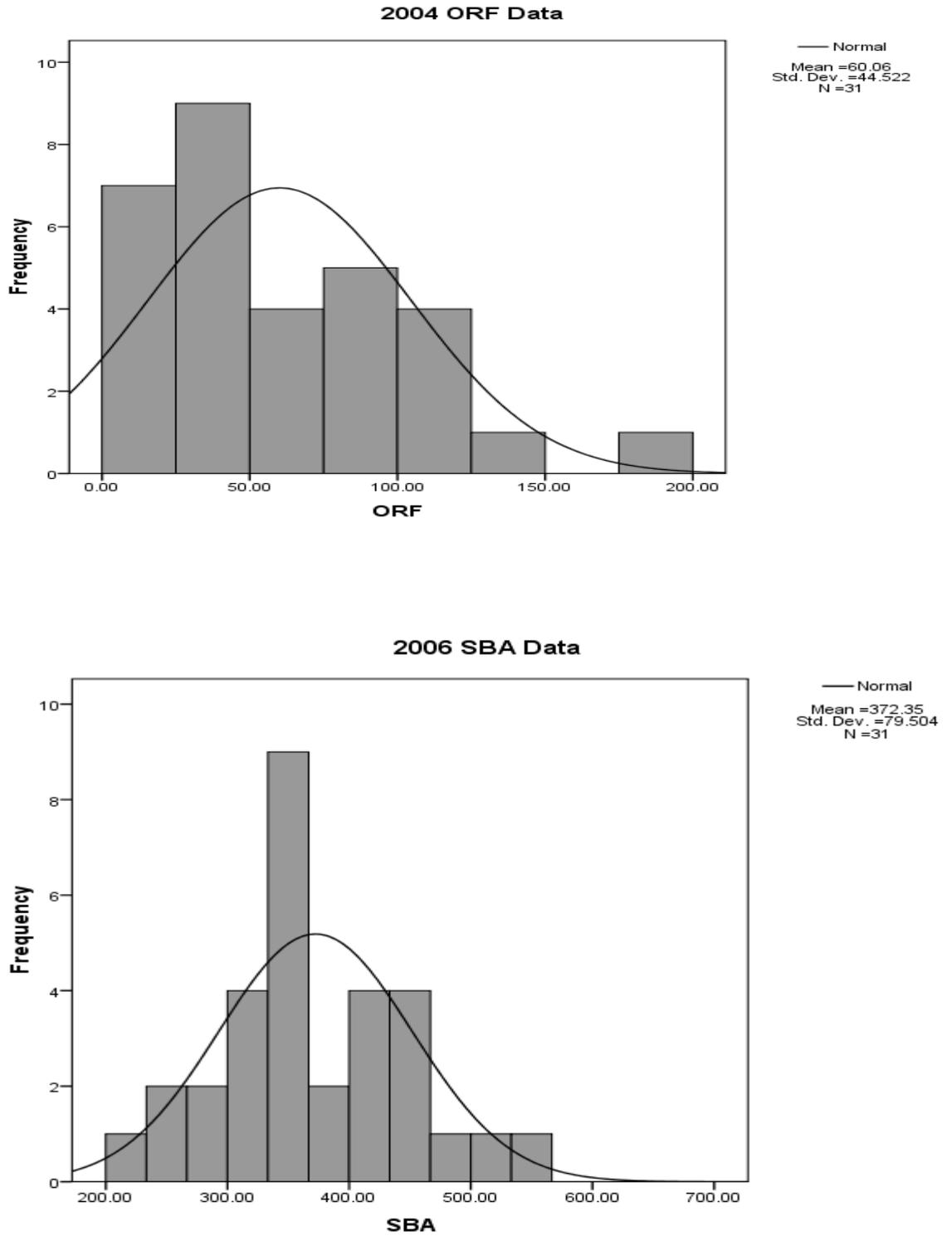


Figure 8: Scatterplot of 2004 ORF and SBA Data

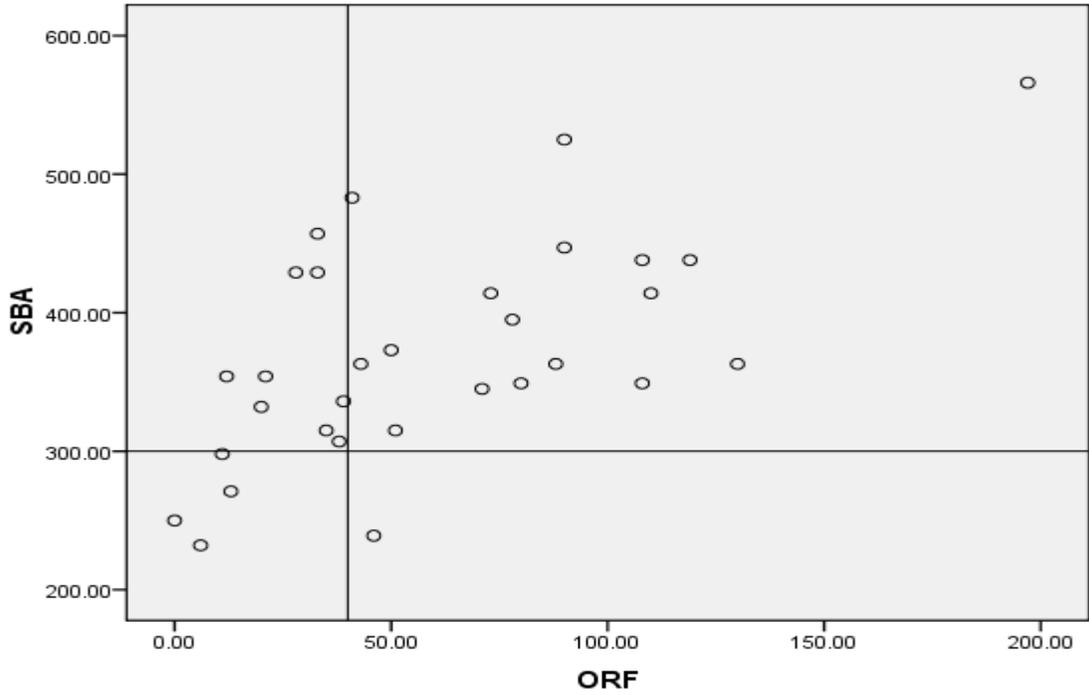
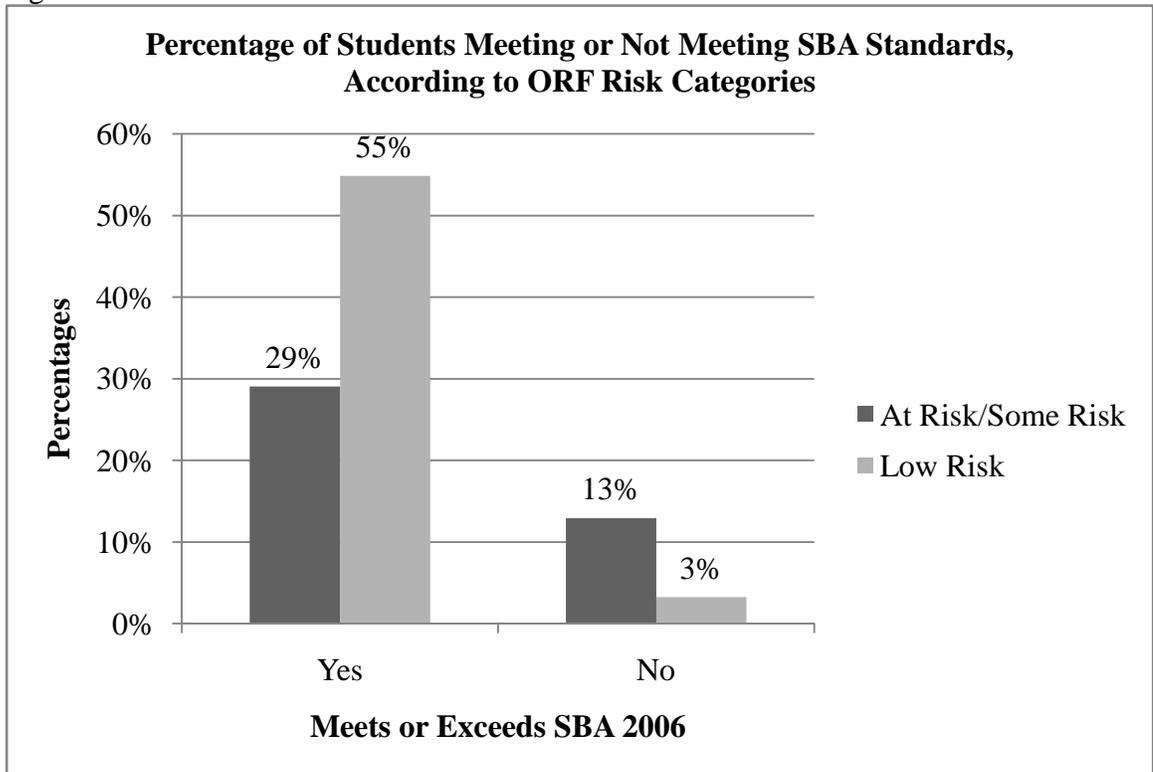


Figure 9



Hypothesis #4: There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2005 and their scores on the third grade Alaska Standards Based Assessment in Reading.

