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The Relationship Between DIBELS Oral Reading Fluency Scores and Reading Scores on High-Stakes Assessments

Alicia Lenise Curry

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THE RELATIONSHIP BETWEEN DIBELS ORAL READING FLUENCY
SCORES AND READING SCORES ON HIGH-STAKES ASSESSMENTS

By

Alicia Lenise Curry

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillments of the Requirements
for the Degree of Doctor of Philosophy
in Elementary Education
in the Department of Curriculum, Instruction, and Special Education

Mississippi State, Mississippi

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AND READING SCORES ON HIGH-STAKES ASSESSMENTS

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Early identification of children with reading problems is a vital element of academic success at all grade levels. Thus, it is crucial that educators select and implement efficient reading assessments and procedures. The purpose of this study was to investigate third grade archival data of students over a 2-year period at one school to determine if a relationship existed between the DIBELS 3rd grade oral reading fluency scores and the reading scores on Stanford Achievement Test and the reading scores on the Alabama Reading and Math Test. Archival data from 80 third grade African American students who were assessed with all three assessments was used to conduct this study. Pearson and Spearman statistical tests were performed on the data to examine the relationship between DIBELS (oral reading fluency) and the reading section of the Stanford Achievement Test and the reading section of the Alabama Reading and Math Test. The results indicated a relationship existed between DIBELS oral reading fluency

scores and the reading scores on Stanford Achievement Test and the reading scores on the Alabama Reading and Math Test during the 2009-2010 school years.

Keywords: reading, DIBELS, high-stakes testing, standardized testing, SAT, ARMT

DEDICATION

I would like to dedicate this research to my husband, Dr. Michael L. Curry, and my parents, Joseph and Willie Mae Danner.

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TABLE OF CONTENTS

DEDICATION	ii
ACKNOWLEDGEMENT	iii
LIST OF TABLE	vii
LIST OF FIGURE.....	viii
CHAPTER	
I. INTRODUCTION	1
Background of the Study	4
High-Stakes Testing and No Child Left Behind Act	7
International Reading Association and High-Stakes Testing	7
Statement of the Problem.....	8
Research Questions.....	8
Purpose of the Study.....	9
Significance of the Study.....	9
Definitions	10
II. REVIEW OF RELATED LITERATURE	12
Reading: A Historical Journey.....	12
Theoretical Framework for Reading Fluency.....	16
Fluency and Comprehension.....	18
Fluency Assessment.....	20
DIBEL.....	22
DIBELS Risk Labels.....	23
Scoring of Oral Reading Fluency.....	24
Related Empirical Studies.....	25
Justification.....	32
Summary.....	32

III. METHODOLOGY	34
Review of Research Questions	34
Participants.....	35
Research Context	35
Data Collection Procedures	36
Instrumentation	36
Dynamic Indicators for Basic Early Literacy Skills	37
Stanford Achievement Test Tenth Edition.....	40
The Alabama Reading and Math Test.....	41
Research Design.....	44
Data Analysis	44
IV. RESULTS	48
Results by Research Questions	48
Summary	55
V. CONCLUSIONS AND RECOMMENDATIONS	59
Review of the Study.....	59
Discussion of Research Findings by Assessments	61
2009 and 2010 DIBELS and SAT School Assessments	61
2009 and 2010 DIBELS and ARMT School Assessments	63
Conclusions.....	65
Implications	66
Limitations	67
Future Research	68
REFERENCES	70
APPENDIX	
A. IRB APPROVAL LETTER.....	77

LIST OF TABLES

TABLE

1. Summary of Assessment Objectives.....	38
2. Summary of Benchmark Goals.....	39
3. Summary of Research Questions and Statistical Measures	46
4. Summary of Descriptive Statistics for Assessments.....	49
5. Summary of Students' Academic Performances	50
6. Summary of Research Questions and Results	56

LIST OF FIGURES

FIGURE

1. Histogram of 2009 DIBELS Oral Reading Fluency Scores	52
2. Histogram of 2009 Stanford Achievement Reading Scores	52
3. Scatterplot of 2009 DIBELS and Stanford Achievement Scores	53
4. Histogram of 2010 DIBELS Oral Reading Fluency Scores	57
5. Histogram of 2010 Stanford Achievement Reading Scores	57
6. Scatterplot of 2010 DIBELS and Stanford Achievement Scores	58

CHAPTER I

INTRODUCTION

Teachers, parents, politicians, and educational philosophers have been concerned about the quality of reading instruction for centuries. Indeed, there has been a perpetual and unresolved debate regarding effective reading instruction for at-risk and struggling readers across the nation. The essentials of basic reading have been examined, reconstructed, and significantly researched to cultivate reading proficiency, but historically, educational reports indicate children are not demonstrating adequate reading skills needed to successfully function in educational settings or to become productive citizens in the United States (Feister, 2010; National Center for Education Statistics, 2010; National Commission of Excellence, 1983). In fact, to address academic accountability issues among educators and school systems, the No Child Left Behind Act (NCLB), was developed to “ensure that all students have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments” (U. S. Department of Education, 2002, p. 1439).

Based on NCLB, all state departments of public education require schools to administer state assessments to assess the students’ performance in reading, mathematics, and science. NCLB focuses on the following:

(a) meeting the educational needs of low-achieving children in our Nation's highest-poverty schools, limited English proficient children, migratory children, children with disabilities, Indian children, neglected or delinquent children, and young children in need of reading assistance; (b) closing the achievement gap between high- and low-performing children, especially the achievement gaps between minority and nonminority students, and between disadvantaged children and their more advantaged peers (U. S. Department of Education, 2002, p. 1440).

According to the U. S. Department of Education (2002), NCLB requires all states to assess students in reading and math in grades 3-8 using state-designed assessments. NCLB also mandates that schools make adequate yearly progress (AYP) to hold schools accountable for student learning. The AYP is defined as the measurement used to determine if a school is meeting annual academic requirements for each of its student groups. The main purpose of AYP is to identify schools and school districts that have unsatisfactory academic performance so academic inadequacies can be addressed. Each state must develop and implement a single state wide accountability system that will examine and measure academic standards for all public elementary and secondary schools. The accountability system must include what constitutes AYP for that state and the academic performance on the test determines if students are making AYP.

Although the federal government is addressing academic performance by examining standardized test data from state assessments, countless research studies have been disseminated to show educators the consequences of relying on one single measure to assess a child's academic success or to make instructional decisions, using high-stakes testing methods (Nichols & Berliner, 2008). According to the International Reading Association (IRA) position statement, high-stakes testing, or the practice of connecting consequences for high or low academic performance are substantial. Furthermore, the IRA position statement explained "our central concern is that testing has become a means

of controlling instruction as opposed to a way of gathering information to help students become better readers” (International Reading Association, 1999, p. 4). The over-reliance on high-stakes testing has serious negative repercussions that are present in public schools across the United States (Nichols & Berliner, 2005).

Alabama is one state that relies heavily on the use of standardized test data. The Alabama Department of Education utilizes data from the Stanford Achievement Test (SAT) and the Alabama Reading and Math Test (ARMT) to evaluate the academic performance in reading and mathematics in Grades 3-8 (Alabama Department of Education, 2010). These tests can be considered high-stakes assessments because the data reported is used to determine if the academic performance of students is adequate. Furthermore, if inadequate performance is determined, the following corrective measures or consequences would be implemented:

(a) Deferring programmatic funds or reducing administrative funds, (b) replacing the local educational agency personnel who are relevant to the failure to make adequate yearly progress, (c) removing particular schools from the jurisdiction of the local educational agency and establishing alternative arrangements for public governance and supervision of such schools, (d) Abolishing or restructuring the local educational agency (U. S. Department of Education, 2002 p. 1484).

In addition to the SAT and the ARMT, many school districts in Alabama are using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) as an early reading screening tool to identify children who may be at-risk for reading failure in Grades K-3. Based on the screening results from DIBELS, teachers create instructional strategies to use with students who may be at-risk for reading failure. Screening tools are crucial to ensure that teachers have the opportunity to work with at-risk readers (Alabama Department of Education, 2010).

Due to the overemphasis on testing, reading instruction is becoming a laborious task lacking connections to real-world experiences such as reading genres for pleasure and understanding that reading is naturally connected to our lives (IRA, 1999). “The pressure to score well on a single test is so intense that it leads to nefarious practices (cheating on the test, data manipulation), distorts education (narrowing the curriculum, teaching to the test), and ends up demoralizing our educators” (Nichols & Berliner, 2008, p. 2). Today, many at-risk and struggling readers view reading as a disconnected, isolated, uninteresting academic process required for school, rather than a personally rewarding experience needed for life. Research has shown that literal reading is often overemphasized, and the practice of critical reading skills is eliminated or overlooked, which creates dependent readers instead of autonomous learners (Richardson, Morgan, & Fleener, 2006).

Background of the Study

Understanding how children learn, and specifically how they read, has always been an imperative focus in education (National Institute of Child Health and Human Development, 2000). It is even more of an issue when educators use the results from one test, such as DIBELS (screening tool) or a standardized achievement test to make instructional decisions for students and teachers (IRA, 1999). Due to NCLB placing a strong emphasis on assessment and accountability, DIBELS has gained widespread use in many parts of the United States as an early reading screener (DIBELS Data System, 2010). In many cases, DIBELS data is used to predict the academic performance on high-stakes assessments, while standardized testing data is used to determine if schools

are meeting adequate yearly progress at the local, state, and federal levels (Alabama Department of Education, 2010).

Although DIBELS is a popular screening assessment, many researchers question the validity of DIBELS, due to its inability to adequately measure reading comprehension skills (Goodman, 2006). One of the main features of DIBELS is oral reading fluency. The oral reading fluency benchmark score is based on the number of words read correctly and not comprehension questions (Farrell, Hancock, & Smartt, 2006). Therefore, students are not penalized for not comprehending the passage they read, and the student could reach the oral reading fluency benchmark without answering even one reading comprehension question correctly. For this reason, many educators question the validity of this assessment instrument, and many educators are concerned that students are being improperly placed with reading materials based on inaccurate data from the DIBELS test (Goodman, 2006; Kamii & Manning, 2005).

DIBELS is a scientifically validated instrument that can be used to assess early reading skills. The assessment provides formal, criterion-referenced data, meaning that students' scores are compared against an established benchmark (Farrell et al., 2006). In addition, many research studies have found DIBELS to be a predictive measure of success on high-stakes reading assessments in many states (Barger, 2003; Buck & Torgesen, 2003; Good, Simmons, & Kame'enui, 2001). DIBELS has been found to be highly correlated with a wide range of measures of reading readiness and achievement (Good et al., 2001). Although many educators are advocates of DIBELS, many educators also believe DIBELS assessment focuses solely on speed reading with little emphasis placed on reading comprehension (Goodman, 2006).

Kaminski, Good, and other DIBELS advocates believe a significant portion of what is being reported such as emphasis on speed, narrowing of the curriculum, and the use of data to make high-stakes decisions would be characterized as misuses of DIBELS (Kaminski & Good, 2007). For example, because all the measures are timed, many educators assume the DIBELS assessment places emphasis on speed. Kaminski & Cummings, (2007) explained DIBELS measures are timed to assess the mastery level of the skill being assessed and mastery of accuracy and speed indicates if the child is likely to remember, maintain, and apply the skills. Kaminski & Cummings further explained that all the timed measures are as unobtrusive as possible, and the students are encouraged to do their best reading. Kaminski & Cumming explained:

DIBELS was never created for labeling, tracking, or grading students for high-stakes decisions such as retention. At a systems level, DIBELS were not intended to be used to evaluate individual teachers or to be used for other systems-level high-stakes decisions, such as funding (p.12).

Considering the high level of instructional time and money invested in DIBELS and standardized assessments, educators must make sure these assessments are measuring accurate learning objectives.

High-Stakes Testing and No Child Left Behind Act

High-stakes testing is the practice of connecting consequences to low standardized test scores (IRA, 1999). Duffy, Giordano, Farrell, Paneque, & Crump, (2008) further defined high-stakes testing as “assessments that have direct and significant consequences for the person or institution being tested or assessed” (p. 54). Therefore, the results of a high-stakes assessment could positively or negatively affect the person being assessed.

