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THE RELATIONSHIP BETWEEN THE PEDAGOGICAL USE OF
DIFFERENTIATED INSTRUCTIONAL STRATEGIES AND 3rd, 4th, AND 5th
GRADE LANGUAGE ARTS ACHIEVEMENT

by

Kenitra LaSha Barnes

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

May 2012
ABSTRACT
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By Kenitra LaSha Barnes
May 2012

Today’s classrooms are comprised of students who perform on a myriad of levels. As a result of both state and federal mandates, educators have been charged with the task of ensuring that all students master the required grade level benchmarks at the end of each school term. The challenge in carrying out that duty is finding strategic ways of reaching all students, regardless of their performance levels. The stricter state mandates have placed many classroom teachers in a compromising position that leaves them with no time to remediate students who may struggle with mastering a skill and minimal time to provide enrichment opportunities for those high-achieving students.

The purpose of this study was to identify teachers who successfully differentiated instruction (D.I.) and those who were unsuccessful in differentiating instruction based on student achievement. The instructional strategies employed by teachers who differentiated instruction as well as those employed by teachers who do not differentiate instruction (no D.I.) were reported. The rationale for reporting the observed instructional strategies was to afford all students the opportunity to have their academic needs met in all classes. Additionally, this study examined whether or not differences existed between the observed and perceived behaviors of teachers regarding differentiated instruction.
The goal of this study was to identify teaching strategies and practices that could be utilized to maximize the academic potential of all learners.

This study addressed six research questions that were examined using a perception survey and a classroom observation checklist. The 37 participants were categorized into one of two categories (D.I. or no D.I.) based on spring 2011 student achievement data. The three teachers who were said to differentiate instruction made every attempt to meet the needs of the learners in their classrooms by asking questions that varied in the degree of difficulty, reviewing pre-requisite skills to ensure that learners had a firm grasp before addressing the skill of the day/week, addressing different learning styles, and providing students with materials on a variety of reading levels. The teachers who did not differentiate instruction delivered instruction in a manner that only afforded students who firmly understood previously taught skills to be successful with completing the assigned task. All students were told to complete the same assignment with no consideration being made for those who could not read on grade level. The researcher found it interesting that the perceived behaviors of the participants often differed from the actual practices employed within the classroom. Many of the teachers who did not differentiate perceived themselves as going to great lengths to meet the needs of all learners when they actually taught lessons at one level. In addition, many of their questions were directed to a few students in the classroom who appeared to quickly grasp the material. Many of the teachers who differentiated instruction did not perceive themselves as teachers who varied instructional strategies based on the needs of students. Despite the small number of teachers who qualified to be categorized as D.I. teachers, there were distinct differences with regard to the number of students they had scoring
within the advanced and proficient categories in comparison with the students who were taught by teachers who did not differentiate.
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CHAPTER I
INTRODUCTION

Today’s classrooms are comprised of students who perform on a myriad of levels. As a result of both state and federal mandates *No Child Left Behind Act of 2001*, revisions to Accountability Models, emphasis on AYP, revisions to state standards, emphasis on Depth of Knowledge, and RtI—Three Tier Model, numerous curriculum changes have occurred forcing teachers to review current practices and make necessary adjustments to maximize the academic potential of all learners within their classrooms. Educators have been charged with the task of ensuring that all students master the required grade level benchmarks at the end of each school term. The challenge in carrying out that duty is finding strategic ways of reaching all students, regardless of their performance levels. The stricter state mandates have placed many classroom teachers in a compromising position that leaves them with no time to remediate students who may struggle with mastering a skill and minimal time to provide enrichment opportunities for those high-achieving students. Furthermore, federal funding is directly linked to student performance on state assessments. Although there has been much recent debate alluding to more curriculum changes throughout the United States and a great deal of interest has been expressed in common assessments/curriculum frameworks, the make-up of today’s classrooms and those of the future will continue to be comprised of students who range in performance levels from extremely low functioning to extremely high. Administrators and educators must find ways to keep all students challenged and engaged in learning each day to maximize each child’s academic potential and make strides to close the ever-growing achievement gap.
The purpose of this study was to identify teachers who successfully differentiated instruction and those who were unsuccessful in differentiating instruction based on student achievement. The instructional strategies employed by teachers who differentiated instruction as well as those employed by teachers who do not differentiate instruction were reported. The rationale for reporting the observed instructional strategies was to afford all students the opportunity to have their academic needs met in all classes. This study explored differentiated instructional practices employed within 3rd, 4th, and 5th grade Reading and Language Arts classrooms and their impact on student achievement. Additionally, this study examined whether or not differences existed between the observed and perceived behaviors of teachers regarding differentiated instruction. The goal of this study was to identify teaching strategies and practices that could be utilized to maximize the academic potential of all learners.