The data were graphed as a histogram with a normal curve to assess the range and the degree to which the data were distributed normally (Figure 10). Variables were determined to be normally distributed before data analysis was performed. This analysis involved 30 first grade students. The correlation between the DIBELS ORF scores of first grade students of 2005 and their third grade Alaska SBA scores in reading was positive and significant ($r = .666$, p (two-tailed) $< .01$) (Table 10). This coefficient can be squared to produce the coefficient of determination, $(.666)^2 = 0.443556$, or 44% of the variance in the SBA score can be explained by the first grade ORF. This indicates a significant, positive correlation revealing that the hypothesis is supported.

Figure 11 reveals this relationship in a scatterplot. The SBA scale score is shown on the vertical axis and has a horizontal reference line at 300, the score set for proficiency. Students scoring above the horizontal line met or exceeded the Alaska Standards in reading for third grade. The ORF scale is on the horizontal axis with a vertical reference line at 40 words per minute, the benchmark score for proficiency. Students with ORF scores below 40 are considered to have some risk or be at-risk for reading difficulties. Students with ORF scores above 40 are considered to be low risk.

Figure 12 provides the breakdown of students by ORF and SBA performance. Fifty percent of first grade students met proficiency on the ORF and met or exceeded proficiency on the reading section of the Alaska SBA. Thirty percent of the students that

did not meet proficiency on the first grade ORF also met or exceeded proficiency on the Alaska SBA. Twenty percent of the students did not meet proficiency on either measure.

Table 10: 2005 ORF and SBA Descriptive Statistics and Correlation

Descriptive Statistics

	Mean	Std. Deviation	N
SBA	3.8083E2	67.19661	30
ORF	50.0667	31.35001	30

Correlations

		SBA	ORF
SBA	Pearson Correlation	1	.666**
	Sig. (2-tailed)		.000
	N	30	30
ORF	Pearson Correlation	.666**	1
	Sig. (2-tailed)	.000	
	N	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 10: Histograms of 2005 ORF and SBA Data

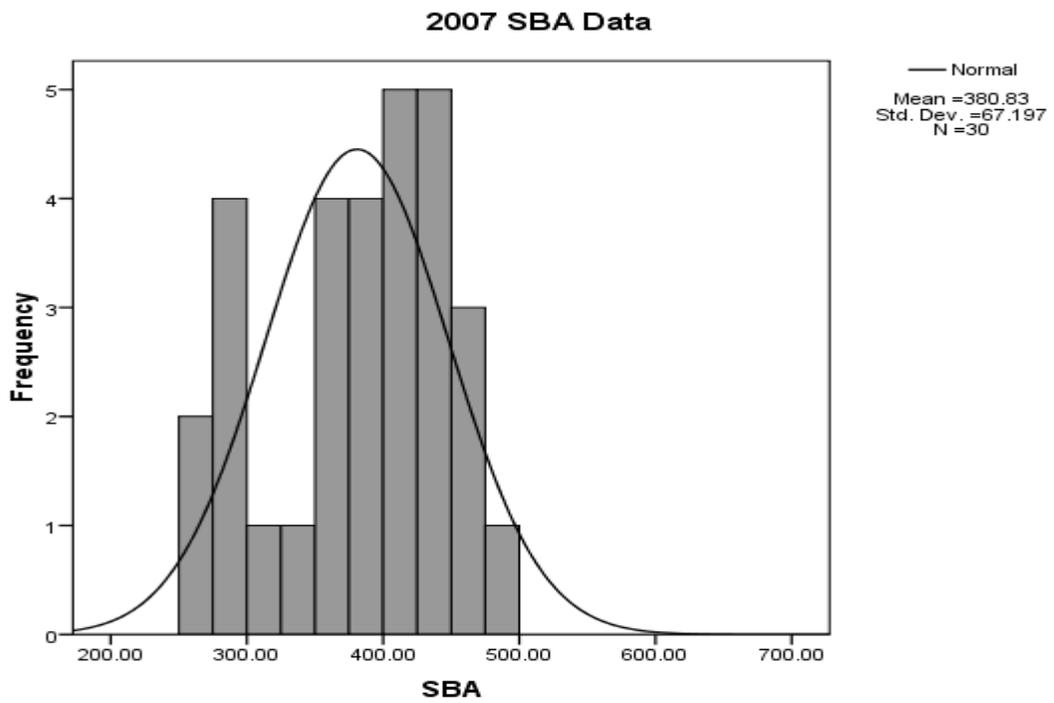
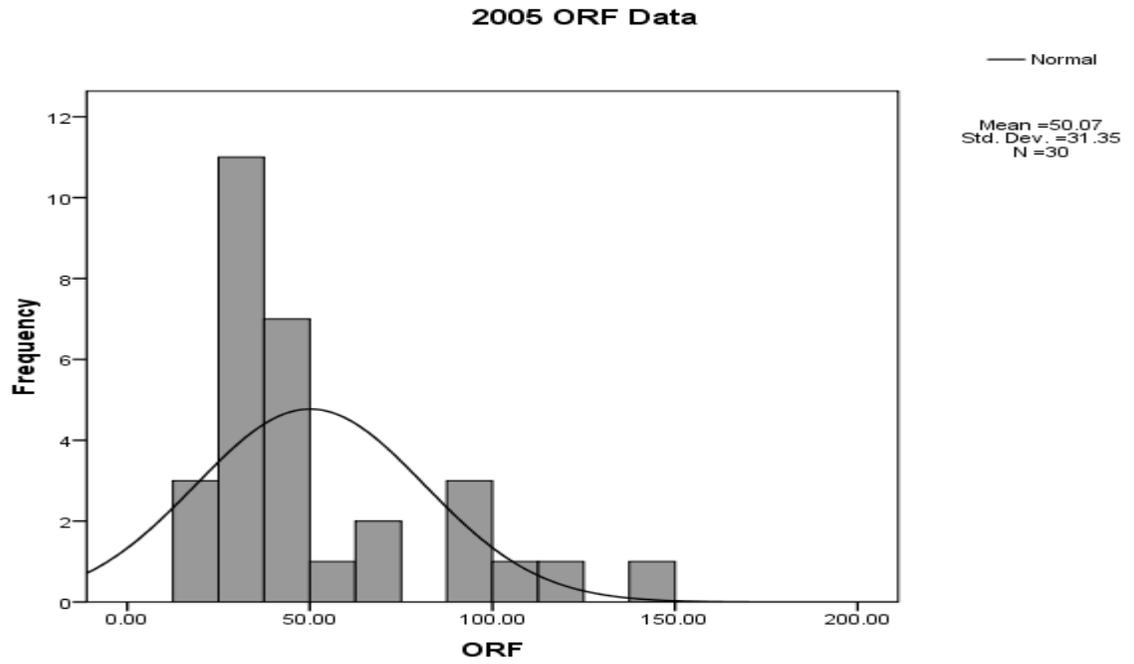


Figure 11: Scatterplot of 2005 ORF and SBA Data

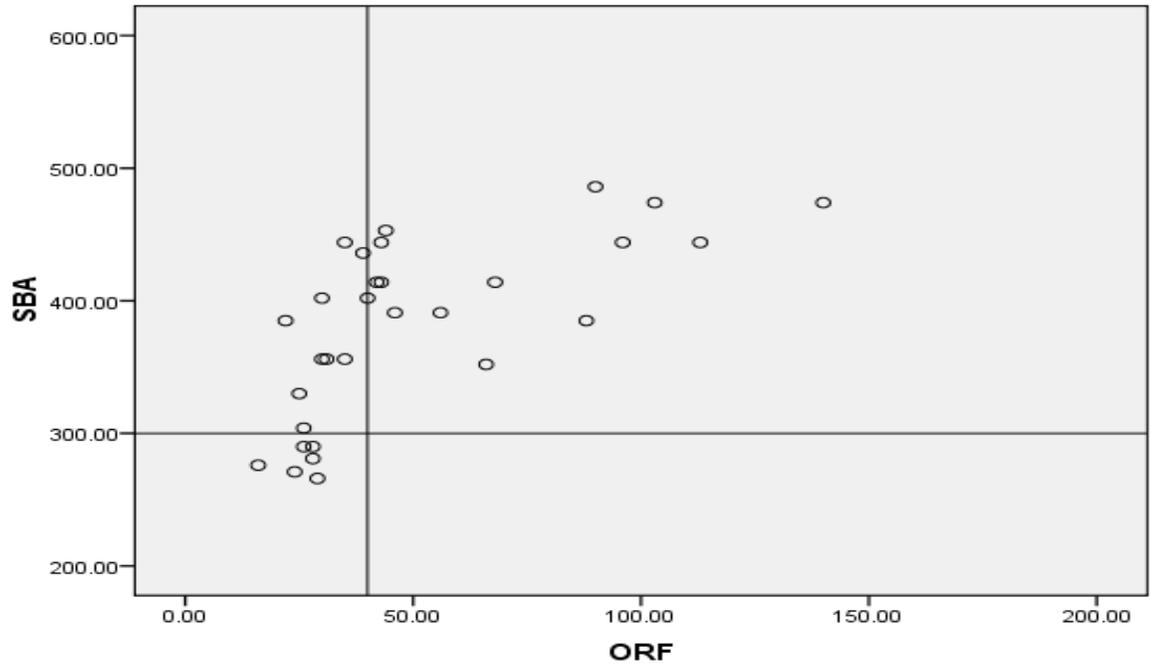
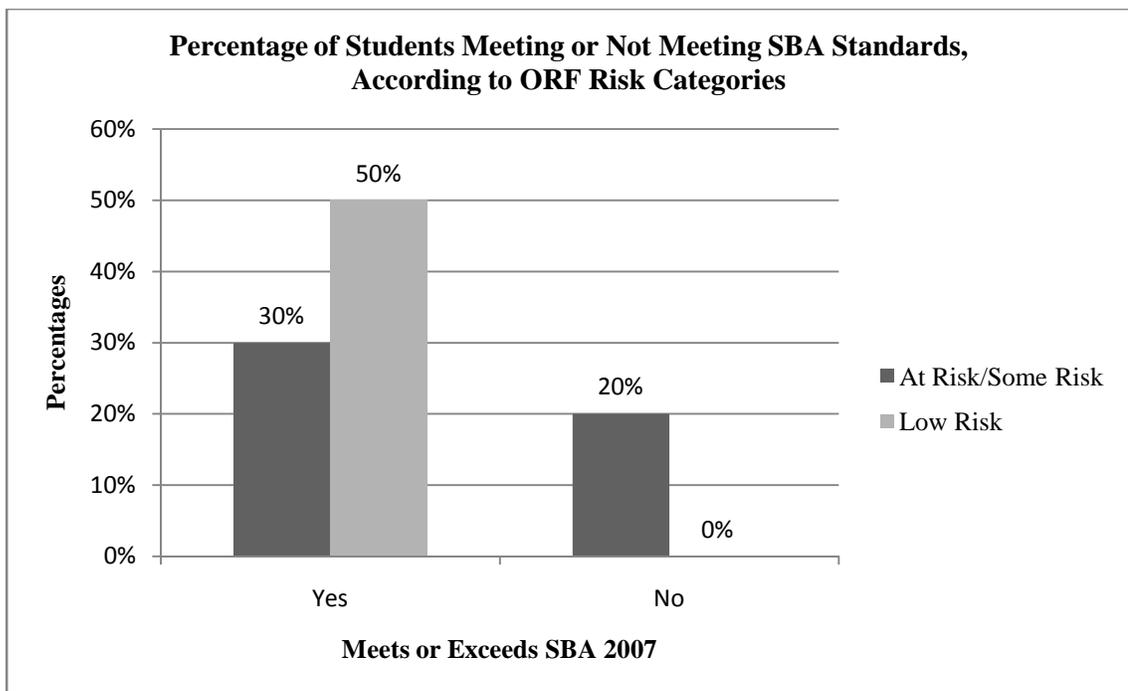