NCLB is a legislative act that requires all states to assess students in reading and math in Grades 3-8, using state-designed assessments to hold schools accountable for the academic performance of students. The primary purpose of NCLB “is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards and state academic assessments” (U. S. Department of Education, 2002, p. 1439). Due to the emphasis placed on academic accountability, high-stakes testing and other mandated assessments have become the primary instrument used for measuring the academic performance of students (Duffy et al., 2008). NCLB not only requires schools to assess students, but also to publicly aggregate test scores in groups of students by gender, race, ethnicity, and learning disabilities to ensure all students receive an adequate education (U. S. Department of Education, 2002).

International Reading Association and High-Stakes Testing

The IRA is a global association that supports literacy professionals by disseminating research about reading, providing strategies to improve the quality of reading and by encouraging lifelong reading habits for all children (IRA, 2010a, 2010b). The IRA position statement (1999) has great concerns about the emphasis of using one test to make important decisions about students, teachers, and schools. Specifically, IRA is concerned that standardized testing is being used to control instruction versus guide educational decisions. The IRA position statement further explained tests are imperfect, and it is not wise to base crucial literacy decisions on limited and imperfect data and expect results.

According to the IRA position statement (1999), additional systematic rigorous and rich assessment environments are needed to gain confidence in test measures and test decisions. Thus, IRA discusses the importance of understanding the difference between ethical and unethical practices. The IRA educators explained it is unethical to devote substantial instructional time teaching to the test and focusing on groups of students who are most likely to raise test scores, while ignoring groups unlikely to improve test scores. The IRA further recommended conducting ongoing studies evaluating the impact high-stakes testing has on curriculum.

Statement of the Problem

In 1996, when the state of Alabama adopted the SAT the results indicated that more than 100,000 Alabama students in Grades 3-8 could not read (RMC Research Corporation, 2010). Since then, NCLB was implemented to hold educators accountable for students' academic performance in reading, mathematics, and science, by requiring all schools make adequate yearly progress (U. S. Department of Education, 2002). Therefore, the academic performance in reading is still a problem for many states (National Center for Education Statistics, 2009). In an effort to improve the academic achievement in reading, Alabama is using DIBELS (oral reading fluency) as a screening tool to determine which students are at-risk for reading failure (Alabama Department of Education, 2010).

Research Questions

1. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2009 school year?

2. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the ARMT during the 2009 school year?
3. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2010 school year?
4. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the ARMT during the 2010 school year?

Purpose of the Study

The purpose of this study was to determine if there is a relationship between third grade DIBELS (oral reading fluency) scores and the reading section of the SAT and the reading section of the ARMT. The research questions guided the study in determining whether screening data from DIBELS (oral reading fluency) is related to the reading section of the SAT and the reading section of the ARMT.

The research questions are significant in contributing important knowledge about assessments used to make educational decisions in elementary schools. Screening assessments (e.g., DIBELS) are often used to make instructional decision pertaining to the academic level of students participating in high-stakes testing. Furthermore, it is imperative that research is conducted to gain more insight into understanding how these tests are being used and to determine if a relationship exists between screening instruments and high-stakes assessments.

Significance of the Study

Many research studies suggest that oral reading fluency is an indicator of reading comprehension mastery on standardized reading assessments (Good et al., 2001).

DIBELS is an assessment instrument that would identify children who were not likely to read at grade level by the end of third grade (Farrell et al., 2006). A positive correlation between the DIBELS oral reading scores for third grade students and the reading scores on the third grade standardized reading tests would provide evidence to support the use of DIBELS data for guiding reading instructional practices, specifically predicting the academic performance of students in reading. Therefore, if the testing measures are associated or related, elementary teachers may continue using DIBELS to predict the academic performance on standardized reading assessments.

Definitions

Adequate Yearly Progress (AYP) - A school's ability to demonstrate that students are reaching the proficient level on reading/language arts and mathematics tests (NCLB, 2008).

Accountability- The process of requiring all students to show mastery in specified standards or demonstrate mastery of various content areas as measured by standardized test scores, as well as holding states, districts, and teachers responsible for the academic progress of all students based on adequate yearly progress (Kauchak & Eggen, 2005).

Alabama Reading and Mathematics Test (ARMT) - This is a third-eighth grade state assessment that provides information of students' mastery of reading and mathematics objectives taken from the Alabama Course of Study (Alabama Department of Education, 2010).

At-risk- This category includes students of low socioeconomic status; student who have difficulty participating in school because they are English language learners;

students with high dropout rates in their community; students with special education needs; students who are subject to poverty, homelessness, drugs, violence, life-threatening illness, or teen pregnancy; and students who have a history of failing school grades and frequency absences (Lemlech, 2010).

Dynamic Indicators of Basic Early Literacy Skills (DIBELS) - DIBELS is a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. DIBELS assessments are designed to be short (one minute) fluency measures used to regularly monitor the development of early literacy and early reading skills (DIBELS Data System, 2010).

High-stakes-testing - The practice of connecting consequences for high or low academic performance on assessments (IRA, 1999).

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents a summary of the literature related to reading and high-stakes assessments. Specifically, Chapter 2 explores historical reading issues and reforms, discusses DIBELS and controversial issues, and the theoretical framework of reading fluency in relation to comprehension. Research on the DIBELS assessment and high-stakes assessments is also discussed in this chapter.

Reading: A Historical Journey

Historically, reading assessments have been a controversial issue across the nation. Educators are constantly seeking innovative practices to close racial literacy gaps and improve the academic achievement of special needs students and at-risk students of all ethnic groups. Although countless educational documents provide evidence of literacy reforms throughout history, which method works best for students who struggle educationally is still a mystery for many elementary teachers. Year after year, millions of federal and state dollars are allocated for education. However, year after year many children in the United States are falling further behind, despite the accountability provisions from federal and state officials (National Center for Educational Statistics,

2010). Are we failing to adequately educate students and yet punishing them for not being adequately educated?

The Title I of Elementary and Secondary Education Act of 1965 was designed to improve the academic achievement of students living in low income areas and ensure equity for low-achieving children. It was implemented to ensure all students have the same opportunity to obtain a high-quality education and to achieve at least minimum literacy proficiency on state standards and assessments (U. S. Department of Education, 2002). Although the Act has been reauthorized and restructured several times to improve all students' achievement the battle to leave "No Child Behind" continues.

One of the most unforgettable historical documents discussed in the 1980's was the report on American education, *A Nation at Risk*. The report was created by a committee entitled the National Commission on Excellence in Education, which was appointed by the Secretary of Education in 1981. The committee included members with diverse educational backgrounds, such as classroom teachers, school board members, administrators, university professors, and other educators across the nation. The report discussed the quality of education in America, and found poor academic performance at nearly every level and warned that the education system was "being eroded by a rising tide of mediocrity" (National Commission of Excellence, 1983, p 1). In addition, the report indicated approximately 23 million American adults were considered functionally illiterate by the simplest tests of everyday reading, writing, and comprehension. The report became one of the most important educational reform documents of the 20th Century. In response to the literacy findings in *A Nation at Risk*, educators began various

educational reforms to address literacy (National Commission of Excellence in Education, 1983).

Becoming a Nation of Readers: The Report of the Commission on Reading by Anderson, Hiebert, Scott, & Wilkinson (1985), presents leading experts' interpretations of the knowledge of reading and effective reading instruction. The report extensively stressed the importance of the following elements of literacy instruction: having a purpose for reading, constructing meaning, understanding emerging literacy, understanding that reading is not discrete from the language arts, understanding the importance of integrating reading across the curriculum, and understanding that standardized reading tests do not assess all reading objectives. The authors described a skilled reader as one who can gain meaning from the text and use prior knowledge to understand what was read, while immature readers were described as letter-by-letter readers making little or no meaning. The commission emphasized reading is more than a process, and reading is an active, strategic, rewarding, and lifelong task (Anderson et al., 1985).

Not surprisingly, during the 1990's literacy still was the center of attention in education. In 1997, the National Reading Panel was assembled by Congress to assess the effectiveness of different approaches used to teach children to read. The panel included members with diverse educational backgrounds, such as classroom teachers, administrators, and reading experts across the nation. The panel performed the following duties: reviewed over 100,000 literacy studies on how children learn to read, selected the most effective evidence-based methods for teaching children to read, recommended several ways to disseminate reading information to schools, and gave an educational plan

for future research in reading. The final findings from the National Reading Panel indicated that the most effective approach to teaching reading included explicit instruction in the following: phonemic awareness, phonics instruction, fluency, vocabulary, and reading comprehension (National Institute of Child Health and Human Development, 2000).

On January 8, 2002, NCLB was signed by President George Bush. President Bush's educational reform plan contained changes to the Elementary and Secondary Education Act of 1965, (ESEA). The ultimate goal of NCLB is for all students, regardless of their gender, race, socioeconomic status, or disability, to become proficient in all targeted content areas, especially reading, by 2013. According to NCLB, it is imperative that the federal government focus on the academic success in Grades K-12, which is measured by the students' academic achievement on standardized tests. NCLB includes important reform components such as the following: stronger accountability, increased flexibility and local control for schools, expanded school options for parents, and an emphasis on teaching methods that have been research-based. Under NCLB mandates, each state is provided a goal and an assessment plan for low achieving groups, high-stakes testing data is used to determine if schools are meeting academic achievements (U. S. Department of Education, 2002). Although NCLB contains many advantages, many educators were displeased with the Act due to strict school sanctions and the major emphasis placed on standardized test scores.

Another intriguing part of educational data monitoring the nation's literacy progress is the National Assessment of Education Progress (NAEP), also known as The Nation's Report Card. The NAEP is the largest national assessment used to examine the

strengths and weaknesses of American students periodically in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history. According to National Center for Education Statistics, many fourth and eighth grade students are not proficient in reading, and the 2009 data indicated that the fourth-grade reading scores were flat, while eighth grade scores reflected only a slight gain. The failure rates among these students have been a concern over the past years (National Center for Education Statistics, 2009). Over the years, there have been many educational reform efforts created to improve and address the past and present challenges in literacy. Reading experts, federal and state officials, teachers, and parents have continued to search for ground-breaking techniques designed to address literacy issues.

Theoretical Framework for Reading Fluency

As stated earlier, the DIBELS (oral reading fluency) measure is used to identify children who were not likely to read at grade level by the end of third grade (DIBELS Data System, 2010). Although, the connection of oral reading fluency and reading comprehension may be unclear, from a historical perspective, the emphasis on fluency research has risen and declined over time. Despite the emphasis placed on reading fluency, there are many definitions for this term. Some educators define fluency in terms of accuracy and automaticity in word recognition, and many may define it as the ability to read effortlessly without affecting comprehension of the material read. Rasinski (2004) stated the following:

Reading fluency refers to the accurate and automatic decoding of the words in the text, along with expressive interpretation of the text, to achieve optimal comprehension. Fluency is important in reading, then, because it affects how well readers understand what they read (p 2).

The theory of automatic information processing by LaBerge and Samuels (1974) has been well-known for decades when discussing the reading process. The theory focuses on two main components of fluent reading: accurate word decoding and automaticity in word recognition. Due to the limited memory in the cognitive processing, the successful acquisition of accurate word decoding and automaticity in word recognition allows the reader to have more memory to focus on what is being read. Therefore, fluency and comprehension are related and fluency connects word recognition with comprehension. According to the theory, visual information is transformed through a sequence of stages until reading comprehension is acquired. The information that is read moves from visual, phonological, and episodic memory until it reaches semantic memory. One of the key elements of the automatic information processing theory is attention. Attention is an important element at each processing stage because of the presumption that individuals have limited time available to complete cognitive tasks, including reading tasks. LaBerge and Samuels' theory further explains that readers acquire automatic word recognition through consecutive experiences with print. As readers are provided with repeated opportunities or experiences with words, they should be able to identify words with increasing accuracy and automaticity. The automatic information processing theory explains that when readers are able to identify words automatically more attention is available for understanding what is being read. Rasinski (2004) further supported the importance of accuracy and automaticity as it is related to reading comprehension:

In a sense, then, reading fluency is multidimensional – one dimension stresses the importance of accuracy in word decoding, a second dimension focuses on quick and automatic recognition of words in connected text, and a third dimension

stresses expressive and meaningful interpretation of text. These dimensions are related to one another – accurate and automatic reading creates the conditions for expressive reading. All three are important for effective comprehension and overall good reading. All must be taught, and all must be monitored (p. 2-3).