Statement of the Problem

Student achievement is the factor used by both federal and state policymakers to rate the performance of schools. *No Child Left Behind (NCLB)* and the Mississippi Accountability System are both designed to function as a road map to guide school districts in improving school performance and student achievement. In recent years, nearly 82% of Mississippi schools failed to meet adequate growth (Mississippi Department of Education, 2006). Although there has been much recent debate alluding to more curriculum changes throughout the United States and a great deal of interest has been expressed in common assessments/curriculum frameworks, the make-up of today’s classrooms and those of the future will continue to be comprised of students who range in performance levels from extremely low functioning to extremely high. Administrators
and educators must find ways to keep all students challenged and engaged in learning each day to maximize each child’s academic potential and make strides to close the ever-growing achievement gap.

Background of the Study

School administrators are charged with the task of ensuring that schools are safe and afford all children an opportunity to receive a high-quality education in the midst of budget cuts and teacher shortages. In addition, they are faced with the pressures of adhering to school accountability mandates, high-stakes testing, and adequately balancing school leadership with school management (Cooley & Shen, 2003). In an effort to adhere to mandates that have been instituted on both a state and federal level, administrators are encouraged to function as student advocates and change agents while simultaneously functioning as an instructional leader. Studies have conclusively indicated that Mississippi schools have inadequately prepared students for post-secondary success. Surprisingly, the number of students required to take remedial courses has vastly increased. The findings have inspired policymakers to question the level at which K-12 educators deliver classroom instruction (Potter, n.d.). Elmore (2003a) asserts that being cognizant of the right thing to do as an instructional leader is keen in order to improve student performance/achievement (p. 9). Finnigan (2005) further states that it is the responsibility of the school administrator to facilitate school improvement initiatives geared towards impacting the quality of education for students.

Policymakers have become increasingly more involved in efforts to improve student performance and the overall quality of education that is delivered in public schools throughout the United States. The belief that high expectations and goal setting
will result in success for all students is the premise for *The No Child Left Behind Act of 2001* (*NCLB*). The Act mandates that each state develop assessments in basic skills to be administered to students in specified grades in order to receive federal funding for education. *NCLB* permits each state to set its own standards. One major stipulation of the Act is that schools measure progress of individual children each year (Coleman-Potter et al., 2005). The growing focus on standards and accountability forced local school districts to acquire research-based monitoring procedures that would result in a successful learning outcome. States were ultimately required to assess students more frequently than in previous years, revise improvement goals for local schools, and increase sanctions for failure to meet said goals (Goertz & Duffy, 2001). In anticipation of affording students within the United States a quality education that is comparable to that offered abroad, policymakers recently convened to develop Common Core Standards. These standards are designed to ensure that educators are accountable for providing children an opportunity to learn and master the foundational skills needed to be a productive citizen.

**Research Questions**

This project addressed the following research questions:

1. What are the behaviors of teachers who differentiate instruction as identified through observation?

2. What are the behaviors of teachers who do not differentiate instruction as identified through observation?

3. What are the perceived behaviors of teachers who differentiated instruction?

4. What are the perceived behaviors of teachers who do not differentiate
instruction?

5. What are the differences if any between the perceived and observed behaviors of teachers with regard to differentiated instruction?

6. What correlation if any exists between the 3rd, 4th, and 5th grade Language Arts MCT2 scores of students who are taught by teachers who differentiate instruction and those whose teachers do not?