Figure 12



Hypothesis #5: There will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in 2006 and their scores on the third grade Alaska Standards Based Assessment in Reading.

The data were graphed as a histogram with a normal curve to assess the range and the degree to which the data were distributed normally (Figure 13). Variables were determined to be normally distributed before data analysis was performed. This analysis involved 29 first grade students. The correlation between the DIBELS ORF scores of first grade students of 2006 and their third grade Alaska SBA scores in reading was positive and significant ($r = .723$, p (two-tailed) $< .01$) (Table 11). This coefficient can be squared to produce the coefficient of determination, $(.723)^2 = 0.522729$, or 52% of the variance in the SBA score can be explained by the first grade ORF. This indicates a significant, positive correlation revealing that this hypothesis is supported.

Figure 14 reveals this relationship in a scatterplot. The SBA scale score is shown on the vertical axis and has a horizontal reference line at 300, the score set for proficiency. Students scoring above the horizontal line met or exceeded the Alaska Standards in reading for third grade. The ORF scale is on the horizontal axis with a vertical reference line at 40 words per minute, the benchmark score for proficiency. Students with ORF scores below 40 are considered to have some risk or be at-risk for reading difficulties. Students with ORF scores above 40 are considered to be low risk.

Figure 15 provides the breakdown of students by SBA performance and ORF performance. Fifty-five percent of first grade students met proficiency on the ORF and met or exceeded proficiency on the reading section of the Alaska SBA. Thirty-four

percent of the students that did not meet proficiency on the first grade ORF also met or exceeded proficiency on the Alaska SBA. Ten percent of the students did not meet proficiency on either measure.

Table 11: 2006 ORF and SBA Descriptive Statistics and Correlation

Descriptive Statistics

	Mean	Std. Deviation	N
SBA	381.14	63.970	29
ORF	56.97	44.259	29

Correlations

		SBA	ORF
SBA	Pearson Correlation	1	.723**
	Sig. (2-tailed)		.000
	N	29	29
ORF	Pearson Correlation	.723**	1
	Sig. (2-tailed)	.000	
	N	29	29

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 13: Histograms of 2006 ORF and SBA Data

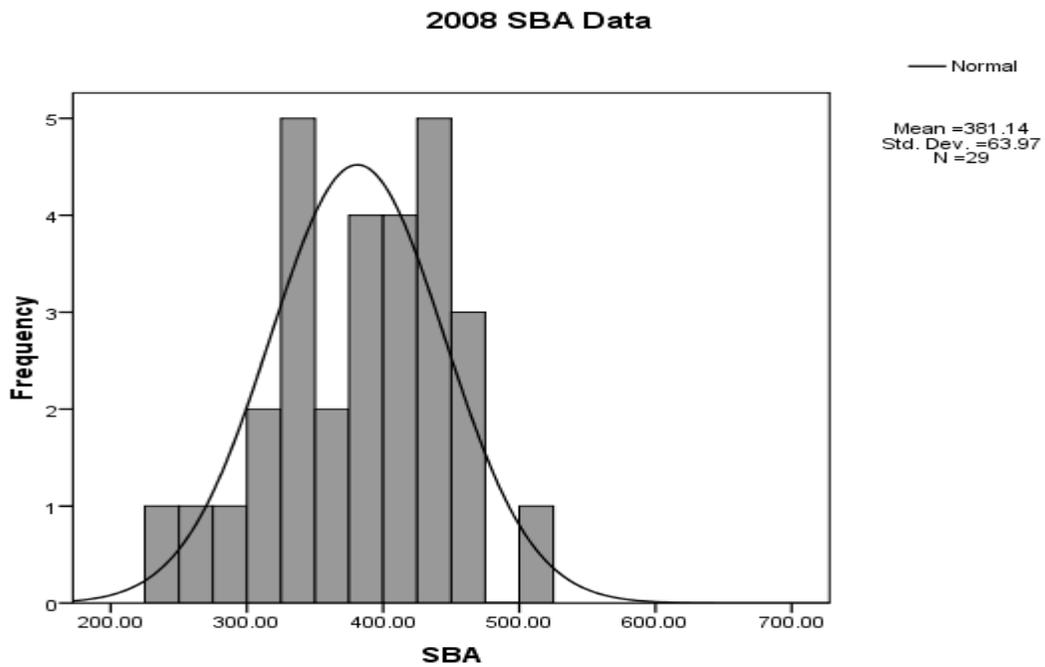
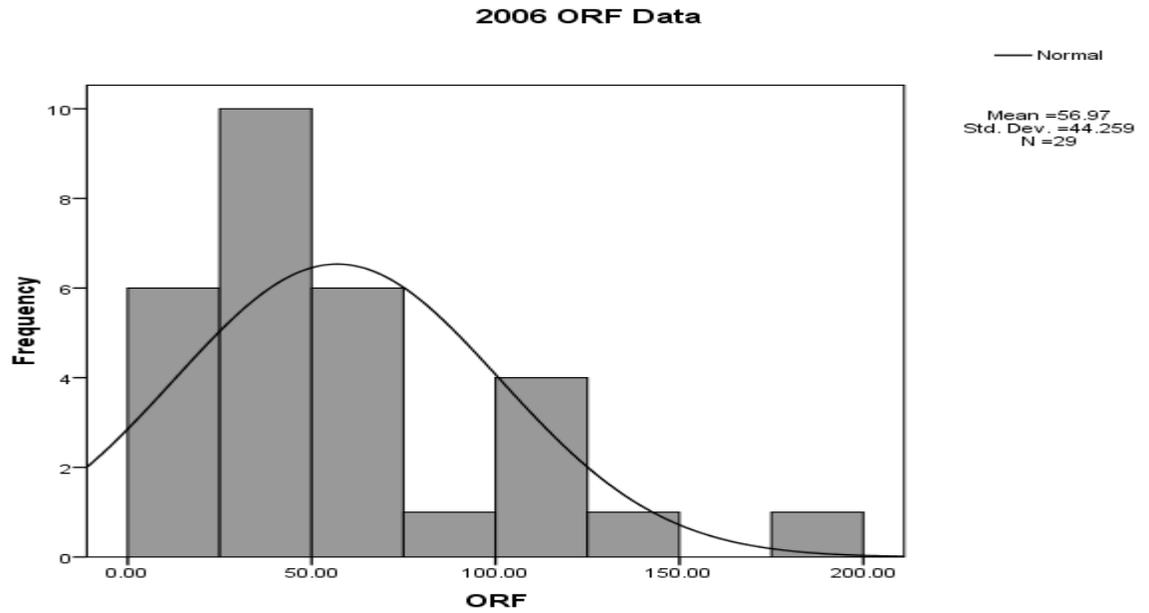