The National Reading Panel was created to examine and assess the effectiveness of various reading approaches. The panel identified fluency as one of the five key components needed for successful reading achievement. According to the National Reading Panel, fluency is a critical element necessary for reading comprehension. In addition, the panel indicated fluency is neglected in many elementary classrooms, creating laborious and inefficient oral reading practices (National Institute of Child Health and Human Development, 2000). Literacy experts are now focusing on fluency and its connection to successful reading achievement (Grabe, 2010; National Institute of Child Health and Human Development, 2000; Osborn, Lehr, & Hiebert, 2003; Pikulski and Chard, 2005; Samuels, 2002).

Fluency and Comprehension

Fluency has been identified by the National Reading Panel as one of the evidence-based, key components of reading in 2000 (National Institute of Child Health and Human Development, 2000). Although, fluency has become a critical component of reading comprehension, a number of issues concerning fluency still exist (Allington, 2006a, 2006b). One of the main concerns that many educators have regarding fluency is whether current assessments of fluency measures word-reading efficiency rather than reading fluency. Buly and Valencia (2002) reported that one of five students who failed an Iowa state fourth-grade reading proficiency test read accurately and quickly, but with little to no reading comprehension. Therefore, reading rate is very important, but there

are distinctive characteristics between reading rate and reading fluency (Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004). In other words, the reading rate deals with the number of words read accurately in a given time frame with no indication of pattern or pitch changes in the connected speech, while reading fluency involves reading with expression and with appropriate intonation during phrases to increase reading comprehension.

Schwanenflugel et al. (2004) further explained that motivating struggling readers to practice speed-reading a list of words in hopes of improving their DIBELS performance is a problem. The researcher cautioned that several studies have demonstrated that encouraging students to speed-read does not improve text-reading performances. In a study conducted by (Carlisle, Schilling, Scott, & Zeng, 2004), the findings indicated that about half of the second and third graders who were predicted to be reading on grade level in the spring, based on the DIBELS assessment, actually performed below grade level on the Iowa Test of Basic Skills (ITBS). Similarly results reported by Pressley, Hilden, and Shankland (2005), indicated that DIBELS inaccurately predicted the reading performance on other reading comprehension assessments, and only measure how fast a child reads, but without regard to reading comprehension.

According to Allington (2006a), many children read word-by-word when they are trained to rely on the teacher, teacher aid, or other students instead of self-regulated reading strategies, which develop an autonomous learner. Many studies have shown that training students to identify words faster does not improve reading achievement (Kuhn & Stahl, 2003). Therefore, one of the most effective ways is to provide at-risk readers with multiple opportunities to develop self-monitoring skills and strategies (Kuhn, 2005a,

2005b). The readers will then employ self-regulating strategies to understand the text or material being read. An extensive amount of research exists on the positive effects of repeated-reading procedures when developing fluency (Kuhn & Stahl, 2003; National Institute of Child Health and Development, 2000). Kuhn (2005a, 2005b) noted that extensive independent reading activities produced comprehension gains that are not found in repeated reading techniques. Kuhn further explained that fluency is important, but a fluent reader does not guarantee a reader who can comprehend.

Indeed, scientifically-based studies (Allington, 1983; Chard, Vaughn, & Tyler, 2002) have established the importance of reading fluency and reading fluency instruction when teaching children how to read. Rasinski (2004) explained reading fluency as a bridge that joins fluency and accuracy at one end and joins fluency to comprehension through prosody on the other end. When the readers' attention is focused on identifying and pronouncing words, less attention is given to comprehension. Fluent readers read using stress, pitch variations, intonation, rate phrasing, and pauses at necessary punctuation marks to show they understand what they are reading (Dowhower, 1987, 1991; Schreiber, 1987, 1991).

Fluency Assessment

Rasinski (2004) discussed fluency assessment in terms of the following three components: “accuracy, or accurate decoding of words in text, automaticity, or decoding words with minimal use of attentional resources; and prosody, or the appropriate use of phrasing and expression to convey meaning” (p. 1). Educators can assess fluency using formal and informal assessments. Classroom teachers can select passages from grade

level materials or purchase commercially published passages. Teachers can conduct informal assessments by allowing the students to read aloud an unfamiliar passage at the student's independent reading level. As the student reads the passage, the teacher records word recognition errors, rate of reading, and use of expression. After the student has read the passage, the teacher asks comprehension questions to check for understanding (Osborn et al., 2003).

Formal assessments require teachers to administer fluency assessments to establish baseline data for each student. In most cases, the baseline data include the number of words read accurately in a leveled passage within one minute. During a formal assessment, as the student reads the passage, substitutions, mispronunciations, omissions, reversals, and hesitations for more than three seconds are marked as errors. After the student has read the passage, the student's fluency level is determined by the number of words read correctly within a minute. Although, this method is similar to the informal method, most formal assessments compare fluency scores to published oral reading fluency norms to establish benchmarks (Osborn et al., 2003).

Fluency can be assessed using informal reading inventories and with fluency rubrics such as six-point fluency rubrics, four point fluency rubrics, and multidimensional scales. Although there is an extensive amount of research on developing fluency, there is very little known about the assessment of fluency (Deno, Mirkin, and Chiang, 1982; Rasinski, 2004). Indeed, reading rate appears to be an essential and valid component that measures the decoding automaticity element of reading fluency and reading achievement in general, however, Rasinski (2004) stated "it does not mean that students should receive overt and intensive instruction and practice in becoming fast readers" (p. 13). Rasinski

further explained that effective instruction in fluency would improve rate and comprehension. Fluency with the absence of comprehension is simply insufficient in any educational setting (Pikulski & Chard, 2005).

DIBELS

The DIBELS Data System (2010) defines DIBELS as “a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade” (p. 1). The DIBELS test is designed to be brief (one minute) fluency measures used to monitor the development of early literacy and early reading skills. DIBELS was created by a team of professors and graduate students at the University of Oregon. Good, Kaminski, and other DIBELS team research leaders received several grants from the U.S. Department of Education to support research on DIBELS. DIBELS was developed as an assessment instrument that would identify children who were not likely to read at grade level by the end of third grade (Farrell et al., 2006). It was designed based on measurement procedures for Curriculum-Based Measurement (CMB), created by Deno and colleagues at the University of Minnesota in the 1970s-1980s (Deno, 1985; Deno & Fuchs, 1987; Deno & Mirkin, 1977; Shinn, 1989). Similar to the Curriculum-Based Measurement, DIBELS was developed to be an efficient indicator of a student’s progress toward achieving a general outcome (DIBELS Data System, 2010).

According to DIBELS Data System (2010), DIBELS is comprised of the following seven measures: initial sound fluency, phonemic segmentation, nonsense word fluency, oral reading fluency, retelling fluency, and letter naming fluency. Each measure assessed and the benchmark scores vary by the grade level of the student. DIBELS has

been found to be congruent with multiple measures of reading readiness objectives (DIBELS Data System, 2010). Many states are using DIBELS results as a predictive measure of success on high-stakes reading tests (Barger, 2003; Buck & Torgesen, 2003; Riedel, 2007).

DIBELS Risk Labels

DIBELS risk labels are category labels used to indicate if students are on track for meeting the required benchmark scores. The DIBELS risk categories are low risk, some risk, and at-risk. The numbers for the risk categories were developed by looking at scores collected from children in a reference group. Based on DIBELS research, benchmarks were created to establish levels of performance to predict the success for subsequent level of performance. The words, passages, and pictures used on the DIBELS test were selected from materials commonly used in K-3 classrooms, as found in the Educator's Word Frequency Guide. In addition to that, DIBELS research validated the words in regards to their predictive value for the framework for reading skills. All of the words that were determined to be the most predictive for foundational reading skills were entered in a database, and the words are random selected for each of the DIBELS measures (Farrell et al., 2006).

The DIBELS oral reading fluency passages have grade-level difficulty levels that are determined by various reading formulas. The passages are provided by the DIBELS oral reading fluency assessment. The difficulty levels of the passages may vary slightly according to the readability formulas. According to *DIBELS: The Practical Manual*, the students are required to read three oral reading passages (one minute per passage). The

first passage has the easiest grade-level difficulty, the second passage has the middle grade-level difficulty, and the third passage has the highest grade-level difficulty. The oral reading fluency section of DIBELS can be given to all students in grades first through third grade. However, if a child has a language impairment or stutters, the risk categories would not be valid for this student. Therefore, consultations with a language expert or other means are needed to determine the child's reading development (Farrell et al., 2006).

Scoring of Oral Reading Fluency

According to DIBELS Testing Manual, the purpose of the oral reading fluency section of the test is to measure whether the student can read connected text accurately and fluently. The oral reading fluency section is given to students in first through third grade. DIBELS oral reading fluency benchmark scores are taken at the beginning, middle, and at the end of the year for students in first through third grade, and the benchmark score vary for each grade level. The most important score is the end-of-year benchmark score, which indicates if the student met oral reading requirements for the year (Farrell et al., 2006).

During the oral reading section of DIBELS, each student is given three passages to read. The student will have one minute to read each passage. After each passage is read, the teacher scores each passage. The student's actual DIBELS score is derived from the middle numerical score from the three passages read. For example, if a student scored 35, 68, and 115, their DIBELS score would be 68. The student receives one point for each word read correctly, and no points are deducted for reading too fast or

eliminating the use of expression or intonation. If the same word is read incorrectly more than once it is still counted incorrectly each time read incorrectly, and students do not receive credit for skipped lines or words (Farrell et al., 2006). The ultimate goal of this section of the test is to reach the benchmark score within one minute. In many cases, comprehension is sacrificed to reach the benchmark score, and DIBELS has no penalties built in to prevent or discourage speed reading.

Oral reading benchmarks are classified as low risk, some risk, or at-risk. This study focused only on third grade students. Therefore, third grade students are considered on target or proficient if their scores fall in the low risk (110 words per minute or more) category. Students performing in the some risk zone (80-109 words per minute) indicate that they are less likely to achieve reading proficiency, if reading instruction is not changed or modified. At-risk scores (0-79 words per minute) indicate that the third students are highly unlikely to become proficient readers without significant changes in reading instruction (DIBELS Data System, 2010).

Related Empirical Studies

Many educators and researchers conducted studies to investigate the relationship between the DIBELS (oral reading fluency) assessment and high-stakes tests that assess reading comprehension. DIBELS has gained widespread use all over the United States as a literacy screening tool for at-risk students in grades K-3. This section presents several studies that evaluated the relationship between the DIBELS (oral reading fluency) test and high-stakes assessments.

Riedel (2007) conducted a quantitative study investigating the relationship between DIBELS, the Group Reading Assessment and Diagnostic Test (GRA+DE), and the TerraNova Reading subtest. The sample included a total of 1,518 first-grade students in the Memphis City Schools. There were 760 females and 758 males participating in this study. Most of the students who participated in this study were African American ($n = 1,395$; 92%), and the poverty rate of the students who participated was high, with 85% of the students qualifying for free or reduced lunches. Students were administered the DIBELS assessment at the beginning, middle, and the end of first grade, assessed with a reading comprehension assessment (GRA+DE) at the end of first grade, and the second grade TerraNova Reading assessment. Also, the teachers received training in the administration of DIBELS and GRA+DE from representatives from the publishing companies. Training sessions were provided by school representatives for the TerraNova Reading subtest. Receiver Operating Characteristic Analysis (ROC) and logistic regression were used as the main data analyses techniques to determine if first grade students' DIBELS oral reading scores correctly predicted first grade students' reading comprehension status. The results from the correlation for GRA+DE assessment ($r = .67$) and the TerraNova ($r = .54$) assessment indicated DIBELS oral reading fluency was a statistically significant predictor of reading comprehension, meaning the DIBELS assessment could predict the academic performance on the GRA+DE assessment.

Barger (2003) conducted a quantitative study at an elementary school located in Buncombe County in North Carolina. The purpose of the study was to determine if there was a link between the DIBELS oral reading fluency scores and reading achievement data measured by the North Carolina end of the year grade assessment. The study

included 38 third grade students, and no other information regarding the demographics was given. The students were assessed with DIBELS (oral reading fluency) the first week of May and given the North Carolina End of Grade reading assessment one week later. Pearson Correlation was used to analyze the data. In conclusion, the results indicated there was a strong correlation between oral reading fluency scores and the reading comprehension section of the North Carolina End of Grade reading assessment ($r = .73$). Specifically, 24 out of 38 students reached the end of the year DIBELS benchmark of 110 words per minute or higher. Also, 22 of the 24 reached Level IV (above average) on the North Carolina End of Grade reading assessment, and two students reached Level III (at grade level) on the North Carolina End of Grade reading assessment. In the final results, all 24 students that reached the DIBELS (oral reading fluency) spring benchmark scored at or above grade level on the North Carolina End of Grade reading assessment.