Hypotheses

The following hypotheses were considered during this study:

$H_1$: There are significant differences between the dependent variable of 3rd, 4th, and 5th grade Language Arts achievement and the independent variable of whether or not teachers differentiate instruction.

$H_2$: There are significant differences between the observed and perceived behaviors of teachers with regard to differentiated instruction.

Delimitations

The following delimitations were identified for this study:

1. Only a few coastal, school districts will be included in the study.

2. The dependent variable of MCT2 Language Arts achievement data will be limited to scores obtained during 2010-2011.

Assumptions

It was assumed that participants completed the perception surveys truthfully and accurately demonstrate practices employed within their classrooms. Additionally, it was assumed that participants understood the rationale for the research project.
Definition of Terms

For the purpose of this study, the following terms are defined:

*Accountability*: an obligation to accept responsibility for one’s actions (No Child Left Behind Act)

*Achievement Level*: performance of students who are enrolled in school (No Child Left Behind Act)

*At-risk*: students who have historically struggled academically due to one or more constraints (socioeconomics, learning disability, etc…) (Levine & Levine, 1996)

*Differentiated Instruction*: instruction that is designed to meet the needs of all learners regardless of ability or interest (Tomlinson, 1999)

*Instructional Leader*: building-level principal; individual responsible for guiding instruction in a school setting; person responsible for supporting classroom teachers in ensuring that the academic potential of all learners is maximized while simultaneously meeting all of the learners’ needs (Mississippi Department of Education, 2006, p. 64)

*Mandate*: a formal order from an official and/or superior court (Jost 2001)

*Performance Level*: level on which a student can work independently (Bowman, 2004)

*Readiness*: level on which a student can work independently (Tomlinson, 2003)

*Student Achievement*: performance that is measured on state-mandated assessments (Jost, 2001)

Justification

In an effort to comply with the provisions of *The No Child Left Behind Act of 2001*, school districts are required to take measures to meet the academic needs of all
learners. For many districts, educators and administrators have had to rally together to develop curriculum maps and/or pacing guides in an effort to ensure that all state-mandated benchmarks are introduced and mastered at the appropriate grade levels. Furthermore, building-level administrators have been charged with the task of closely monitoring instruction to ensure that skills are taught at appropriate Depth of Knowledge levels while simultaneously affording students opportunities for remediation and/or enrichment when needed. Because federal and state funding is directly linked to student achievement, districts have been feeling the pressure to stop at nothing to equip teachers with research-based textbooks, computer software, and remediation/enrichment programs in an attempt to afford students an opportunity to receive a high quality education.

Research has conclusively supported the notion that Differentiated Instruction (D.I.) is an effective approach to maximizing the academic potential of all learners within today’s classrooms. D.I. promotes equity by focusing on practical instructional approaches in mixed-ability classrooms. The academic needs of the “whole child” are met in an effort to close the achievement gap that currently exists among learners. Within a differentiated classroom setting, educators instruct children based on readiness and scaffold instruction and independent practice opportunities. Ultimately, D.I. promotes an intense curriculum for all learners with varying levels of support from teachers, task complexity, pacing, and instructional delivery practices employed based on student readiness, learning styles, and interest. Tomlinson (2005) maintains that an exemplary teacher must willingly modify instruction to accommodate the needs of all learners.
Because today’s classrooms are comprised of children who perform on many different levels and at varying paces, differentiation seems to be the most logical method to employ in an effort to close the ever-growing achievement gap. If educators do not take the time to remediate children who cannot read and/or function academically on grade-level, those struggling learners will continue to fall further behind, lose an interest in school, more likely choose to drop-out of school, and increasingly acquire a large number of absences from school. Furthermore, if teachers do not take the time to offer enrichment opportunities for advanced learners, there is a great possibility that those children may lose an interest in school, experience a decline in academic performance, exhibit a lack of motivation, and increasingly acquire a large number of absences, as well. This study explored various instructional practices employed in several classrooms along the Mississippi Gulf Coast. The researcher compared perception survey responses with actual practices employed within the classrooms and determined whether or not a relationship existed between the pedagogical use of differentiated instructional strategies and 4th grade Language Arts achievement.