Figure 14: Scatterplot of 2006 ORF and SBA Data

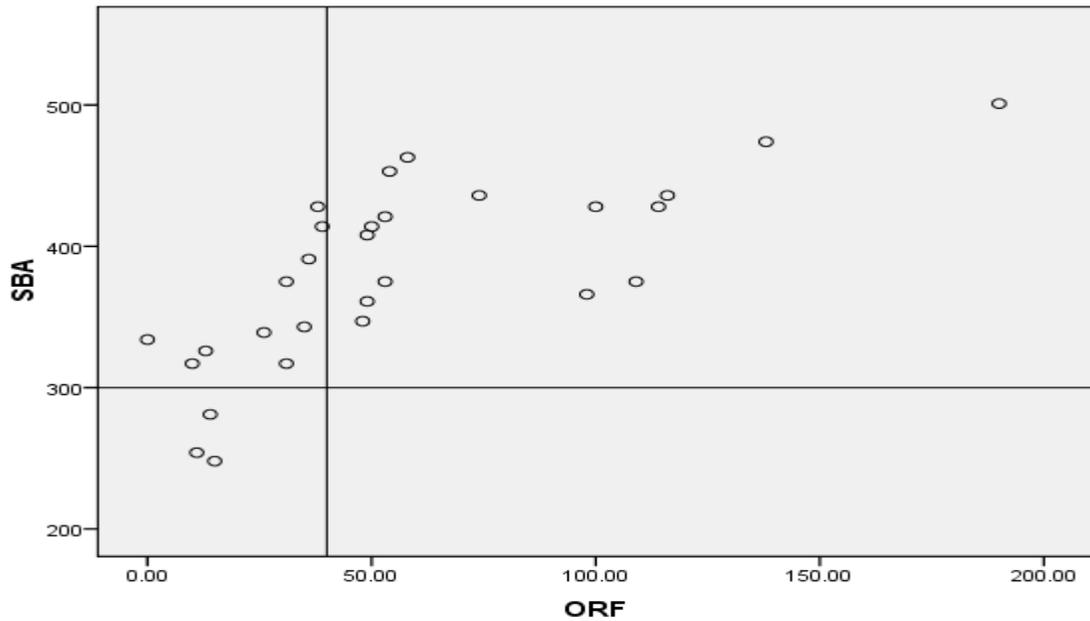
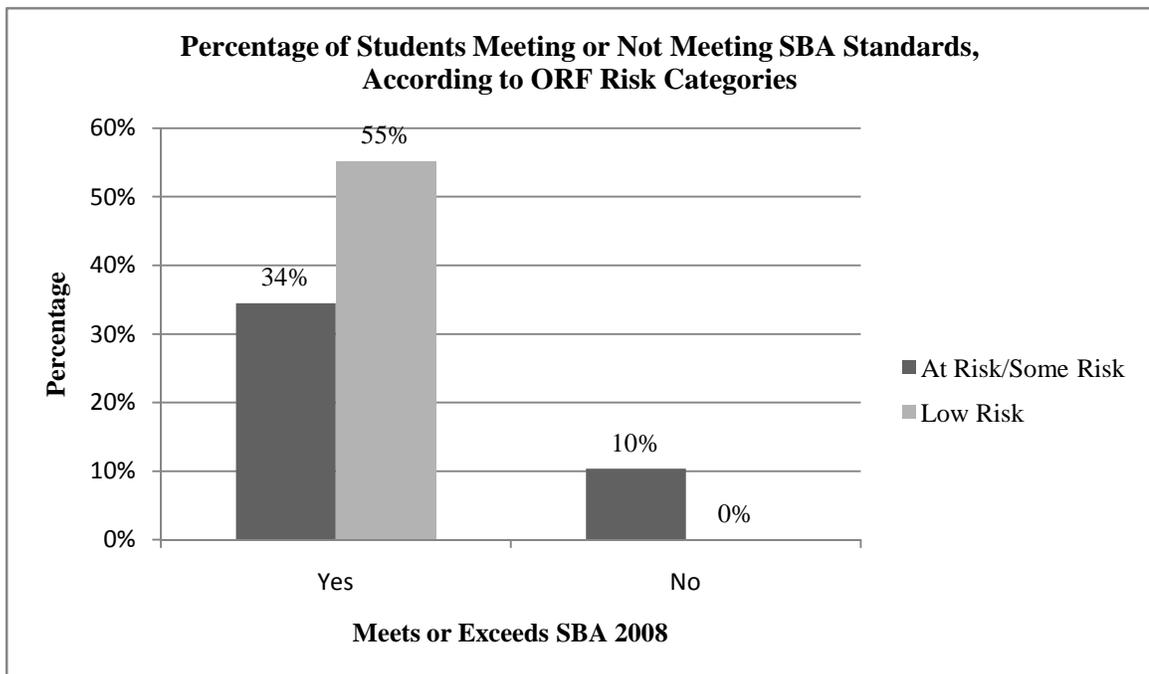


Figure 15



CHAPTER FIVE: SUMMARY AND DISCUSSION

This final chapter of the dissertation restates the research problem and reviews the major methods used in the study. The focus of the study was to determine the relationship between first grade students' Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency (ORF) scores and Third Grade Alaska Standards Based Assessment (SBA) scores in reading. The major sections of this chapter summarize the results and discuss their implications.

Summary

Statement of the Problem

This study was quantitative and examined archived data of students over a four year period in Elementary School B to determine the relationship between the DIBELS first grade ORF scores and third grade Alaska SBA scores in reading. Specifically, this study determined if the students who reached the benchmark level of oral reading fluency in first grade also met the proficiency standard on the Alaska SBA in the third grade and, conversely, whether the first grade students who scored below proficient on the ORF met the proficiency standard on the Alaska SBA in reading. The study dealt with comparing scores of two separate assessments and sought to answer the question:

Is there a relationship between the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency Score of first grade students in Elementary School B and reading scores on the Alaska Standards Based Assessment in Reading?

Review of Methodology

As explained in Chapter One, the study reported here involved the archived data of scores from the DIBELS first grade ORF and third grade scores from the reading portion of the Alaska SBA in Elementary School B. Archived data from the first grade DIBELS ORF was generated by a district-appointed assessment team, and scores were recorded on the DIBELS Data Management Website. Archived data from third grade Alaska SBAs in reading was generated by a scoring agency and recorded on the district data management system, Just Five Clicks. The purpose of this research was to determine if a relationship exists between the two measures, fluency and comprehension.

The Dynamic Indicators of Basic Early Literacy Oral Reading Fluency median score for the spring of the first grade was entered into an Excel spreadsheet. The score that determines proficiency was identified by the authors of the measure and is indicated by a scale located in the DIBELS assessment materials and on the website. The spring benchmark score for first grade is 40 words per minute or more to be quantified as proficient in oral reading fluency. The scores in this study ranged from the lowest of 0 words per minute to the highest of 197 words per minute.

The Alaska Standards Based Assessment was given in the spring of the third grade. The assessments were scored by the Data Recognition Corporation, and the scores were returned to the school by the end of the school year and recorded in the Just Five Clicks data management program on the district server. The scores for proficiency were identified by a predetermined scale. The students must achieve 300 or above to be classified as proficient on the reading portion of the Alaska SBA. The students' reading

scores from the SBA was also entered into the Excel spreadsheet next to the first grade ORF score.

This quantitative study required a statistical procedure for a correlation to determine a relationship. The Statistical Package for the Social Sciences (SPSS) version 16.0 was used in the analysis. The Pearson Product Moment Correlation statistical test was performed for each of the hypotheses to determine the relationship. The Pearson's r statistical test was also performed on the combined data from all first grade ORF scores and third grade Alaska SBA scores to determine a relationship. The analyses also included the mean, standard deviation, and frequencies for each of the hypotheses.

Summary of the Results

Students are expected to demonstrate mastery of the standards and demonstrate learning by the time they are in the third grade. The ability to identify students who may be at-risk for reading difficulty in the first grade would provide teachers information which would enable them to make instructional decisions to improve the academic performance of students. The DIBELS ORF measure is a tool used to identify students, in first grade, who may be at-risk for reading difficulties. The first grade oral reading fluency scores were compared to comprehension scores on the third grade state assessment to determine if a statistical relationship existed between the two measures. Data analysis was performed on the combined scores of all four years of first graders, and the relationship was determined to be positive and significant. There was a positive relationship between the first grade DIBELS ORF score and the Alaska SBA score in reading.

This study represented four different groups of first grade students, so data analysis was performed separately on each of the four years of first grade scores to determine the relationship. Although there was a difference in the number of scores that were analyzed for each year, all of the analyses were determined to be positive and significant.

Discussion of Results

This research study at Elementary School B revealed that a positive correlation is supported between the proficiency score on the DIBELS ORF for first grade students and the third grade reading assessment of the Alaska SBA. Students are expected to read and comprehend a variety of texts, and fluent reading is a key component to comprehension (Rasinski, 2003; Fountas et al., 2006). DIBELS are used to screen and monitor progress of at-risk students. The positive and significant correlation between the two measures demonstrates that those students who were identified as at-risk could have benefited from more prescriptive reading interventions. The scatterplot (see Figure 2) reveals that not all students who scored below proficient on the DIBELS measure failed the Alaska SBAs in reading; therefore results may be attributed to response to intervention practices which were used at Elementary School B. The results also validate that the majority of the students who scored at proficient or higher on the ORF measure also scored at proficient or higher on the Alaska SBAs in reading.

Relationship of the Current Study to Prior Research

The members of the National Reading Panel have emphasized the importance of teaching reading fluency in elementary schools. The focus of reading instruction has been on comprehension with little attention given to fluency (National Reading Panel, 2000).

The authors of DIBELS have indicated that reading fluency can predict performance on high-stakes tests. In this study, there was a positive correlation between DIBELS ORF and Alaska SBAs in reading. The results of this study are consistent with the findings demonstrated by other studies that compare the DIBELS measures with state assessments (Wilson, 2005; Barger, 2003; Shaw; 2002; Buck et al., 2003). The ability to predict scores on high-stakes tests intensifies the value for utilizing curriculum-based measures and for developing reading intervention strategies that promote reading success (Hintze, et al., 2003; Good III et al., 2002; Sibley et al., 2001).