In a similar study, Buck and Torgesen (2003) conducted with a Florida school district with third grade students ($n = 1,102$). The sample size was 49% female and 51% male, which represented each gender proportionally. The racial demographics included 83% white, 7% African American, 6% Hispanic, and 3% as other. In addition, 1% of the students were classified as limited English proficient, 19% of the students were classified as exceptional learners under IDEA, and 46% of the students received free or reduced lunch. The purpose of the study was to determine whether performance on brief one-minute measures of oral reading fluency were predictive of reading achievement as measured by the reading portion of the Florida Comprehensive Assessment Test-Sunshine State Standards (FCAT-SSS). The 13 participating schools provided 2003 data

from the curriculum-based measures of oral reading fluency and scores and data from the FCAT-SSS. Also, only the median scores were used from the oral reading fluency measures. A Pearson Correlation was used to analyze the data. The findings indicated there was a significant correlation between oral reading fluency scores and the reading section of the Florida Comprehensive Assessment Test-Sunshine State Standards. The oral reading fluency scores ($r=.70$) accurately predicted the proficiency level on the comprehension section of the FACAT-SSS.

Another study conducted on the predictive validity of DIBELS oral reading fluency measures was conducted by Schilling, Carlise, Scott, and Zeng (2007). The researchers were determining if the DIBELS oral reading fluency scores were predictive of the reading section of the Iowa Tests of Basic Skills. The study included students in first through third grade from 44 different schools in nine local school districts or local educational agencies that make up the first Reading Cohort in Michigan. The racial/ethnic groups included the following: 60.64% percent African American, 24.86% White, 13.12% Hispanic, .86% Native American, and .51% Asian American. In addition, 81.46% of the students were considered economically disadvantaged, 15.83% of the students were considered limited English proficiency, and 8.50% of the students had disabilities. Teachers received training to administer the DIBELS assessment and the Iowa Tests of Basic Skills by Reading First literacy coaches (employed by the schools). Teachers were given further practice administering the assessments at grade-level meetings held at their schools. During the administration of DIBELS, literacy coaches assisted with DIBELS testing and entering the DIBELS results into the web-based database. No other information was given regarding the accuracy of DIBELS data

collection. A Pearson Correlation was used to determine if there was a relationship between DIBELS and the Iowa Tests of Basic Skills. The findings (.65 to .75) from the study indicated that the performance on DIBELS was significantly related to the performance on the Iowa Tests of Basic Skills.

Wilson (2005) conducted a study to determine if there was a correlation between third grade students who reached benchmark level on DIBELS (oral reading fluency scores) and the Arizona Instrument to Measure Standards (AIMS) reading proficiency test. The study included 241 students from three schools in Arizona that received funding from a Reading First grant from the U.S. Department of Education. The sample size included males (n=131) and females (n=109). Third grade DIBELS scores (median scores) from the end of the year were used to conduct the study. The students were classified in the following categories: at-risk (less than 80 words per minute), some risk (between 80 and 109 words per minute), and low risk (110 words per minute or higher). Also, the Arizona Instrument to Measure Standards scale scores and proficiency levels (meet/not meet standard) from the end of the year were used. A Pearson Correlation was used to analyze the data. The results from the study indicated there was a positive correlation between AIMS and DIBELS (oral reading fluency) scores. The overall group was positive and moderately large ($r = .74$). In addition, 81.9% of students in the low-risk (benchmark) category on DIBELS were proficient on AIMS, 93% of students in the at-risk (below benchmark requirements for oral reading fluency) category on DIBELS were unable to meet proficiency on AIMS, and 51% of students in the some-risk category on DIBELS were proficient on AIMS. In conclusion, the findings indicated that DIBELS (oral reading fluency scores) could identify those students who are likely to meet the

proficiency standards on AIMS with good accuracy, and students who are unlikely to reach proficiency.

Although there is an extensive body of research that supports DIBELS (oral reading fluency) scores as a predictive measure for reading achievement, there is research that does not support the use of DIBELS (oral reading fluency) assessment. For example, Pressley, Hilden, and Shankland (2005) conducted a study with 191 third grade students, from four different elementary schools, in a small school district in a Midwest urban area. The researchers conducted the study to determine if DIBELS (oral reading fluency scores) could accurately predict performance on the TerraNova (reading comprehension assessment). Each participant's median oral reading fluency score was used to predict the academic performance on the TerraNova reading assessment. A Pearson correlation was the main data analysis technique used to determine if DIBELS (oral reading fluency scores) could accurately predict performance on the TerraNova (reading comprehension assessment). The results ($r=.446$) indicated DIBELS provided a poor prediction of how students would perform on the TerraNova reading assessment. In addition to those results, data from the retelling section of DIBELS also supported the weak correlation between DIBELS (oral reading fluency scores) and the TerraNova reading assessment. First, according to the DIBELS manual, if a student's retelling score is approximately 50% of their oral reading fluency score, the oral reading fluency scores would indicate a good overall measure of reading proficiency, including comprehension (Farrell et al., 2006). Therefore, if the retelling score is less than 50%, there is a reason for concern regarding reading comprehension. The retelling results were the following: 33% of students had oral retelling scores at or greater than 50% of their oral reading fluency

score, approximately 45% had retelling scores that were between 25% and 50% of their oral reading fluency scores, and 22% of the students had retelling scores that were less than 25% of the oral reading fluency scores. The researchers concluded that the DIBELS oral reading fluency section was not an accurate indicator of reading comprehension, and it is essential that further research should be conducted especially, since DIBELS data is used to identify at-risk students.

Many critics argue that educators are using DIBELS data to make critical decisions pertaining to promotion and retention, as well as using student data results to evaluate teachers' reading instruction. One of the most controversial issues with DIBELS is teachers are "teaching to the test" rather than using DIBELS as an indicator to facilitate reading instruction (Kaminski & Cummings, 2007). DIBELS critics are also concerned that many educators are misinterpreting the meaning and purpose of the "fluent reader" due to the National Reading Panel emphasis on the importance of fluency. The National Reading Panel describes a fluent reader as one who can "read orally with speed, accuracy, proper intonation, and proper expression" (National Institute of Child Health and Human Development, 2000, p. 11). Indeed, the National Reading Panel report explicitly discusses the importance of fluency, and states a fluent reader must also comprehend what he or she reads, and reading fluency is a crucial element necessary for reading comprehension. In regards to DIBELS and fluency, many teachers have disconnected fluency from comprehension and are trying to meet DIBELS benchmark goals by focusing on speed or the number of words read correctly rather than fluency and comprehension (Wide, 2006).

Justification

As indicated throughout the literature, fluency has become the focal point of instruction and assessment in K-3 schools (Allington, 2006a). Alabama, along with many other states, is using DIBELS (oral reading fluency) scores to identify at-risk readers and to predict reading comprehension scores on high-stakes assessments (Alabama Department of Education, 2010). Many educators question whether current measures of fluency are assessing word-reading efficiency, rather than reading fluency (Mathson, Solic, & Allington, 2006). Related literature included research studies that supported the use of DIBELS (oral reading fluency) scores to predict the academic performance on high-stakes assessments (Barger, 2003; Buck & Torgesen, 2003) and included studies and research that provided evidence that DIBELS (oral reading fluency) scores were not a valid predictor for reading comprehension on high-stakes assessments (Carlisle et al., 2004; Pressley, Hilden, & Shankland 2005). Therefore, it is necessary to further examine DIBELS (oral reading fluency) scores as a predictor of high-stakes assessments. This study examined if the DIBELS (oral reading fluency) assessment is an accurate screening tool for identifying at-risk readers. Specifically, the study examined the relationship between DIBELS (oral reading fluency) scores and the reading section of the SAT and the reading section of the ARMT and the reading section.

Summary

The purpose of Chapter 2 was to examine related or similar research conducted on the DIBELS (oral reading fluency) assessment and high-stakes tests. In order to fully understand relevant issues associated with reading, historical reading reforms were

reviewed and discussed. Research regarding high-stakes testing practices was examined to understand how these practices influenced research and educational practices in various school districts. In addition, research on reading fluency was examined to understand how, why, and if fluency was connected to reading comprehension. The review of literature in this chapter provides the basis for this investigation.

CHAPTER III

METHODOLOGY

Previous research studies have indicated that DIBELS oral reading fluency scores are predictive of third grade reading comprehension as measured by high-stakes reading assessments (Barger, 2003; Buck & Torgesen, 2003; Good, et al., 2001; Shaw & Shaw, 2002). The purpose of this study was to investigate the relationship between DIBELS oral reading fluency scores and the reading comprehension section of the SAT and the ARMT. This chapter reviews the research questions, describes the participants, research context, data collection procedures, instrumentation, research design, and the data analyses that was used to conduct the study. Several research questions were investigated to determine the relationship between DIBELS and the high-stakes assessments for the 2009 and 2010 school year.

Review of Research Questions

1. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2009 school year?
2. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the ARMT during the 2009 school year?
3. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2010 school year?

4. Is there a relationship between DIBELS oral reading fluency scores and the reading scores on the ARMT during the 2010 school year?

Participants

Archival data from a total of 46 African American third grade students who were assessed with the DIBELS (oral reading fluency) assessment and the reading section of the SAT and the ARMT during 2009 and 34 African American third grade students who were assessed with DIBELS (oral reading fluency) scores and the reading section of the SAT and the ARMT during 2010 was used for this study. The demographics for 2009 included the following: 100% African American, 61.70% male, 38.30% female, 2.13% classified with a learning disability, 95.74% classified for free lunch, and 95.74% classified as poverty. The demographics for 2010 included the following: 100% African American, 41.18% male, 58.82% female, 11.76% classified with a learning disability, 94.12% classified for free lunch, and 97.06% classified as poverty. The school serves approximately 405 African American students in Grades K-8. The participants were enrolled in a public school district located in a small, rural system located in a southeastern state (Alabama Department of Education, 2010).

Research Context

According to the 2000 census data, the population for this area was approximately 14,798. The racial demographics include the following: 25.92% white, 73.17% African American, 0.09% Native American, 0.10% Asian, 0.01% Pacific Islander, 0.18% from other races, and 0.52% from two or more races. The average household income during the year of 2000 was \$18,911, and the average family household income was \$23,176. In

addition, the per capita income was \$11,491, and approximately 32.90% of families and 38.70% of the total population for this area were below the poverty line (U. S. Census Bureau, 2010).

Data Collection Procedures

Before conducting the study, the researcher obtained permission from the Mississippi State University Institutional Review Board (IRB) to ensure research procedures were ethical and appropriate for this study. After receiving approval from the IRB board, the researcher obtained written approval from the superintendent of the school district and the principal of the elementary school. All personal identifiers listed on the archival data were removed by a school administrator prior to the study. The school identity was not used in this study to preserve the confidentiality of school results. The researcher collected pre-existing data from the DIBELS (oral reading fluency) assessment, the reading section of the SAT, and the reading section of the ARMT for the 2009 and 2010 school years. The students' scores were coded by numbers and entered into a Microsoft Excel spreadsheet.

Instrumentation

The researcher collected data on third grade students for the 2009 and 2010 school years from screening assessments (DIBELS), the reading comprehension scores from the SATs, and the reading scores from the ARMTs. A Microsoft Excel Spreadsheet and a SPSS 19.0 Data Analysis program were used to organize and analyze data. The researcher selected these reading assessments because these are the assessments used by the state of Alabama to determine the students' academic performance in reading for their

students (Alabama State Department of Education, 2010). Table 1 displays the reading objectives assessed by each assessment and the time frame in which each assessment was given. The next section of this chapter will thoroughly describe each assessment instrument that was used in this study.

Dynamic Indicators for Basic Early Literacy Skills

DIBELS was developed by Good and Kaminski, university professors at University of Oregon, to identify students who may be at-risk of reading difficulties (DIBELS Data System, 2010; Farrell et al., 2006). The DIBELS assessment served as a screening device to assist elementary teachers in identifying and providing instruction for students who may be at-risk in reading. DIBELS measures are conducted during fall, winter, and spring of each academic school year. The DIBELS assessment includes quick one-minute assessments that measure the following: (1) initial sound fluency, (2) phoneme segmentation fluency, (3) nonsense word fluency, (4) oral reading fluency, (5) retell fluency, (6) word use fluency, (7) and letter name fluency (DIBELS Data System, 2010). Each grade level focuses on different measures and has different benchmarks. Third grade focuses on oral reading fluency and the retelling section of DIBELS. The retelling section of DIBELS is optional (Farrell et al., 2006). This study only used DIBELS (oral reading fluency) scores from the spring of 2009 and the 2010 school years because DIBELS (oral reading fluency) scores were used to predict the performance on the reading section of the Stanford Achievement and the reading section of the ARMT.