Summary

State and federal funding are directly linked to student achievement. In an effort to ensure that the academic potential of all learners is maximized each day, teachers have been charged with the task of developing rigorous, classroom lessons designed to peak student interest while simultaneously addressing state-mandated benchmarks. Differentiated instruction is a practical approach to offering all children a unique, educational experience while adhering to state and federal mandates. Differentiation affords teachers an opportunity to modify lesson pace, vary instructional delivery
techniques, offer student choice with regard to assignments designed to indicate mastery of a particular skill, and address various learning styles.
CHAPTER II

REVIEW OF LITERATURE

This chapter examined the following areas of research: No Child Left Behind Act of 2001 (NCLB), the Elementary and Secondary Education Act of 1965 (ESA), standardized testing, A Nation at Risk, Accountability Model (Mississippi), Education Reform Act of 1982, at-risk student populations, Teacher Support Teams (TST), TST process, Three Tier Intervention Model, intervention strategies, and methods used to differentiate instruction. Today’s classrooms are comprised of students who perform on a myriad of levels. As a result of both state and federal mandates (No Child Left Behind Act 2001), revisions to Accountability Models, emphasis on AYP, revisions to MS Frameworks 2006, emphasis on Depth of Knowledge, and RtI—Three Tier Model), numerous curriculum changes have occurred forcing teachers to modify current instructional practices and make necessary adjustments to maximize the academic potential of all learners within their classrooms.

Theoretical Framework and Standardized Testing

According to Grant Wiggins (1991), standards are primarily synonymous for having a drive for excellence and constant attention to the quality of the services rendered. With regard to education, this is accomplished when a school system demonstrates high and consistent expectations of all learners in all courses. Wiggins maintains that it is curriculum and performance standards that ultimately measure student learning and can be used to hold school systems accountable. Janesick (2001) asserts that high-stakes testing basically refers to assessments that render strict consequences to school systems in which students receive low scores. Since the launching of Sputnik,
Americans have aspired to employ educational practices that would enable them to measure comparatively with other nations (Kennedy, 2003).

Standardized testing has been a common practice in American schools and the educational process for decades. Historically, Fisher’s Scale Books, which were designed to assist with spelling, handwriting, mathematics, and scripture knowledge, jump started the standardized testing initiative in 1864 (Lewis, 2006). Educators, scientists, and psychologists began to familiarize themselves with objective assessments, surveys, and scientific scales by the end of the nineteenth century. Charles Darwin and E. L. Thorndike were among two of the most highly studied (Gallagher, 2003). According to Lewis (2006), Thorndike was accredited for being a forerunner with regard to developing educational assessments. His diligent research in testing development and procedures to follow when identifying standard scores led to the development of standards-based/criterion-referenced assessment. In 1845, Horace Mann proposed that educators in the Boston Public School System veer away from the common practice of orally assessing their students; he suggested they begin administering written examinations. Mann aspired to provide school officials with useful information about the quality of education being delivered in classrooms and an opportunity to gauge the actual amount of learning that was occurring. Ultimately, Mann desired to help schools evolve into entities that helped children learn pertinent skills that would later help them to become productive citizens within society (Gallagher, 2003).

John Dewey has previously been recognized as the most profound educational thinker of the twentieth century. During the 20s and 30s, he verbally expressed his discontent with the current practice of heavily emphasizing content while negating to
address the educational experience of the child in general. He maintained that it is imperative that educators consider the unique differences among learners within the classroom. His research indicated that each person is genetically different and encounter a myriad of situations. In addition, he felt that teachers should not expect all learners to learn using the same method of instructional delivery nor at the same rate. Teachers were encouraged to design lessons that maximized the academic potential of all learners (Fallace, 2010).

Both norm-referenced and criterion-referenced assessments are accredited for lending a hand in the development of the standards-referenced framework (Young & Zucker, 2004). Norm-referenced assessments are designed with the intent to enable parents and educators to chart student achievement and identify academic strengths and deficiencies. They are typically designed around national curriculum standards. On the other hand, criterion-referenced assessments are developed based on specific academic criteria; results are ideally denoted by a scale score or percentage. Young and Zucker (2004) maintain that criterion-referenced assessment developers determine performance levels using rigorous methods when identifying “cut scores and thresholds” (p. 24). Theoretically, standardized assessments, whether criterion-referenced or norm-referenced, should be designed to assess the intended performance standards and/or curriculum.