Theoretical Implications of the Study

The desire to fix the problems surrounding the task of learning to read has been around since the post-World War II era when there was a rise in births which increased the number of school-age children. Along with this increase came an escalation in students experiencing reading problems. The research that takes place today cannot sever itself from the work of great historical researchers of the past (Alexander et al., 2008). The theory of automaticity describes the reading process as complex. The reader has a limited capacity for cognition. A child must recognize letters; translate them to sound; merge the sounds together to form words; integrate the words into meaningful sentences; access schema; make inferences; and complete this task quickly, seamlessly, and effortlessly. Automaticity is the management of each of these skills without conscious attention so that cognition can focus on comprehension. Poor comprehension may be explained by the reader investing too much thought into the surface level (decoding) aspects of reading (Samuels, 2002; Rasinski et al., 2008). Reading fluently is a complex system of skills. The reader must read words quickly, accurately, and effortlessly in order

to comprehend (Adams, 2000; Kuhn., 2003; Alvermann, 1986). Fluency and comprehension are interactive and codependent (Fresch, 2008). The Alaska SBAs reading measure tests the comprehension of students. Students who are fluent readers can focus on the meaning of the text rather than the decoding process. This study supports the theory that reading fluency is necessary for comprehension.

It is very important that teachers provide interventions that support improvements in reading fluency. Children who read poorly at the end of first grade will likely continue to do poorly unless adequate interventions are provided. Poor decoding skills limit what a child can read. Automaticity occurs as a result from over learning (Juel, 1996). DIBELS were developed to screen for reading difficulties, to monitor growth in the acquisition of reading skills, and to evaluate intervention practices (Good III et al., 2002). Fluency assessment provides an opportunity to directly assess decoding skills and an opportunity to indirectly assess comprehension (Rasinski, 2003). The students who scored at proficient or higher on the ORF scored at proficient or higher on the Alaska SBAs in reading. The results of this study support the claims that proficiency on the DIBELS measure can be used as a predictor of proficiency on high-stakes tests.

Explanation of Unanticipated Findings

The hypothesis states that there will be a significant, positive correlation between scores of students who take the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency instrument as first graders in the years 2003-2006 and their scores on the third grade Alaska Standards Based Assessment in Reading. The research supported this hypothesis. The unanticipated findings included the inability to predict which students would pass the SBAs. Some students who scored at-risk passed

the SBAs in reading but others did not. Likewise, some students who scored at some risk passed the SBAs in reading but others did not. However, only one student who scored at low risk on the DIBELS ORF measure did not pass the SBAs in reading.

The discrepancy between the ORF scores of students may be explained by the differences in assessment teams, difficulty of reading passages, or maturation level. Those students who were classified at-risk and some risk for reading difficulties may have been classified as such and received reading interventions to improve reading fluency. Some of the interventions that were used may not have been prescriptive to the individual's needs, therefore resulting in little improvement in fluency.

Implications for Practice

The relationship between fluency and comprehension has been established (Rasinski et al., 2008). While this study cannot provide a sound basis for using assessments to predict future scores on high-stakes tests, it can be used to support the use of curriculum-based measures in first grade to identify and guide the instruction of struggling readers. This research study provides the starting point for teachers in Elementary School B to engage in data conversations (Harrison & Bryan, 2008). The results of the study may be used to guide instructional practice and support curriculum decisions at Elementary School B in Alaska. The results provide the documentation necessary for the implementation of a response to intervention model for instructional planning.

This research highlights the importance of quality reading instruction in first grade. Most students who demonstrated proficiency on the first grade DIBELS ORF measure were successful on the reading portion of the Alaska SBA in the third grade. The

results also bring emphasis to the quality of intervention practices used after students are identified as at-risk or at some risk for reading difficulties. Curriculum Based Measures are reading passages which allow the teacher to monitor the progress of fluency. If the intervention that the teacher used is successful, then the fluency score will increase. If the student's score does not improve, then the instructional practice should be changed. This study emphasizes the importance of the teacher becoming the research practitioner. Reading fluency should not be left to happenstance, but should be an important part of the reading instructional process (Deno, 2003; National Reading Panel, 2000).

The federal government requires that Title I money be used for research-based supplementary materials to improve instruction. The research data gathered in this study provides the school with the necessary information to justify the use of Title I funds for the purpose of reading intervention programs. The results may also provide guidance for the selection of professional development programs to be used by teachers to supplement the core reading text materials. These programs and strategies can assist the teacher and school in reducing the number of at-risk students by the time they take the high-stakes tests in the third grade and beyond. This will improve the probability of academic success for students as well the probability of the school making Adequate Yearly Progress.

The selection of books to teach the curriculum is a sensitive area within the school district. It is a process that involves economic decisions. Many times the financial emphasis takes precedence over the instructional importance of the selection. This study provides the data to support the selection of reading materials which stress the five big areas of reading instruction which were emphasized by the National Reading Panel in their report (2000). Materials which support the instruction of phonemic awareness,

phonics, fluency, vocabulary, and text comprehension enable the teacher to provide effective, high quality reading instruction (Armbruster et al., 2001).

Limitations

This study has several limitations. First, it was restricted to archival data of one elementary school within the district. Time and access were factors in acquiring data from more than one elementary school. Second, the Alaska SBAs were first administered operationally in 2005. Items were field tested in 2004, and field test items were administered in 2005. Third, the racial and ethnic population of Elementary School B was minimal, and the results may not generalize with schools which have greater racial and/or ethnical diversity. Approximately 88% of the population of the school is Caucasian, six percent are Alaska Native, one percent are African American, one percent are Hispanic and one percent are Limited English Proficient. The researcher did not subdivide the statistical analysis based on subgroups due to the small percentage within each ethnic category. Fourth, while the oral reading fluency passages of DIBELS remained unchanged throughout each of the years for which data is available; the administrator of the assessment was not constant. Students for the first two years of data were assessed by their classroom teachers. Assessments for the remaining two years were administered by an organized and trained assessment team. Finally, the first three years were scored utilizing paper and pencil forms. PalmPilots were used during the last year of the recorded data.

Recommendations for Further Research

Additional research is needed within the school district to determine if there is a relationship between scores from the same measures in other schools. Would the results

be the same within schools of similar demographics? This research provides a small sample of data. The compilation of data from other schools could better provide information to guide curriculum decisions throughout the district. Would the results be the same for all ethnic groups? The analysis could include ethnic diversity and provide information in regards to specific subgroups. The ethnic diversity of the school population is not representative of the population of the school district; therefore the study should be repeated with a more diverse population.

Additional research is needed within the population of Elementary School B to identify the intervention practices which provided for the improvement in comprehension scores of students who met proficiency on the Alaska SBAs but were categorized as at-risk or some risk on the first grade DIBELS ORF measure. Why did some of the students who scored at-risk on the DIBELS ORF first grade measure make proficiency on the SBA while others did not? This information could prove to aid teachers with planning intervention strategies that may help to decrease the number of at-risk and some risk students.

REFERENCES

- Adams, M. J. (2000). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Alaska Department of Education (2006). Alaska Standards based assessments (SBA) operational and field test. (*Technical Report*) Retrieved October 5, 2006, from <http://www.eed.state.ak.us/tls/assessment/sba.html>.
- Alaska Department of Education and Early Childhood (2008). Alaska Standards based assessments (SBA) operational and field test. (*Technical Report*) Retrieved October 10, 2008 from <http://www.eed.state.ak.us/tls/assessment/sba.html>.
- Alaska Division of Community Advocacy (2008). Community Database Online. Retrieved October 10, 2008 from <http://www.commerce.state.ak.us/dca/commdb/CF>.
- Alaska Teacher Placement (2008). Alaska school districts. Retrieved October 10, 2008 from <http://www.alaskateacher.org>.
- Alexander, P. & Fox, E. (2008). Reading in Perspective. In M.J. Fresh (Ed.), *An essential history of current reading practices* (pp. 12-32). Newark, DE: International Reading Association.
- Allington, R. (2001). *What really matters for struggling readers: Designing research-based programs*. New York, NY: Longman.
- Allington, R. & Woodside-Jiron, H. (1999). The politics of literacy teaching: How “research” shaped educational policy. *Educational Researcher*, 28(8), 4-13.

Retrieved June 27, 2007 from Academic Search Complete database

<http://search.ebscohost.com>.

Alvermann, D. (1986). Becoming a nation of readers: The report of the commission on reading—A critical review. *Georgia Journal of Reading*, 11(2), 24-27. Retrieved June 5, 2008 from Academic Search Complete database

<http://search.ebscohost.com>.

Armbruster, B. Lehr, F. & Osborn, J. (2001). *Put reading first: The research building blocks for teaching children to read*. Center for the Improvement of Early Reading Achievement (Brochure). Jessup, MD: National Institute for Literacy.

Ary, D., Jacobs, L. C., Razavieh, A. & Sorensen, C. (2006). *Introduction to research in education* (7th ed.). Belmont, CA: Wadsworth Publishing.

Assaf, L.(2006). One reading specialist's response to high-stakes testing pressures. *The Reading Teacher*, 60(2), 158-167. Retrieved January 8, 2007 from Academic Search Complete database <http://search.ebscohost.com>.

Bagdi, A. & Vacca, J. (2005). Supporting early childhood social-emotional well being: The building blocks for early learning and school success. *Early Childhood Education Journal*, 33(3), 145-150. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>.