Table 1 Summary of Assessment Objectives

Assessments	Literacy Skills Assessed	Timeline of Administration
DIBELS (3rd Grade)	<ul style="list-style-type: none"> • Oral reading fluency with connected text (3 passages read/median score taken) • Retell Fluency (optional portion of assessment) 	<ul style="list-style-type: none"> • Beginning, middle, and end of school year (March 2009/April 2010)
SAT (reading section)	<ul style="list-style-type: none"> • Reading Vocabulary • Reading Comprehension: informational, technical, literary, and persuasive text 	<ul style="list-style-type: none"> • Spring (March 2009/2010)
ARMT(reading section)	<ul style="list-style-type: none"> • Phonetic analysis to multiple-syllable words • Demonstrate reading vocabulary knowledge • Use strategies to comprehend literary and recreational materials • Use strategies to comprehend functional and textual/informational materials 	<ul style="list-style-type: none"> • Spring (March 2009/2010)

During the DIBELS assessment, each student reads three passages. Scripted instructions are read aloud to each student and the score is determined by the number of words read correctly in a minute. If a student gets to a word he or she cannot identify, the student is given three seconds to pronounce the word. After three seconds, the trained evaluator reads the word aloud and marks it as a miscue. The student is given a total of three passages, and each passage is timed for one minute. After the three passages have been scored, the median score of all three passages is taken. The cutoff score is measured by the number of words read correctly in a minute, which is 110 words or higher.

Students scoring 80-109 words per minute are considered some risk, and students scoring 0-79 words per minute are considered at-risk students (Farrell et al., 2006). Table 2 displays third grade DIBELS (oral reading fluency) benchmark goals.

Table 2 Summary of Benchmark Goals

Oral Reading Fluency Status	Scores
At-risk	0-79
Some Risk	90-109
Low Risk	110 ⁺

The reliability and validity was documented by Good in a technical report entitled *Assessment Committee Analysis of Reading Measures* (2002). According to the report, the validity of DIBELS was tested using multiple concurrent 60 second probes using different passages with second grade students, and the reliability was examined using alternate forms of the DIBELS (oral reading fluency) assessment. There was evidence of concurrent validity for oral reading fluency for second graders (.93 to .96). The reliability results indicated that all of correlations were significant, $< .01$ (Assessment Committee Analysis of Reading Measures, 2002).

Stanford Achievement Test Tenth Edition

Harcourt Assessment, Inc. developed the SAT. The SAT is a standardized state assessment given at the end of the year to students in grades 3-8. The purpose of this assessment is to compare individual and group performance with a norming group. Each test administrator receives scripted test instructions. The test format includes all multiple choice test items. The reading section includes vocabulary and reading comprehension questions. This test is not timed and the test administrator monitors the class carefully to ensure that confidentiality and security measures are followed. All test materials are returned immediately to the counselor after each testing session. At the end of the testing period, the counselor or testing coordinator makes sure all testing materials from all tested grades are returned to school's district board of education (Alabama Department of Education, 2010).

This assessment utilizes norm-referenced scores to compare a student's performance with the norming group's performance. The scoring report of the SAT includes the following: (1) raw number correct, (2) mean number correct, (3) national percentile ranks, (4) national stanines, (5) national grade percentile ranks, (6) cluster ranges, and (7) achievement/ability comparison range. Specifically, the performance classifications for the stanines are as follows: (1) stanine 1-3 (below average), (2) stanine 4-6 (average), (3) and stanine 7-9 above average. In addition, the percentile rank performance classification is as follows: (1) 0-22 below average, (2) 23-76 average, and (3) 77⁺ above average (Alabama Department of Education, 2010).

According to the SAT Series (2010), the SAT has been through numerous reliability and validity checks. Harcourt test validity is based on the following: (1) test

content, (2) response process, (3) internal structure, (4) relationship to other variables, (5) convergent and discriminate analysis, (6) test criterion relationships and consequences of testing. In addition, the SAT supports the 24 validity-related standards found in the standards for educational and psychological. The Harcourt publishing company has integrated the various types of evidence of validity which included evidence from previous studies as well as new Stanford 10 related studies testing (American Educational Research Association, American Psychological Association, & National Council on Measurement and Education, 1999).

Harcourt has integrated the various types of evidence of validity into a framework that supports the intended interpretation of Stanford 10 test scores for specific uses. This framework encompasses evidence from previous studies as well as new Stanford 10 related studies (Alabama Department of Education, 2010). The SAT is a nationally well-known assessment that is considered a standard for assessing academic progress. The reading section of the SAT received an alpha reliability rating of .87. This test has been administered for 80 years, and it is used as an assessment tool for meeting NCLB (Stanford 10 Achievement Series, 2010; Alabama Department of Education, 2010).

The Alabama Reading and Math Test

The ARMT a criterion-referenced test, is based on Alabama's academic content standards in reading and mathematics. The test is administered in grades 3-7 in the spring of each year. The primary purposes of this assessment include the following: to assess students' mastery of state content standards in reading and mathematics, to report individual and group performance, to report strengths and weaknesses of individuals and

groups, and to provide data to study changes in performance over time. The test contains selected items from the SAT, which matches the Alabama state content standards in reading and mathematics. Additional test items were added to the ARMT to ensure all content standards are fully covered. Therefore, this assessment has a combination of SAT items and other test items that address content standards in reading and mathematics. The ARMT assessment has a 100% alignment to the Alabama state content standards in reading and mathematics (Alabama Department of Education, 2010).

The ARMT assessment is a timed assessment but 30 additional minutes is provided for each subtest. The reading passages are one to and one-half pages long. The ARMT assessment includes three types of reading: literary/recreational textual/informational, and functional. Reading is assessed using a variety of genres such as: stories, poetry, subject texts, and brochures. The reading section of this test includes both multiple-choice questions and open-ended questions. The open-ended questions are scored from 1-3 according to the following: 0 indicates that the student may have attempted to answer the question but the response is inaccurate, insufficient, or off task, a score of 1 indicates the student demonstrated limited understanding, and 3 indicates a thorough understanding of the information. The test results of the ARMT assessment are reported in four achievement levels: (1) Level IV exceeds academic content standards, (2) Level III meets academic content standards, (3) Level II partially meets academic content standards, (4) and Level I does not meet academic content standards (Alabama Department of Education, 2010).

The ARMT Assessment has been through numerous reliability and validity checks. In 2004 and 2005, a final set of assessments that included six operational ARMT

test forms was developed after rigorous field tests were conducted. To further assess the validity of the assessment, test items were reviewed by content committees with joint meetings with representatives from the Alabama Department of Education and representatives from the Pearson Publishing Company. In addition, data from field test items were reviewed by the Alabama Content and Bias Committee to ensure test questions were not biased. The Content and Bias Committees included educators representing various state board districts in Alabama. Specifically, each grade level and content area had 9-12 committee members including one Alabama Department of Education content specialist and one Pearson Publishing content specialist. The Alabama Content and Bias Committees analyzed the results from the field tests to guide decisions for the developing ARMT assessments (Alabama Department of Education, 2010).

To assess the reliability of the ARMT assessment, item response theory (IRT) models were utilized to make sure items were placed on a common level of difficulty ensuring that all the scores could be placed on a common ability scale. The amount of precision on the ARMT assessment scores was given utilizing measures of reliability and standard error of measurement. The reliability estimates was computed using the Cronbach's coefficient alpha for all of the ARMT assessments. The coefficient alpha was used to estimate internal consistency of both dichotomously (right or wrong, 0 or 1 score values) and polytomously (a wide range of score values) scored test items (Alabama Department of Education, 2010).

Research Design

This quantitative study utilized a correlational research design to describe the relationship between two variables by using a correlation coefficient (Clark & Creswell, 2010). The correlation coefficient was a decimal, ranging from 0.00 and +1.00 or -1.00. The value of the coefficient indicated the strength of the relationship between the variables. Therefore, the closer the coefficient is to +1.00 or -1.00, the stronger the relationship. The sign of the coefficient indicated if the relationship between the variables was negative or positive (Fraenkel & Wallen, 2006). A correlational research design was selected for this study because it allowed the researcher to determine if there is a relationship between DIBELS (oral reading fluency) and the reading section of the SAT and the reading section of the ARMT without any attempt to influence or manipulate variables. Pre-existing data from 2009 and 2010 from all three assessments were used to conduct this study.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) version 19.0 was used to conduct the analyses in this research study. The correlational coefficient, Pearson's correlation (r) and the Spearman Correlation were the primary statistical measures used in this research study. Specifically, the correlation analyses determined if there was a relationship between DIBELS (oral reading fluency scores) and comprehension results from the SAT, and the reading section of the ARMT. The test assumptions for the Pearson Correlation test included the following: (1) interval or ratio variables, (2) variables are normally distributed, and (3) linear relationship. The test assumptions for

the Spearman Correlation included interval or ordinal data variables. Normally distributed variables and a linear relationship between variables did not apply to the Spearman Correlation tests.

The data analysis procedures for each research question varied. Table 3 presents a summary of the research questions, variables, and the data analyses used to conduct this study. The first research question examined the relationship between the third grade DIBELS (oral reading fluency scores) and the third grade reading scores on the SAT during the 2009 school year. The variables included the individual reading scores from the SAT and the individual reading scores from the DIBELS assessment (oral reading fluency). Both variables were quantitative (interval). All of the students' scores were examined using descriptive statistics to determine the mean and median value for each data set for both assessments. Histograms were generated for both groups to assess the normality of the data sets. In addition, scatterplots were generated to determine if the data sets were linear. The inferential statistical test that was conducted to examine the relationship between the two variables was the Pearson Correlation test.

The second research question examined the relationship between the third grade DIBELS oral reading fluency scores and the third grade reading scores on the ARMT during the 2009 school year. The variables included the individual reading scores on the ARMT and the individual scores on the DIBELS assessment (oral reading fluency). The reading data from the ARMT was reported using ordinal numbers. Therefore, this data set was coded using ordinal values. The proficiency levels assigned to the ordinal numbers for DIBELS (oral reading fluency scores) and the reading section of the ARMT were the following (1) not proficient (2) partially proficient, and (3) at or above

proficiency level (Alabama Department of Education, 2010). The inferential statistical test that was used to examine the relationship between the two variables was the Spearman correlation test. All of the students' scores were examined using descriptive statistic to determine the mean and median value for each data set. Histograms were generated for both groups to assess the normality of the data sets.

Table 3 Summary of Research Questions and Statistical Measures

Research Questions	Variables	Data Analysis
1. Is there a relationship between DIBELS (oral reading fluency scores) and the reading scores on the SAT during the 2009 school year?	<ul style="list-style-type: none"> • 2009 Stanford Ten Achievement reading scores (interval variable) • DIBELS (oral reading fluency) 	• Pearson Correlation
2. Is there a relationship between DIBELS (oral reading fluency scores) and the reading scores on the ARMT during the 2009 school year?	<ul style="list-style-type: none"> • 2009 Alabama Reading and Math reading scores (ordinal variable) • DIBELS (oral reading fluency) 	• Spearman Correlation
3. Is there a relationship between DIBELS (oral reading fluency scores) and the reading scores on the SAT during the 2010?	<ul style="list-style-type: none"> • 2010 SAT reading scores (interval variable) • DIBELS (oral reading fluency) 	• Pearson Correlation
4. Is there a relationship between DIBELS (oral reading fluency scores) and the reading scores on the ARMT during the 2010 school year?	<ul style="list-style-type: none"> • 2010 ARMT reading scores • DIBELS (oral reading fluency) 	• Spearman Correlation

Question 3 examined the relationship between the third DIBELS oral reading fluency scores and the third grade reading scores on the SAT during the 2010. The variables included the individual reading scores from SAT and the individual reading

scores on the DIBELS (oral reading fluency) assessment. The variables were quantitative (interval). Descriptive statistics was used to determine the mean and median value for each data set. Histograms were generated for both groups to assess the normality of the data sets, and scatterplots were generated to determine if the data sets were linear. The Pearson Correlation test was used to examine the relationship between both variables.