Norm-referenced assessments have historically been used to compare one individual student’s performance with the performance of other students who were administered the same assessment; these students comprise the “norm” group. Ultimately, the assessment developers create the “norm groups” when publishing
companies administer the assessment to large groups of students (Taylor and Walton, 2001). According to Janesick (2001), officials use the norm-referenced assessment data to “rank” each test taker to establish a bell curve resulting in the majority of the scores falling within the middle range of the curve; a few scores will be high, and a few will be low. Taylor and Walton (2001) claim that comparing children is the driving force behind the development of norm-referenced assessments; curriculum specialists and test developers discount the correlation that may exist between student performance and the individual school’s curriculum standards. Some believe that assessment results offer educators an opportunity to determine performance/ability levels of test-takers but should not solely be used to gauge student potential. Many of the test items are presented in a multiple-choice format which stifles the complexity of each item.

Unlike norm-referenced assessments, criterion-referenced assessments are designed to determine whether or not an individual student meets outlined performance standards. There is no emphasis on comparing the student’s performance with that of his cohorts. The vast majority of state assessments are criterion-referenced designed to test both performance and curriculum standards that have been launched by state level education agencies. Criterion-referenced assessments are compiled of test items with varying degrees of difficulty (Taylor and Walton, 2001).

In 1965, members of Congress created the *Elementary and Secondary Education Act (ESEA)*. The premise for the Act was to increase the Title I funding allocated to schools with disadvantaged students. In conjunction with the Act, the National Assessment of Educational Progress (NAEP) was crafted to evaluate student performance and measure the progress of students throughout the entire nation (Jost, 2001). During
the 1970s, another theorist by the name of Howard Gardner became renowned for his research surrounding cognitive development and processing that led to the identification of seven multiple intelligences. His research conclusively supported the notion that students learn, perform, remember, and understand in different manners because they cognitively possess unique and different minds. He felt that a cookie-cutter educational system that expected all learners to learn the same content using the same instructional methods and at the same rate inadequately measured student learning. His findings tremendously impacted the manner in which schools perceived lesson planning and instructional delivery. For the first time, there appeared to be a major emphasis on the importance of recognizing that students do not learn in the manner or at the same rate (Janesick, 2001).

Around the same time that Gardner was awakening the nation to the idea that children learned in different ways and rates, the National Institute of Education modified itself and became known as the United States Department of Education (Janesick, 2001). The U.S. Department of Education was comprised of various directors and coordinators who specialized in an assortment of areas from curriculum development, testing/accountability, educator and administrator licensure requirements, and a host of other pertinent areas that were all linked student achievement. For many decades, school assessments were primarily focused on individual classrooms and were often considered to be informal. There were minor consequences associated with poor performance on the assessments. When the nation began to place a greater emphasis on standardized testing, it was initially intended to provide local school districts substantive that was directly linked to the quality of education being offered within the classrooms. The focus was on
whether or not the needs of the community were adequately being met (Cizek and Burg, 2006).

In the 80s, more and more attention was drawn to the inadequate service that many schools rendered to its youth. Year after year, test scores seemed to plummet. Under President Ronald Reagan’s administration, a report, entitled *A Nation at Risk*, emerged offering the public a first-hand, comparative look at student performance nationwide. The report requested more student assessments but allocated limited funds to school systems. In an attempt to honor the stipulations, standardized assessment developers began revising tools to ensure that they adequately measured student learning and results could serve as a tool to drive instruction (Janesick, 2001). In the late 80’s, President Bush convened a special session in Charlottesville, Virginia that was comprised of governors throughout the nation and devised six national goals for education (Jost, 2001). The initiative was called Goals 2000 because the committee anticipated that by the year 2000 the goals should be carried out.