Barger, J. (2003). Comparing the dibels oral reading fluency indicator and the North Carolina end of grade reading assessment. (*Technical Report*). Asheville, NC: North Carolina Teacher Academy. Retrieved June 14, 2007 from Academic Search Complete database <http://search.ebscohost.com>.

- Barnett, D., Elliott, N., Graden, J., Ihlo, T., Macmann, G., Nantais, M. & Prasse, D. (2006). Technical adequacy for response to intervention practices. *Assessment for Effective Intervention*, 32(1), 20-31. Retrieved October 7, 2008 from <http://aei.sagepub.com/cgi/content/abstract/32/1/20>.
- Buck, J. & Torgesen, J. (2003). The relationship between performance on a measure of oral reading fluency and performance on the Florida comprehensive assessment test. (*Technical Report*) Tallahassee, FL: Florida Center for Reading Research. Retrieved September 12, 2006 from <http://dibels.uoregon.edu/techreports/DIBELS>.
- Buly, M. & Valencia, S. (2002). Below the bar: Profiles of students who fail state reading assessments. *Educational Evaluation and Policy Analysis*, 24(3), 219-239. Retrieved June 27, 2007 from Academic Search Complete database <http://search.ebscohost.com>.
- Busch, T. & Reschly, A. (2007). Progress monitoring in reading: Using curriculum-based measurement in a response-to-intervention model. *Assessment for Effective Intervention*, 32(4), 223-230. Retrieved October 7, 2007 from <http://aei.sagepub.com/cgi/content/abstract/32/4/223>.
- Christ, T. & Silberglitt, B. (2007). Estimates of standard error of measurement for curriculum-based measures of oral reading fluency. *School Psychology Review*, 36(1), 130-146. Retrieved January 2, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Clay, M. M. (2002). *An observation survey of early literacy achievement (2nd ed.)* Portsmouth, NH: Heinemann (Reed Publishing).

- Cook, R. G. (2003). The utility of dibels as a curriculum based measurement in relation to reading proficiency on high-stakes tests. *Masters Thesis: Marshall University Graduate College*. Retrieved September 12, 2006 from <http://dibels.uoregon.edu/techreports/DIBELS>.
- Cowen, J. (2003). *A balanced approach to beginning reading instruction: A synthesis of six major U. S. research studies*. Newark, NJ: International Reading Association.
- Coyne, M., Kame'enui, E., Simmons, D. & Harn, B. (2004). Beginning reading intervention as inoculation or insulin: First-grade reading performance of strong responders to kindergarten intervention. *Journal of Learning Disabilities*, 37 (2), 90-104. Retrieved October 14, 2008 from <http://ldx.sagepub.com>.
- Cunningham, P. (2000). *Phonics they use: Words for reading and writing* (3rd edition). New York, NY: Addison Wesley Longman, Inc.
- Deno, S. (2003). Curriculum-based measures: Development and perspectives. *Assessment for Effective Intervention*, 28(3&4), 3-12. Retrieved October 7, 2008 from <http://aei.sagepub.com/cgi/content/abstract/28/3-4/3>.
- Deno, S. (2003). Developments in curriculum-based measurement. *The Journal of Special Education*, 37(3), 184-192. Retrieved October 7, 2008 from <http://sed.sagepub.com/cgi/content/abstract/37/3/184>.
- DIBELS Data System (2008). Dibels measures. Retrieved October 10, 2008 from <https://dibels.uoregon.edu/resources.php>.
- DuFour, R., DuFour R., Eaker, R. & Karhanek, G. (2004). *Whatever it takes: How professional learning communities respond when kids don't learn*. Bloomington, IN: National Educational Service.

- Eldredge, J. (2005). Foundations of fluency: An exploration. *Reading Psychology*, 26, 161-181. Retrieved on Retrieved November 20, 2007 from <http://ecl.sagepub.com>.
- Ericson, L. & Juliebo, M. F. (1998). *The phonological awareness handbook for kindergarten and primary teachers*. Newark, DE: International Reading Association.
- Farstrup, A. (2002). There is more to effective reading instruction than research. In A. Farstrup & S. J. Samuels (Ed.). *What research has to say about reading instruction* (3rd Ed.) (pp. 1-7). Newark, DE: International Reading Association.
- Fountas, I. & Pinnel, G. (2006). *Teaching for comprehension and fluency: Thinking, talking, and writing about reading, K-8*. Portsmouth, NH: Heinemann.
- Fresch, M. J. (2008). Introduction: Standing on the shoulders of giants. In M. J. Fresch (Ed.). *An essential history of current reading practices* (pp. 1-11). Newark, DE: International Reading Association.
- Fuchs, D., Fuchs, L., Compton, D., Bouton, B., Caffrey, C. & Hill, L. (2007). Dynamic assessment as responsiveness to intervention: A scripted protocol to identify young at-risk readers. *Teaching Exceptional Children*, 39(5), 58-63. Retrieved January 3, 2008, from Academic Search Premier database <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=aph&AN=25204854&site=ehost-live>.
- Fuchs, L. & Fuchs, D. (2004). Determining Adequate Yearly Progress from kindergarten through grade 6 with curriculum-based measurement. *Assessment for Effective*

Intervention, 29(4), 25-37. Retrieved October 7, 2008 from
<http://aei.sagepub.com/cgi/content/abstract/29/4/25>.

Fuchs, L., Fuchs, D., Hosp, M. & Jenkins, J. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading*, 5(3), 239-256. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>.

Gentry, J. R. (2000). *The literacy map: Guiding children to where they need to be (K-3)*. New York, NY: Mondo Publishing.

Glatthorn, A. A. & Joyner, R. L. (2005). *Writing the winning thesis or dissertation: A step-by-step guide (2nd edition)*. Thousand Oaks, CA: Corwin Press.

Good III, R. H., Gruba, J. & Kaminski, R. A. (2002). Best practices in using dynamic indicators of basic early literacy skills (DIBELS) in an outcomes-driven model. *University of Oregon*. Retrieved October 6 from
<http://dibels.uoregon.edu/techreports/DIBELS>.

Good III, R. H., Simmons, D. C. & Kame'enui, E. J. (2001). The importance and decision- making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. In *Scientific Studies of Reading*, 5(3), 257-288. Lawrence Erlbaum Associates, Inc. Retrieved on October 1, 2006 from <http://dibels.uoregon.edu/techreports/DIBELS>.

Goodman, K. (2006). *The truth about dibels: What it is what it does*. Portsmouth, NH: Heinemann.

Granville, S. (2001). Comprehension or comprehending? Using critical language awareness and interactive reading theory to teach learners to interact with texts.

Southern African Linguistics and Applied Language Studies, 19, 13-21. Retrieved on August 25, 2008 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=7230490&site=ehost-live>.

Griffith, L. & Rasinski, T. (2004). A focus on fluency: How one teacher incorporated fluency with her reading curriculum. *Reading Teacher*, 58(2), 126-137. Retrieved August 23, 2008 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=14695361&site=ehost-live>.

Hagan-Burke, K., Burke, M. & Crowder, C. (2006). The convergent validity of the dynamic indicators of basic early literacy skills and the test of word reading efficiency for the beginning of first grade. *Assessment for Effective Intervention*, 31(4), 1-15. Retrieved October 7, 2008 from

<http://aei.sagepub.com/cgi/content/abstract/31/4/1>.

Hamilton, C. & Shinn, M. (2003). Characteristics of word callers: An investigation of the accuracy of teacher's judgments of reading comprehension and oral reading skills. *School Psychology Review*, 32(2), 228-240. Retrieved January 2, 2008 from

Academic Search Complete database <http://search.ebscohost.com>.

Harn, B., Stoolmiller, M., & Chard, D. (2008). Measuring the dimensions of alphabetic principle on the reading development of first graders. *Journal of Learning Disabilities*, 41(2), 143-157. Retrieved August 30, 2008, from Education

Research Complete database

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=ejh&AN=31784514&site=ehost-live>.

Harrison, C. & Bryan, C. (2008). Data dialogue: Focused conversations put evidence to work in the classroom. *National Staff Development Council* 29 (4), 15-19

Retrieved January 16, 2009 from Alaska Winter Conference, Anchorage, AK.

Hasbrouck, J. & Tindal, G. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *The Reading Teacher*, 59 (7), 636-644. Retrieved

January 3, 2008 from Academic Search Complete database

<http://search.ebscohost.com>.

Hiebert, E. (2002). Standards, assessments, and text difficulty. In A. Farstrup & S. J.

Samuels (Eds.) *What research has to say about reading instruction* (3rd ed.) (pp. 337-369). Newark, DE: International Reading Association.

Hintze, J., Ryan, A. & Stoner, G. (2003). Concurrent validity and diagnostic accuracy of the dynamic indicators of basic early literacy skills and the comprehensive test of phonological processing. *School Psychology Review*, 32(4), 541-556. retrieved on

January 3, 2008 from Academic Search Premiere <http://search.ebscohost.com>.

Hoff, D. (2008). Steep climb to NCLB goal for 23 states. *Education Week*, 27(39), 1-20.

Retrieved July 29, 2008 from Academic Search Premiere

<http://search.ebscohost.com>.

Hoffman, J. (1996). Teacher and school effects in learning to read. In R. Barr, M. Kamil,

P. Mosenthal & P. D. Pearson (Eds.) *Handbook of reading research: Vol. 2.* (pp. 911-950). Mahwah, NJ: Lawrence Erlbaum Associates.