The fourth research question examined the relationship between the third grade DIBELS oral reading fluency scores and the third grade reading scores on the ARMT during the 2010 school year. The variables included the individual reading scores on the ARMT and the individual scores on the DIBELS assessment (oral reading fluency). As indicated in research question 2, the reading data from the ARMT were reported using ordinal numbers. Therefore, both data sets were coded using the same ordinal values reported in question 2. All of the students' scores were examined using descriptive statistics to determine the mean and median value for each data set. Histograms were generated for both groups to assess the normality of the data sets. The inferential statistical test that was used to examine the relationship between the two variables was the Spearman correlation test. The predetermined alpha level for this study was 0.05, a common alpha level for educational research. There is a significant association or relationship if the $p < \alpha$; the sign of the r indicates if the relationship is positive (+) or negative (-) and the value of r (0.-1.00) indicates the strength of the relationship (McMillan & Wergin, 2006).

CHAPTER IV

RESULTS

Chapter 4 presents the results from the statistical analyses conducted for this study. The purpose of this study was to determine if there was a relationship between the third grade DIBELS (oral reading fluency) scores and the reading section of the SAT and the reading section of the ARMT for the 2009 and 2010 school year. The data for this study were analyzed by descriptive statistics and inferential statistics using SPSS, with an alpha level of 0.05. The results are organized by research question.

Results by Research Questions

Research Question 1 examined the relationship between the DIBELS (oral reading fluency) scores and the reading scores on the SAT during the 2009 school year. Table 4 shows a breakdown analysis of the students' academic performance on the DIBELS (oral reading fluency) assessment, the reading section of the SAT, and the reading section of the ARMT. The participants included 46 students from three third grade classrooms. Data from the descriptive statistics indicated that the mean score from the DIBELS (oral reading fluency) assessment exceeded the cutoff score of 110, proficiency level. However, the mean score did not exceed the cutoff score (593) for the SAT (see Table 4).

Table 4 Summary of Descriptive Statistics for Assessments

Assessment	M	SD	Passing Cutoff	N
DIBELS (oral reading fluency) 2009	118.37	32.64758	110	46
SAT (reading section) 2009	589.956	34.220	593	46
ARMT(reading section) 2009	2.74	.855	3	46
DIBELS (oral reading fluency) 2010	107.50	36.53	110	34
SAT (reading section) 2010	586.55	35.80	593	34
ARMT (reading section) 2010	2.59	.925	3	34

Note. M = Mean; SD = Standard Deviation; N = Number of Third Grade Participants.

Table 5 shows the academic performance of students meeting the benchmark score on all third grade assessments. Specifically, the total percentage of the students who met the cutoff score on DIBELS (oral reading fluency) was 72%. However, only 37% of the students who met the DIBELS (oral reading fluency) cutoff score met the cutoff score on the reading section of the SAT. Twenty-two (22%) percent failed to meet the cutoff score on both assessments, DIBELS (oral reading fluency) and SAT. The total percentage of students who met the cutoff score on the SAT alone was 43% and only 5 of these students failed to meet the DIBELS (oral reading fluency) cutoff score.

Table 5 Summary of Students' Academic Performances

Assessment Description	Year 2009	Year 2010
Number of students meeting the cutoff score for DIBELS	33 (72%)	21 (62%)
Number of students meeting the cutoff score for SAT	20 (43%)	11 (32%)
Number of students meeting the cutoff score for ARMT	26 (57%)	15 (44%)
Number of students meeting cutoff score for DIBELS and SAT	17 (37%)	10 (29%)
Number of students meeting cutoff score for DIBELS and ARMT	19 (41%)	13 (38%)
Number of students meeting cutoff score for DIBELS and not SAT	12 (26%)	11 (32%)
Number of students meeting cutoff score for DIBELS and not ARMT	13 (28%)	8 (24%)
Number of students meeting cutoff score for SAT and not DIBELS	5 (11%)	1 (3%)
Number of students meeting cutoff score for ARMT and not DIBELS	6 (13%)	2 (6%)
Number of students scoring below the cutoff score for DIBELS and SAT	10 (22%)	12 (35%)
Number of students scoring below the cutoff score for DIBELS and ARMT	7 (15%)	11 (32%)

Note. SAT = Stanford Achievement Test; ARMT = Alabama Reading and Math Test.

Before conducting the Pearson's Correlation analysis, each data set was graphed using a histogram to ensure neither data set was highly skewed. Figures 1 and 2 indicated both data sets were normally distributed, which met the requirement for

conducting the Pearson Correlation. The Pearson Correlation was conducted to determine if there was a relationship between DIBELS (oral reading fluency scores) and the reading section of the SAT during 2009. The results indicated that there was a moderate relationship between DIBELS (oral reading fluency scores) and the reading section of the SAT during 2009 school year ($r = .556, p < 0.05$). Figure 3 illustrates the relationship of the variables using a scatterplot. The location of the dots on the scatterplot indicated a positive linear relationship between the two variables. The SAT scale score is shown on the vertical y-axis and the DIBELS (oral reading fluency) scale score is shown on the horizontal x-axis of the scatterplot.

Research question 2 examined the relationship between the DIBELS (oral reading fluency scores) and the reading scores on the ARMT during the 2009 school year. The participants included 46 students from three third grade classrooms. Table 4 shows the mean and standard deviation for the reading section of the ARMT. The calculated mean value for the reading section of the ARMT was $M = 2.74$, which fell below the proficiency level.

Ordinal values were reported for the reading section of the ARMT. The ordinal values represented the following proficiency levels: 1 was considered to be below proficiency, 2 was considered to be partially proficient, 3 was considered to be at proficiency, and 4 was considered to be exceeding proficiency.

The total percentage of the students scoring at or above proficiency on the reading section of the ARMT was 57%. Only 41% of the third grade students who met the cutoff score for DIBELS scored at or above the proficiency level on the reading section of the ARMT. Furthermore, 28% of the students who met the cutoff score for the DIBELS (oral reading fluency)

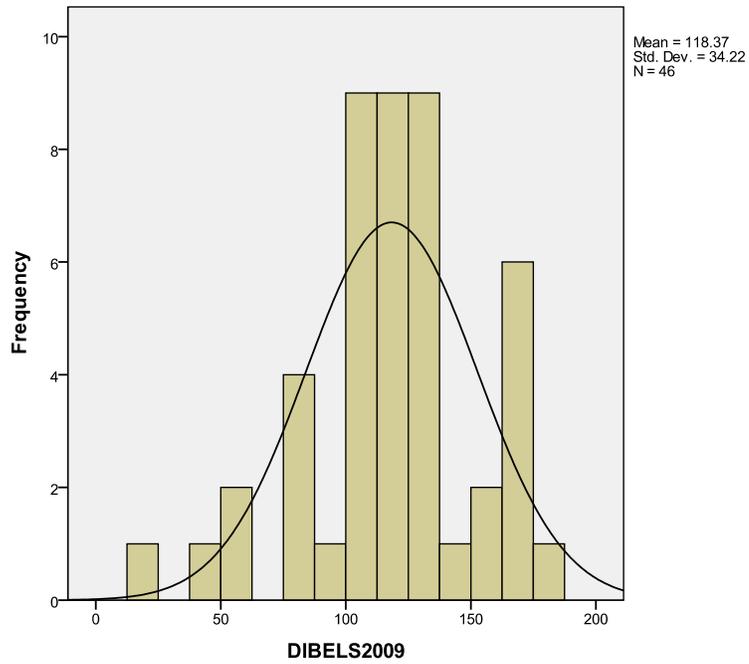


Figure 1 Histogram of 2009 DIBELS Oral Reading Fluency Scores

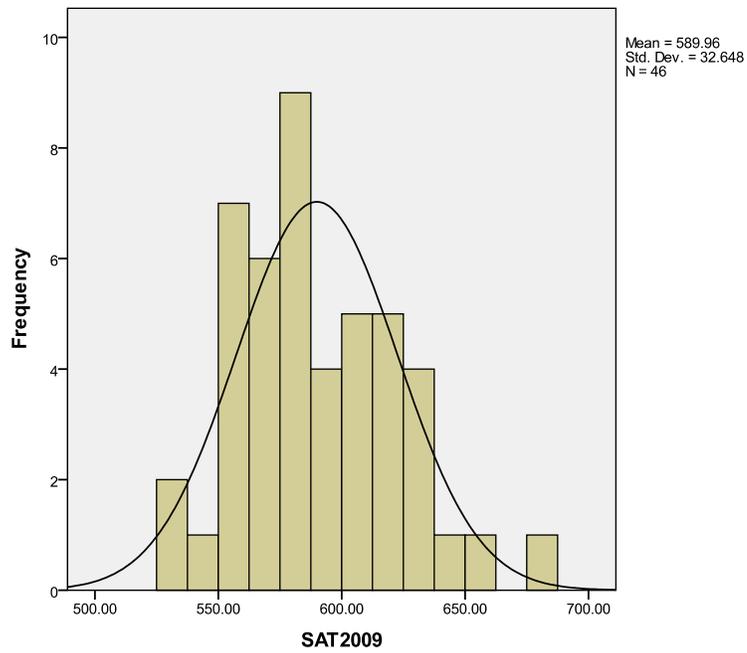


Figure 2 Histogram of 2009 Stanford Achievement Reading Scores

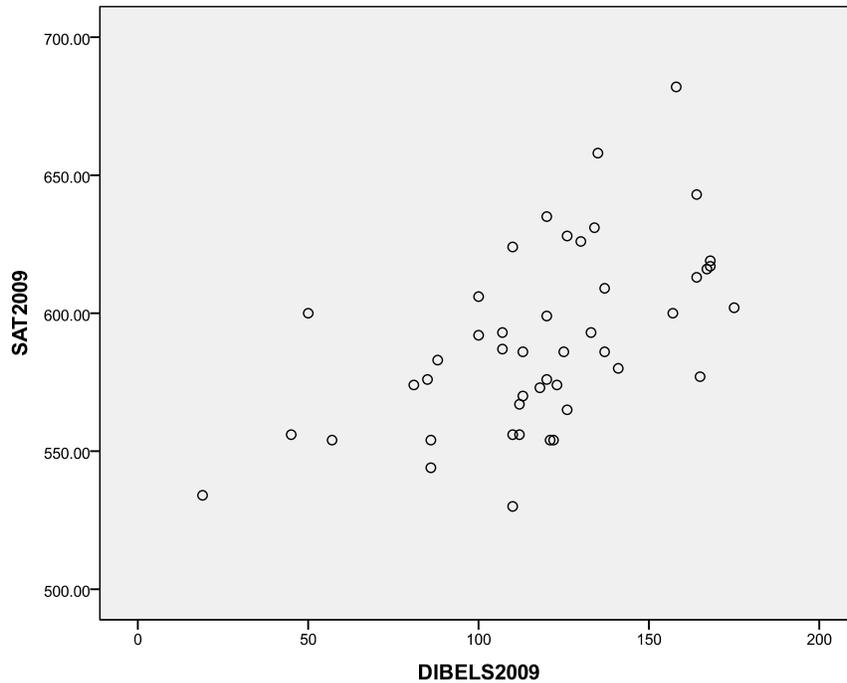


Figure 3 Scatterplot of 2009 DIBELS and Stanford Achievement Scores

assessment failed to score at or above proficiency on the reading section of the ARMT. Thirteen percent of the students that scored at or above proficiency on the reading section of the ARMT failed to meet the cutoff score for the DIBELS (oral reading fluency) assessment.

Due to the ordinal values used to determine the proficiency level, the Spearman Correlation was used to examine the relationship between the DIBELS (oral reading fluency) assessment and the reading section of the ARMT. The Spearman analysis is a non-parametric correlational test used when the data does not meet assumptions about normality, homoscedasticity, and linearity and when one or both values consist of ranks.

Results indicated that there was a weak relationship (.285) between DIBELS (oral reading fluency) scores and the reading section of the ARMT during 2009.

Research question 3 examined the relationship between DIBELS (oral reading fluency) scores and the reading scores on the SAT during the 2010 school year. The participants included 34 students from two third grade classrooms. The mean values for the DIBELS ($M=107.50$) and the SAT ($M=586.55$) fell below the assigned cutoff score for each assessment. The total percentage of the students meeting the cutoff score on DIBELS (oral reading fluency) for 2010 was 62%. Twenty-nine percent (29%) of the students who met the cutoff score for DIBELS (oral reading fluency) met the cutoff score for the reading section of the SAT during the 2010 school year. Thirty-five percent (35%) of the students who did not achieve the set cutoff score for DIBELS (oral reading fluency) fell below the cutoff score for the reading section of the SAT during the 2010 school year. Thirty-two percent (32%) of the students met the cutoff score on the reading section of the SAT during the 2010 school year. However, 3% of the students who met the cutoff score on the reading section of the SAT failed to make the cutoff score on the DIBELS (oral reading fluency) assessment. Before conducting the Pearson's Correlation analysis, each data set was graphed using a histogram to ensure neither data set was highly skewed. Figures 4 and 5 indicated that the data for both 2010 assessments were normally distributed. Figure 6 further illustrates the relationship of the variables using a scatterplot, which indicated a linear relationship between the 2010 DIBELS (oral reading fluency) scores and reading section of the Stanford Achievement, which met the requirement for conducting the Pearson Correlation. The results from the Pearson analysis revealed that there was a significant relationship between DIBELS (oral reading

fluency) scores and the reading section of the SAT during the 2010 school year, ($r = .675$, $p < 0.05$).

Research question 4 examined the relationship between third grade students' DIBELS (oral reading fluency) scores and the reading scores on the ARMT during the 2010 school year. The participants included 34 students from two third grade classrooms, and the mean scores for both assessments failed to exceed the cutoff score (see Table 5). The total percentage of the students who met the cutoff score on the reading section of the 2010 ARMT was 44%. Thirty-eight percent (38%) of the third grade students who met the cutoff score for DIBELS (oral reading fluency) met the cutoff score on the ARMT. In contrast, 24% of the students who met the cutoff score on DIBELS (oral reading fluency) did not score at or above the proficiency level on the reading section of the ARMT, and 32% of the students did not meet the cutoff score for either assessment. Only 6% of the students who met the cutoff score on the reading section of the ARMT failed to meet the cutoff score on the 2010 DIBELS (oral reading fluency) assessment. Spearman correlation was used to examine the relationship between DIBELS (oral reading fluency) scores and the reading section of the ARMT. The results indicated there was a positive correlation between DIBELS (oral reading fluency scores) and the reading scores on the reading section of the SAT, ($r = .658$, $p < 0.05$). Table 6 shows a summary of the research questions examined by this study and results.

Summary

The purpose of this study was to determine if there was a relationship between the third grade DIBELS (oral reading fluency) scores and the reading section of the SAT and

the reading section of the ARMT “high-stakes assessments” for the 2009 and 2010 school year. This chapter presented the results from the statistical analyses conducted in this study to determine if a relationship existed between DIBELS (oral reading fluency) and the high-stakes assessments. Based on the large percentage of students who did or did not meet the cutoff score on the third grade DIBELS (oral reading fluency) assessments and on the third grade high-stakes assessments reported in this chapter, it was determined that a relationship existed. Indeed, the descriptive statistics and Pearson and Spearman correlational analyses indicated that a positive relationship existed between the DIBELS (oral reading fluency) scores and the high-stakes assessments.

Table 6 Summary of Research Questions and Results

Research Questions	Results
1. Is there a relationship between DIBELS (oral reading fluency) scores and the reading scores on the SAT during the 2009 school year?	Pearson Correlation ($r = .556$) Moderate Relationship
2. Is there a relationship between DIBELS (oral reading fluency) scores and the reading scores on the ARMT during the 2009 school year?	Spearman Correlation ($r = .285$) Weak Relationship
3. Is there a relationship between DIBELS (oral reading fluency) scores and the reading scores on the SAT during the 2010?	Pearson Correlation ($r = .675$) Strong Relationship
4. Is there a relationship between DIBELS (oral reading fluency) scores and the reading scores on the ARMT during the 2010 school year?	Spearman Correlation ($r = .658$) Strong Relationship

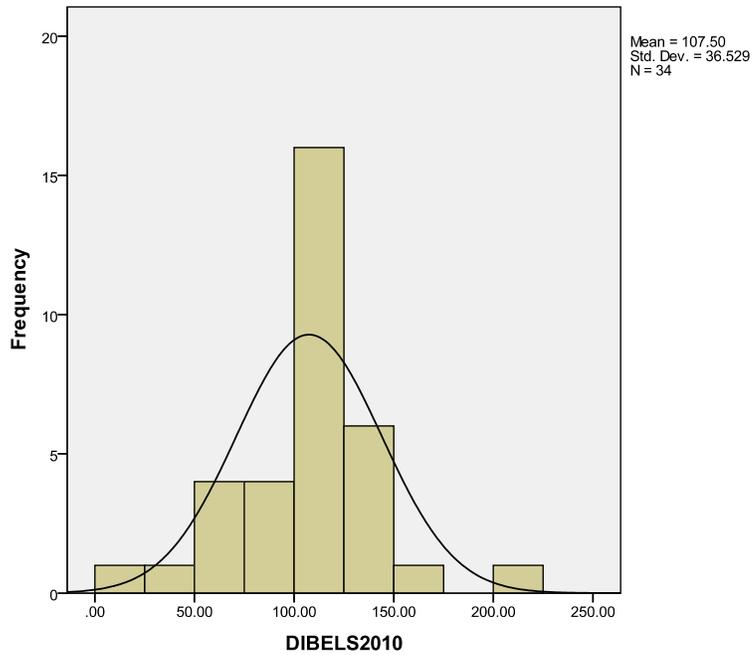


Figure 4 Histogram of 2010 DIBELS Oral Reading Fluency Scores

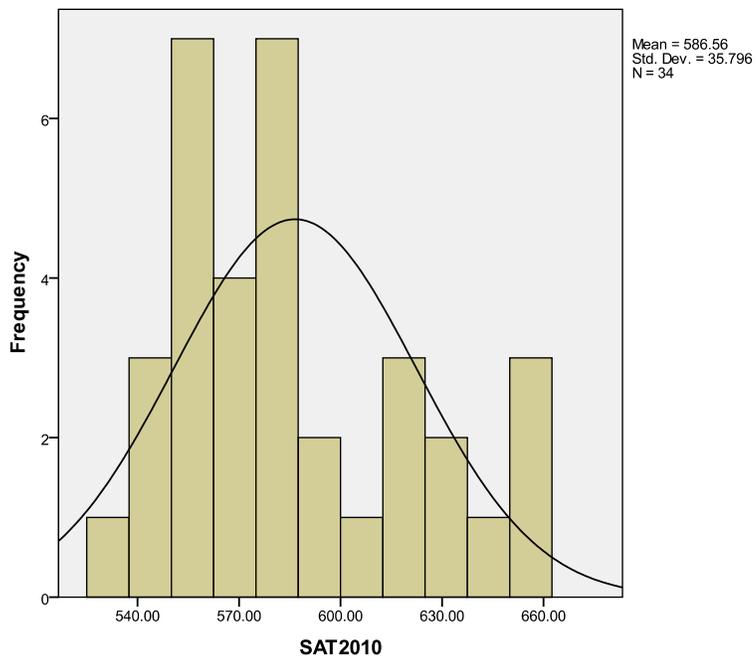


Figure 5 Histogram of 2010 Stanford Achievement Reading Scores

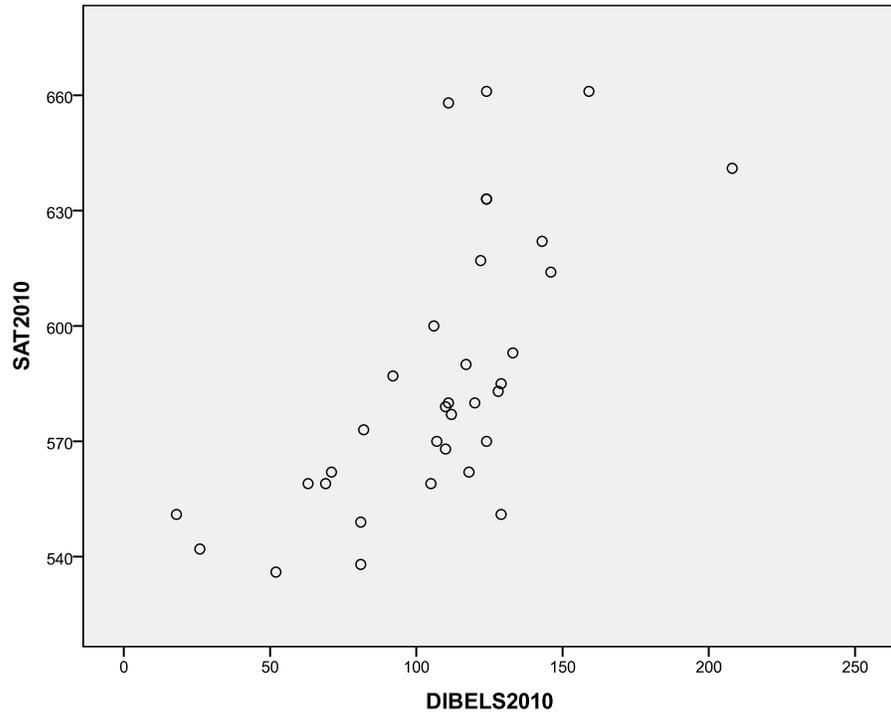


Figure 6 Scatterplot of 2010 DIBELS and Stanford Achievement Scores.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This study examined the relationship between third grade DIBELS (oral reading fluency scores) and the reading section of the SAT and the reading section of the ARMT. This chapter reviews and summarizes this correlational study in regards to the purpose and findings as related to empirically based research. This chapter also includes implications and recommendations for future research studies.

Review of the Study

In effort to improve the academic achievement in reading, Alabama is using DIBELS (oral reading fluency) as a screening assessment to determine which students are at-risk for reading failure. Furthermore, research strongly supports that early reading instructional strategies, if implemented effectively, can be used to address reading deficiencies (Kauchak & Eggen, 2005). In addition to DIBELS (oral reading fluency), standardized reading test scores from the SAT and the reading section of the ARMT were used to determine if students are making adequate yearly progress to meet federal and state mandates. Previous research studies have found DIBELS to be a predictive measure of success on high-stakes reading assessments (Barger, 2003; Buck & Torgesen, 2003; Good et al., 2001). However, many educators have been concerned that DIBELS

disconnects fluency from reading comprehension due to the emphasis placed on speed (Kamii & Manning, 2005; Wilde, 2006).

Numerous empirical studies have established the importance of reading fluency instruction when teaching children how to read (Allington, 1983; Chard et al., 2002; National Institute of Child Health and Human Development, 2000). Research conducted in this study also provided evidence that there is a relationship between fluency and reading comprehension skills. In order to ensure that the DIBELS (oral reading fluency) assessment is effectively guiding reading instruction for at-risk readers, data from DIBELS and other high-stakes assessments such as the SAT and the ARMT must be evaluated to determine if the assessments are related. Based on the DIBELS (oral reading fluency) results, students receive specifically designed instructional reading strategies before they are assessed with the SAT and the ARMT. Therefore, it is important to examine the extent in which DIBELS oral reading fluency data is related to both assessments.

The purpose of this study was to determine if there is a relationship between third grade DIBELS (oral reading fluency scores) and the reading section of the SAT and the ARMT. Specifically, this study examined how well DIBELS (oral reading fluency) predicted the academic performance in reading on the SAT and the reading section of the ARMT. The participants of the study included 46 third grade students who were assessed with all three assessments during the 2009 school year and 34 third grade students who were assessed with all three measures during the 2010 school year. The students were enrolled at a public rural elementary school in a southeastern state.

Discussion of Research Findings by Assessments

2009 and 2010 DIBELS and SAT School Assessments

Research question 1 examined the relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2009 school year. The mean and standard deviation were calculated for the sample on each assessment (see Table 4). The mean score for DIBELS (oral reading fluency) exceeded the cutoff score, but the mean score for the SAT was below the cutoff score. Most of the participants met the passing cutoff score for the DIBELS (oral reading fluency) assessment at 72%. However, when examining the percentage of students who did or did not meet the cutoff score on DIBELS (oral reading fluency) in relation to the percentage of students who passed the SAT, several questions and concerns surfaced. Only 37% of the students who met the DIBELS cutoff score met the cutoff score on the reading section of the SAT. In other words, 35% of the students were not accurately diagnosed based on the results from the descriptive statistics. One may speculate that this indicated a weak correlation between the DIBELS (oral reading fluency) assessment and the reading section of the SAT; however, 28% of the students failed both assessments during the 2009 school year indicating that 65% percent (student passing and students failing both assessments) were diagnosed accurately. Therefore, after examining the percentage of students who did or did not meet the cutoff score on DIBELS (oral reading fluency) in relation to the percentage of students who did or did meet the cutoff score on the SAT, it can be speculated that a relationship exists between the DIBELS (oral reading fluency) scores and the reading scores on the SAT during 2009.