- Hoffman, J. B., Dwyer, J. F., Clarke, A. T. & Power, T. J. (2002). Evaluating intervention outcomes: Strategies for conducting outcome evaluations of early intervention literacy programs. *National Association of School Psychologists, 31* (3). Retrieved October 11, 2006 from <http://www.nasponline.org/futures/earlylit.html>.
- Honig, B., Diamond, L. & Gutlohn, L. (2008). *Teaching Reading Sourcebook* (2nd edition) Novato, CA: Arena Press.
- Indiana Reading Assessment Report (2005). Indiana reading assessment-grade 1. (*Technical Report*). Retrieved October 6, 2006 from cia.indiana.edu/files/2005_1_techreport.pdf.
- Johnson, J., Dupuis, V., Musial, D., Hall, G. & Gollnick, D. (2002). Using recent history to improve student learning. Introduction to the foundation of American education (12th edition). Boston, MA: Allyn and Bacon.
- Juel, C. (1996). Beginning reading. In R. Barr, M. Kamil, P. Mosenthal & P. D. Pearson (Eds.) *Handbook of reading research: Vol. 2.* (pp.759-787). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kame'enui, E. (2002). An analysis of reading assessment instrument for K-3 (Technical report) University of Oregon: Institute for the Development of Educational Achievement. Retrieved October 5, 2006 from http://www.google.com/search?q=cache:dtVc4KfVOVoJ:idea.uoregon.edu/assessment/final_report.pdf+validity+and+reliability&hl=en&gl=b.
- Kaminski, R. & Cummings, K. (2007). DIBELS: Myths and facts. Dynamic Measurement Group. Retrieved January 3, 2008 from <http://www.dibels.org>.

- Kamps, D. M., Wills, H. P., Greenwood, C. R., Thorne, S. Lazo, J. F. Crockett, J. L., Akers, J. M. & Swaggart B. L. (2003). Curriculum influences on growth in early reading fluency for students with academic and behavioral risks: A descriptive study. *Journal of Emotional and Behavioral Disorders*. 11 (4), 211-224. Retrieved October 9, 2006 from <http://search.ebscohost.com>.
- Kiley, T. & Jensen, R. (2000). Part II -- fluency: A missing piece of the puzzle? *Illinois Reading Council Journal*, 34(3), 62-67. Retrieved January 3, 2008, from Education Research Complete database <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=ejh&AN=21371940&site=ehost-live>.
- Kim, J. & Sunderman, G. (2005). Measuring academic proficiency under the no child left behind act: Implications for educational equity. *Educational Researcher*, 34(8), 3-13. Retrieved Retrieved on March 14, 2008 from <http://search.ebscohost.com>.
- Kuhn, M. (2005). Fluency in the classroom: Strategies for whole-class and group work. In L. Morrow, L. Gambrell & M. Pressley (Eds.) *Best practices in literacy instruction, second edition* (pp. 127-142). New York, NY: The Guilford Press.
- Kuhn, M., Schwanenflugel, P., Morris, R., Morrow, L., Woo, D., Meisinger, E., Sevcik, R., Bradley, R. & Stahl, S. (2006). Teaching children to become fluent and automatic readers. *Journal of Literacy Research* 38(4), 357-387. Retrieved March 14, 2008 from <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=ejh&AN=24485883&site=ehost-live>.

- Lapp, D., Fisher, D. & Grant, M. (2008). "You can read this text-I'll show you how": Interactive comprehension instruction. *Journal of Adolescent and Adult Literacy* 51(5). Retrieved August 26, 2008 from <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=29345979&site=ehost-live>.
- Lewis, A. (2008). A trunk load of books. *Phi Delta Kappan*, pp. 707,708. Retrieved February 20, 2009, from Academic Search Complete database. <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=32537447&site=ehost-live&scope=site>
- Lose, M. (2007). A child's response to intervention requires a responsive teacher of reading. *The Reading Teacher*. 61(3), 276-279. Retrieved January 2, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Lyons, C. A. (2003). *Teaching struggling readers: How to use brain-based research to maximize learning*. Portsmouth, NH: Heinemann.
- Lysaker, J. (2006). Young children's readings of wordless picture books: What's 'self' got to do with it? *Journal of Early Childhood Literacy*, 6(1), 35-55. Retrieved November 20, 2007 from <http://ecl.sagepub.com/cgi/content/abstract/6/1/33>.
- Manning, M., Kamii, C. & Kato, T. (2006). Dibels: Not justifiable. In K. Goodman. *The truth about dibels*, (pp. 71-77). Portsmouth, NH: Heinemann.
- McDonnell, L. (2005). No child left behind and the federal role in education: Evolution or revolution? *PJE. Peabody Journal of Education*, 80 (2), 19-38. Retrieved January 27, 2009 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=16746001&site=ehost-live&scope=site>.

- McLaughlin, M. (2008). Reading comprehension: An evolution of theory, research, and practice. In M. J. Fresch (Ed.), *An essential history of current reading practices* (pp. 82-105). Newark, DE: International Reading Association.
- Menzies, H., Mahdavi, J. & Lewis, J. (2008). Early intervention in reading: From research to practice. *Remedial and Special Education, 29*(2), 67-77. Retrieved October 14, 2008 from <http://rse.sagepub.com/cgi/content/abstract/29/2/67>.
- Miller, S. (2005). The efficacy of early fluency measures and reading interventions to predict performance on a high-stakes reading assessment. Dissertation Abstracts International. (UMI No. 3174253). Retrieved December 28, 2007 from Academic Search Complete database <http://search.ebscohost.com>.
- Missall, K., Reschly, A., Betts, J., McConnel, S., Heistad, D., Pickart, M., Sheran, C. & Marston, D. (2007). Examination of the predictive validity of preschool early literacy skills. *School Psychology Review, 36*(3), 433-452. Retrieved January 2, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Moats, L. C. (2003). An overview of the dynamic indicators of basic early literacy skills (DIBELS). *Administration and Scoring Guide*. Logmont, CO: Sopris West Educational Services.
- National Research Council (1999). Starting out right: A guide to promoting children's reading success. M. S. Burns, P. Griffin, & C. E. Snow (Ed.) *National Reading Council*. Washington, DC: National Academy Press.

- National Research Panel (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (Report of the Subgroups). Washington D.C.: *National Institute of Child Health and Human Development*. NIH Pub. No 00-4754.
- No Child Left Behind (2008). Legislative Background. *Congressional Digest*, Retrieved July 28, 2008, from Academic Search Complete database
<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=31913385&site=ehost-live>.
- O'Connor, R., White, A. & Swanson, H. L. (2007). Repeated reading versus continuous reading: Influences on reading fluency and comprehension. *Exceptional Children*, 74(1), 31-46. Retrieved November 19, 2007 from Academic Search Complete database <http://search.ebscohost.com>.
- Olson, L. (2006). As AYP bar rises, more schools fail. *Education Week*, 26(4), 1-23. Retrieved July 29, 2008, from Academic Search Complete database
<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=22531216&site=ehost-live>.
- Otaiba, S. & Fuchs, D. (2006). Who are the young children for whom best practices in reading are ineffective?: An experimental and longitudinal study. *Journal of Learning Disabilities*, 39(5), 414-431. Retrieved October 14, 2008 from
<http://ldx.sagepub.com/cgi/content/abstract/39/5/414>.
- 107th Congress (2002). No Child Left Behind: Public law 107-110. Retrieved on June 27, 2007 from <http://www.ed.gov/policy/elsec/leg/esea02/107-110>.

- Padak, N. & Rasinski, T. (2008). Evidence-based instruction in reading: *A professional development guide to fluency*. Boston, MA: Pearson.
- Pearson, P. D. (1999). A historically based review of preventing reading difficulties in young children. *Reading Research Quarterly*, 54(2), 231-246. Retrieved July 25, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Pearson, P. D. (2000). Reading in the twentieth century. (Report No. CS 512338) Washington, DC: Office of Educational Research and Improvement (CIERA archive #01-08). Retrieved on April 2, 2008 from www.ciera.org/library/archive/.
- Pearson, P. D. (2006). Forward. In K. Goodman. *The truth about dibels*. (pp. v-xix). Portsmouth, NH: Heinemann.
- Poncy, B., Skinner, C. & Axtell, P. (2005). An investigation of the reliability and standard error of measurement of words read correctly per minute using curriculum-based measurement. *Journal of Psychoeducational Assessment*, 23, 326-338. Retrieved April 19, 2007 from <http://jpa.sagepub.com>.
- Ponnuru, R. (2006). Bush's centerpiece: five years on, how is 'no child left behind' faring? *National Review*, 58 (18),50-51. Retrieved on October 10, 2006 from <http://web.ebscohost.com.ezproxy.liberty.edu:2048/ehost/pdf?vid=71&hid=103&sid=90ae474e-5c38-4504-8607-f769a51aafe9%40sessionmgr104>.
- Rasinski, T. & Lenhart, L. (2008). Exploration of fluent readers. *Reading Today*. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>.

- Rasinski, T. & Mraz, M. (2008). Fluency: Traversing a rocky road of research and practice. In M. J. Fresch (Ed.) *An essential history of current reading practices* (pp. 106-119). Newark, DE: International Reading Association.
- Rasinski, T. (2003). *The Fluent Reader*. New York, NY: Scholastic Professional Books.
- Rasinski, T. (2006). Reading fluency instruction: Moving beyond accuracy, automaticity, and prosody. *The Reading Teacher* 59(7), 704-706. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Reilly, M. (2007). Choice of action: Using data to make instructional decisions in kindergarten. *The Reading Teacher*, 60(8), 770-776. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Reutzel, D. & Mitchell, J. (2005). High-stakes accountability themed issue: How did we get here from there? *The Reading Teacher*, 58(7), 606-608. Retrieved December 30, 2007 from Academic Search Complete database <http://search.ebscohost.com>.
- Richards, M. (2000). Be a good detective: Solve the case of oral reading fluency. *The Reading Teacher*, 53, 534-539. Retrieved December 30, 2007 from Academic Search Complete database <http://search.ebscohost.com>.
- Rouse, H. & Fantuzzo, J. (2006). Validity of the dynamic indicators of basic early literacy skills as an indicator of early literacy for urban kindergarten children. *School Psychology Review*, 35(3), 341-355. Retrieved January 2, 2008 from Academic Search Complete database <http://search.ebscohost.com>.
- Routman, R. (2003). *Reading essentials: The specifics you need to teach reading well*. Portsmouth, NH: Heinemann.

Samuels, S. J. (2002). The method of repeated readings. *In Evidence-based reading instruction: Putting the national reading panel report into practice* (pp. 85-90).

Newark, DE: International Reading Association.

Samuels, S. J. (2007). The dibels tests: Is speed of barking at print what we mean by reading fluency? *Reading Research Quarterly*, pp. 563,566. Retrieved

August 30, 2008, from Education Research Complete database

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=ejh&AN=26915101&site=ehost-live>.

Schwanenflugel, P., Meisinger, E., Wisenbaker, J., Kuhn, M., Strauss, G. & Morris, R.

(2006). Becoming a fluent and automatic reader in the early elementary years.

Reading Research Quarterly, 41 (4), 496-522. Retrieved on August 26, 2008 from

Academic Search Complete database at

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=22742152&site=ehost-live>.

Seay, S. (2006). How dibels failed Alabama: A research report. In K. Goodman. *The truth about dibels* (pp. 60-65). Portsmouth, NH: Heinemann.

Shanahan, T. (2002). What reading research says: The promises and limitations of applying research to reading education. In A. E. Farstrup & S. J. Samuels (Ed.)

What Research Has to Say About Reading Instruction (pp. 8-24). Newark, DE:

International Reading Association.

Shanahan, T. (2003). Research-based reading instruction: Myths about the national reading panel report. *The Reading Teacher*, 56(7), 646-655. Retrieved July 25,

2008 from Academic Search Complete database <http://search.ebscohost.com>.

- Shanker, J. & Ekwall, E. (2003). *Locating and correcting reading difficulties* (8th edition) Upper Saddle River, NJ: Merrill Prentice Hall.
- Shannon, P. (1996). Politics, policy, and reading research. In R. Barr, M. Kamil, P. Mosenthal & P. D. Pearson (Eds.) *Handbook of reading research: Vol. 2.* (pp. 147-167). Mahwah, NJ: Lawrence Erlbaum Associates.
- Shapiro, E., Keller, M., Lutz, J., Santoro, L. & Hintze, J. (2006). Curriculum-based measures and performance on state assessment and standardized tests: Reading and math performance in Pennsylvania. *Journal of Psychoeducational Assessment*, 24(1),19-35. Retrieved April 19, 2007 from <http://www.sagepublications.com>.
- Shaw, R. & Shaw, D. (2002). DIBELS oral reading fluency-based indicators of third grade reading skills for Colorado state assessments program (CSAP). (*Technical Report*) Eugene, OR: University of Oregon. Retrieved September 20, 2006 from <http://dibels.uoregon.edu/techreports/index.php>
- Sibley, D., Biwer, D. & Hesch, A. (2001). Establishing curriculum-based measurement oral reading fluency performance standards to predict success on local and state tests of reading achievement (Report No. CS 014-401). National Association of School Psychologists. Washington, DC (ERIC Document Reproduction Service No. ED453527)
- Snow, C., Burns, M. & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Stanovich, K. (1993). Romance and reality. *The Reading Teacher*, 47 (4), 280. Retrieved December 30, 2008 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=9404210273&site=ehost-live&scope=site>

Stanovich, K. (1996). Word recognition: Changing perspectives. In R. Barr, M. Kamil, P. Mosenthal & P. D. Pearson (Eds.) *Handbook of reading research: Vol. 2.* (pp. 418-452). Mahwah, NJ: Lawrence Erlbaum Associates.

Stayter, F. & Allington, R. (2001). Fluency and the understanding of texts. *Theory into Practice*, 30 (3), 143-148. Retrieved November 19, 2007 from Academic Search Premier database <http://web.ebscohost.com>

Taylor, B. & Pearson, P. (2004). Research on learning to read-at school, at home and in the community. *Elementary School Journal*, 105 (2) 167-181. Retrieved October 16, 2008 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=15166910&site=ehost-live&scope=site>

Therrien, W., Gormley, S. & Kubinu, R. (2006). Boosting fluency and comprehension to improve reading achievement. *Teaching Exceptional Children*, 38(3), 22-26. Retrieved January 3, 2008, from Academic Search Premier database

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=aph&AN=20342162&site=ehost-live>

Tierney, R. (2006). Changing practices: influences on classroom assessment. *Assessment in Education: Principles, Policy and Practice*, 13(3), 239-264. Retrieved on October 10, 2008 from

<http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=23173166&site=ehost-live&scope=site>

- Tierney, R. J., & Thome, C. (2005). *Is dibels leading us down the wrong path?* Retrieved October 5, 2006 from <http://www.educationalinsights.net/about/tierney/dibels.pdf>
- Tompkins, G. (2006). *Literacy for the 21st century: A balanced approach*, fourth edition. Columbus, OH: Pearson Merrill Prentice Hall.
- Tyre, P. Philips, M. Scelfo, J. (2006). The new first grade: Too much too soon? *Newsweek*. 2006, 148 (11) Retrieved on October 12, 2006 from <http://web.ebscohost.com.ezproxy.liberty.edu:2048/ehost/delivery?vid=87&hid=3&sid=9>
- Uribe-Zarain, X. (2007). Relationship between performance on dibels oral reading fluency and performance on the reading dstp year 2005-2006. (Report T07.07.02) Newark, DE: Delaware Research and Development Center. Retrieved December 30, 2007 from Academic Search Complete database <http://search.ebscohost.com>
- Vander Meer, C. D., Lentz, F. E., & Stollar, S. (2005). The relationship between oral reading fluency and Ohio proficiency testing in reading (*Technical Report*). Eugene, OR: University of Oregon. Retrieved September 20, 2006 from <http://dibels.uoregon.edu/techreports/index.php>
- Wakeman, S, Browder, D., Meir, I. & McColl, A. (2007). The implications of no child left behind for students with developmental disabilities. *Mental Retardation & Developmental Disabilities Research Reviews*, 13(2), 143-150. Retrieved July 29, 2008, <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=a9h&AN=25425768&site=ehost-live>

- Walczyk, J. (2000). The interplay between automatic and control processes in reading. *Reading Research Quarterly*, 35(4), 554. Retrieved August 30, 2008, from Education Research Complete database <http://search.ebscohost.com.ezproxy.liberty.edu:2048/login.aspx?direct=true&db=ejh&AN=3740003&site=ehost-live>
- Walczyk, J. & Griffith-Ross, D. (2007). How important is reading skill fluency for comprehension? *The Reading Teacher*, 60(6), 560-569. Retrieved January 3, 2008 from Academic Search Complete database <http://search.ebscohost.com>
- Walker, B. (2008). History of Phonics Instruction. In M. J. Fresch (Ed.), *An essential history of current reading practices* (pp. 33-51). Newark, DE: International Reading Association.
- Wenning, R., Herdman, P., Smith, N., McMahon, N. & Washington, K. (2003). No child left behind: testing, reporting, and accountability. ERIC Clearinghouse on Urban Education, Institute for Urban and Minority Education. (ERIC Document Service No. ED480994). Retrieved December 23, 2008 from Academic Search Complete database <http://search.ebscohost.com>
- Wilde, S. (2006). But isn't dibels scientifically based? In K. Goodman. *The truth about dibels*, (pp. 66-70). Portsmouth, NH: Heinemann.
- Wilson, J. (2005). The relationship of dynamic indicators of basic early literacy skills (DIBELS) oral reading fluency to performance on Arizona instrument to measure standards (AIMS). (*Technical report*) Retrieved September 20, 2006 from <http://dibels.uoregon.edu/techreports/index.php>

- Winograd, P., Flores-Duenas, L. & Arrington, H. (2003). Best practices in literacy assessment. In L. Morrow, L. Gambrell, & M. Pressley (Eds.) *Best practices in literacy instruction*, 2nd edition (pp. 201-238). New York, NY: The Guilford Press.
- Winters, R. (2002). Vocabulary anchors: Building conceptual connections with young readers. In Evidence-based reading instruction: *Putting the national reading panel report into practice* (pp. 130-133). Newark, DE: International Reading Association.
- Wright, P. & Wright, P. (2008). Definitions. www.Wrightslaw.com Retrieved March 11, 2008.
- Yatvin, J. (2000). Minority View. In the *National Research Panel (2000) Teaching children to read*. (Appendix C). Washington D.C.: National Institute of Child Health and Human Development. NIH Pub. No 00-4754.
- Yeh, S. (2006). Can rapid assessment moderate the consequences of high-stakes testing? *Education and Urban Society*, 39(1), 91-112. Retrieved November 19, 2007 from <http://eussagepub.com>.