Research question 3 examined the relationship between DIBELS oral reading fluency scores and the reading scores on the SAT during the 2010 school year. The mean score for DIBELS (oral reading fluency) and the mean score for the ARMT were below the cutoff score. Most (62%) of the participants met the passing cutoff score for the reading section of the ARMT. However, similar to the results reported in research question 1, only 29% of the students who met the DIBELS cutoff score met the cutoff score on the reading section of the ARMT, and 25% of the students fell below the cutoff score on both assessments indicating that 54% of the students were identified accurately. The high percentage of the students who met the cutoff score for both 2009 and 2010 may lead educators to believe that DIBELS (oral reading fluency) was an effective screening tool to identify all at-risk readers, but the percentages of students who did or did not meet the cutoff score on DIBELS (oral reading fluency) in relation to the percentage of students who passed the reading section of the ARMT suggest otherwise for 2009 and 2010. One possible explanation for the discrepancies could be explained by the scoring method used for DIBELS (oral reading fluency). The DIBELS (oral reading fluency) assessment is a one minute timed measure that solely focuses on oral reading fluency. Therefore, students could benchmark based on the number words read correctly with little comprehension. Research conducted by Pressley et al. (2005) also indicated that the oral reading fluency section of DIBELS was not an accurate indicator of reading comprehension. In addition, research data has shown that many teachers have disconnected fluency from comprehension by trying to meet DIBELS benchmark goals by focusing on speed (Wide, 2006). Although the results from this study indicated a relationship existed between the assessments, discrepancies may also indicate that some

of the students may have focused on speed with little comprehension while they were assessed with the DIBELS (oral reading fluency) assessment.

A Pearson Correlation was conducted to determine if there was a relationship between DIBELS (oral reading fluency scores) and the reading section of the SAT during 2009 and 2010. The results ($r = .556$, $p < 0.05$) indicated that there was a moderate relationship between DIBELS (oral reading fluency scores) and the reading section of the SAT in 2009, and a strong relationship ($r = .675$, $p < 0.05$) was indicated in 2010, supporting the percentage of students who met fluency cutoff scores on both assessments. These results also supported previous research findings that have shown a relationship between oral reading fluency and the academic success on high-stakes reading assessments (Barger, 2003; Buck & Torgesen, 2003; Good et al., 2001). Therefore, students meeting the cutoff score on the DIBELS (oral reading fluency) assessment were expected to meet the cutoff score on the reading section of the SAT.

2009 and 2010 DIBELS and ARMT School Assessments

Research question 2 examined the relationship between DIBELS (oral reading fluency) scores and the reading scores on the ARMT during the 2009 school year. The mean score for the ARMT was below the cutoff score (see Table 4). The total percentage of the students who met the cutoff score on DIBELS (oral reading fluency) was 72% as indicated in question 1. Fifty-seven percent (57%) of the students met the cutoff score for the reading section of the ARMT but only 41% of the third grade students that met the cutoff score for met the cutoff score on the ARMT. Interestingly, this finding coincides with the findings reported in research question 1 and 3.

A Spearman Correlation was conducted to determine if there was a relationship between DIBELS (oral reading fluency scores) and the reading section of the ARMT for 2009 and 2010. The 2009 results ($r = .285, p < 0.05$) indicated that there was a weak relationship between DIBELS (oral reading fluency scores) and the reading section of the SAT, however, the 2010 Pearson Correlations results ($r = .678$) indicated a strong relationship existed which support previous research findings that have shown a relationship between oral reading fluency and the academic success on high-stakes reading assessments (Barger, 2003; Buck & Torgesen, 2003; Good et al., 2001).

Research question 4 examined the relationship between DIBELS oral reading fluency) scores and the reading scores on the ARMT during the 2010 school year. Similar to question 2, the mean score for the assessment was below the cutoff score and only 44% percent of the students met the cutoff score for the reading section of the (ARMT; see Table 4). Thirty-eight percent (38%) of the third grade students who met the cutoff score for DIBELS met the cutoff score on the ARMT.

Unlike the Spearman analysis for 2009 DIBELS (oral reading fluency) and the reading section of the ARMT, the Spearman Correlation indicated that a strong relationship existed between the 2010 assessments ($r = .658, p < 0.05$). These results were in contrast to the weak relationship revealed for the 2009 data. It can be speculated that the difference in these results could be attributed to the DIBELS (oral reading fluency) scoring method as discussed in question 3 or the smaller sample size. Overall, based on the findings for the 2009 and the 2010 school years, a positive statistically significant relationship existed between the DIBELS (oral reading fluency) scores and the reading section of the SAT and reading section of the ARMT. However, discrepancies

were noted from year to year. Therefore, future research in this area is needed to ensure DIBELS (oral reading fluency) is an adequate screening tool for all students.

Conclusions

The findings from this study revealed that there was a statistically significant relationship between DIBELS (oral reading fluency) and the reading section of the SAT for 2009 and 2010. The study also revealed that there was a statistically significant relationship between DIBELS (oral reading fluency) and the reading section of the ARMT in 2010. These results supported the findings in other studies that examined the relationship between DIBELS (oral reading fluency) and High-Stakes Testing (Barger, 2003; Buck & Torgesen, 2003; Riedel, 2007).

The weakest correlation was found between the DIBELS (oral reading fluency) assessment and the reading section of the ARMT in 2009. Similar results were reported by Pressley et al. (2005), which noted DIBELS was weakly correlated with the TerraNova reading assessment. The weak correlation found here indicated that the probability of DIBELS accurately identifying students that are at-risk of not meeting the cutoff score on the reading section of the ARMT was low for that school year. Furthermore, the positive correlations found for the 2009 and 2010 school year (weak and strong) indicated that the DIBELS (oral reading fluency) can be used as an identifier for at-risk students who exhibit poor academic performance on high-stakes testing.

Although the overall inferential statistics from the Pearson Correlation indicated that there was a relationship between DIBELS (oral reading fluency) and the reading section of the SAT and the reading section of the ARMT, the descriptive statistics

suggested some discrepancies existed in the data analyses. In fact, the DIBELS (oral reading fluency) test still missed as many as a third of the students who do not have good comprehension and there were discrepancies found from year to year. All of the years had discrepancies in the percentage of students passing DIBELS (oral reading fluency) in relation to the percentage of students passing the reading section of the high-stakes assessments. That is, a high percentage of students met the cutoff score for DIBELS (oral reading fluency) but only approximately half of those students passed the high-stakes assessments, which indicated that DIBELS (oral reading fluency) did not accurately identify all at-risk students taking the assessments. In order for DIBELS to be used effectively as a screening tool for identifying at-risk readers, a high percentage of the students must be accurately deemed as needing or not needing further reading instruction. Therefore, based on the results from this study, it can be concluded that DIBELS (oral reading fluency) did not accurately identify all at-risk readers. Considering the amount of time and money needed to collect and administer the DIBELS (oral reading fluency) assessment, additional research is needed to determine if it is the most effective screening tool for identifying at-risk readers.

Implications

Many school districts are using DIBELS (oral reading fluency) results to make data-driven decisions about reading instruction in elementary classrooms. The results from this study provide evidence that DIBELS (oral reading fluency) accurately identify most of the at-risk readers. However, based on the percentage of students that met the cutoff score for DIBELS (oral reading fluency) and failed to meet the cutoff score on the

reading section of the SAT or ARMT, some evidence has been provided that not all at-risk students are being identified. If data from the DIBELS (oral reading fluency) assessment do not accurately identify all at-risk or struggling readers, educators may need to consider using other methods or multiple assessments to identify at-risk readers.

To address current issues regarding DIBELS (oral reading fluency), educators must examine how educators are building fluency. Previous research has indicated that a significant portion of what is being reported regarding the misuse of DIBELS such as speed reading, narrowing of the curriculum, and using DIBELS data to make high-stakes decisions is not appropriate for this purpose (Kaminski & Good, 2007). Therefore, it is important that administrators and classroom teachers adequately develop and assess fluency. Indeed, educators must extend their evaluations beyond the administering of assessments and collecting data to increase the academic achievement of all students.

Limitations

The study was limited to third graders from one school located in a rural school district in a southeastern state, and the results may not be generalized for schools in other school districts. In addition, all the students participating in this study were African Americans; therefore, research on African American students in a different geographical region may produce different results. The sample size included 46 students during the 2009 school year and 34 students during the 2010 school year. Replication of a broader sample is needed from various school districts to determine how well the results can be generalized. Secondly, the validity of pre-existing data is also a limitation; therefore, errors in the scoring of the pre-existing assessment data may exist. Another limitation is

the data collection of DIBELS (oral reading fluency) was exposed to threats of collector bias and collector characteristics, as DIBELS (oral reading fluency) was administered by different classroom teachers. The final limitation in this study was the unidentified children with learning disabilities.

Future Research

The primary purpose of the DIBELS (oral reading fluency) assessment is to provide an early identification screening instrument for students that are at-risk for reading failure so that reading instruction can be provided to remediate reading comprehension problems. However, based on findings in this study, it is possible that DIBELS (oral reading fluency) data are not accurately identifying all at-risk and struggling students. In the review of literature and, as well as, the results in this study, several issues were questionable about DIBELS (oral reading fluency) scores and high-stakes assessments. As stated in previous literature, DIBELS (oral reading fluency) have discrepancies regarding the assumption that students who read fluently will automatically read and comprehend. Due to the small sample size, replicated studies would extend the generalizations of the findings. In addition to that, mixed-method research designs that include interviews, field notes, and open-ended questions in addition to numerical data from DIBELS (oral reading fluency) and high-stakes assessments could also be used to strengthen the research in this area. Specifically, the researcher could address the research questions by observing the administration of all three assessments, conduct interviews with teachers to gain addition information or clarify observations about all three assessments, and utilize field notes to recall the written accounts regarding all the

assessments. By using mixed methods, the quality of the final results would provide a more comprehensive understanding of the relationship between the DIBELS assessment (oral reading fluency) and the reading section of the SAT and the reading section of the ARMT.

One of the most interesting aspects about this assessment is the retell fluency section of DIBELS. According to the DIBELS testing manual, the main purpose of this section of the test is to measure the student's ability to tell what was read. Specifically, this section of the test is designed to identify students who can read accurately with speed, but may not comprehend as they read. Interestingly, this portion of DIBELS test is optional in most schools, and the results from this section of the test do not affect the oral reading benchmark score (Farrell et al., 2006).

During the retelling section of DIBELS, each student is given one minute to retell everything he or she can remember about the passage read. The teacher does not ask any specific comprehension questions. Data from this section of the test is solely based on what the student can independently recall. If the student's retelling fluency score is lower than 25% of the oral reading fluency score, the student is considered at-risk for having reading comprehension difficulties (Farrell et al., 2006). The intriguing or possible emerging theme in this section is why the retelling section of DIBELS is optional and separate from the oral reading fluency section. The DIBELS oral reading fluency section in addition to the retell fluency section of DIBELS might be a better predictor, and that would be good to study for future research.

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APPENDIX A
IRB APPROVAL LETTER



Alicia Curry <adc216@msstate.edu>

Study 11-013: DIBELS & High-Stakes Testing

2 messages

cwilliams@research.msstate.edu <cwilliams@research.msstate.edu>

Fri, Jan 21, 2011 at 4:06 PM

To: adc216@msstate.edu
Cc: cwilliams@research.msstate.edu

January 21, 2011

Alicia Curry
3719 Hargrove Rd East
Apt. 311
Tuscaloosa, AL 35405

RE: IRB Study #11-013: DIBELS & High-Stakes Testing

Dear Ms. Curry:

This email serves as official documentation that the above referenced project was reviewed and approved via administrative review on 1/21/2011 in accordance with 45 CFR 46.101(b)(4). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB's policies and procedures in the coming months. These changes will be posted online at <http://www.orc.msstate.edu/human/aahrpp.php>.

A signed formal approval letter will only be mailed at your request. Please refer to your IRB number (#11-013) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at cwilliams@research.msstate.edu or call 662-325-5220.

Sincerely,

Christine Williams, CIP
IRB Compliance Administrator

cc: Margaret Pope (Advisor)

Alicia Curry <adc216@msstate.edu>

Thu, Jan 27, 2011 at 12:42 PM

To: "Margaret B. Pope" <mpope@colled.msstate.edu>

[Quoted text hidden]