The goals are as follows: (1) All U.S. students will enter school prepared to learn; (2) the percentage of students graduating high school will increase to at least 90%; (3) students in grades 4, 8, and 12 will show mastery of grade-level appropriate skills in the areas of English, mathematics, science, history, and geography by the end of the school term on state assessments; (4) students within the nation will be ranked among the top performers in the fields of science and mathematics in comparison with other countries; (5) every adult within the nation will be literate and will be equipped with the cognitive tools necessary to compete in a global economy and prove to be a productive and responsible citizen; and (6) every school within the nation will be free of drugs and
violence and will foster a school culture that is conducive to learning (Wright & Chau, 2009). One criticism of the initiative was that it did not issue sanctions to school systems that failed to meet the goals.

While disaggregating student performance data in the 60s, curriculum specialists and assessment developers discovered differences among racial and ethnic groups (Airasian, 1988). The alarming determination led to the implementation of compensatory educational initiatives. In the 70s, specialists and assessment development determined differences in student performance among students with special needs, as well. This eventually led to innovative initiatives geared towards improving educational practices to accommodate students with special needs. *A Nation at Risk* corroborated the discoveries that had previously been made and outlined measures that should be taken to rectify the problem.

By the 90s, educational reform had taken a “standards-based” approach with regard to improving curriculum and student performance. There was an increased emphasis on state-based testing and a reauthorization of the Elementary and Secondary Education Act in 1994 (Jost, 2001). As a result, the No Child Left Behind Act proceeded mandating that all students in grades 3-8 engage in rigorous state testing at the end of each school term. The federal government mandated the specific testing but granted individual states autonomy with regard to the development of the assessment instruments.

Sternberg (2004) charged teachers with the task of developing diverse learning opportunities within the classrooms that would afford children the opportunity to augment each child’s dominant intelligence. Research has suggested that this differentiated approach to instructional delivery will increase the likelihood of children
retaining information that may be applied in other learning arenas. Furthermore, Sternberg asserted that children who are taught creatively, practically, and analytically have a learning experience that enables them to make larger academic gains in comparison with children who are not afforded a similar learning experience. Additionally, differentiated instructional methods encompass many aspects of Gardner’s Theory of Multiple Intelligences (Gardner, 1993) when varying the manner in which concepts are introduced and/or assessed.

In 2006 Goleman studied the impact emotional intelligence had on one’s ability to learn and transfer knowledge when applicable. His Emotional Intelligence Theory addressed the importance of understanding the ways in which people display emotion and the impact it has on their ability to work cooperatively with others.

The Constructivist Theory was a compilation of ideas expressed by both Vygotsky (1978) and Bruner (1966). Basically, the theory addressed the importance of equipping students with the tools needed to transfer knowledge and apply it where applicable throughout their academic tenure. In the ideal situation, students would be afforded the opportunity to access prior knowledge when presented with a new concept and truly understand how skills build upon one another. Ultimately, educators would present material at varying levels to students and differentiate the manner in which mastery of the concepts were determined.

No Child Left Behind Act 2001

In an attempt to level the playing field for all students in grades K-12, President Bush signed the No Child Left Behind Act of 2001. According to Public Law 107-110, the No Child Left Behind Act (NCLB) is a federal mandate that reauthorized several
federal programs gearing them towards improving the performance of K-12 schools in the United States. Performance levels of struggling students were projected to be improved by increasing the standards of accountability for states, school districts and individual schools, and permitting parents to choose which schools their children would actually attend. The major provisions of the Act mandated that all states: (A) develop an accountability system that focused on assessments and graduation rates; (B) close the achievement gap that existed among subgroups of students including African Americans, Latinos, poverty-stricken students, and student receiving Special Education services to a state determined level of proficiency; (C) ensure that all classroom teachers were deemed “highly qualified”; (D) yearly measure the progress of all students in grades 3-8 in mathematics and reading and at least once in high school; (E) increase parental involvement; (F) offer public school choice when school systems inadequately met yearly progress; and (G) use scientifically, research-based instructional strategies, materials, and professional development (U.S. Department of Education, 2002b).

The belief that high expectations and goal setting will result in success for all students is the premise for NCLB. The Act mandates that each state develop assessments in basic skills to be administered to students in specified grades in order to receive federal funding for education. NCLB permits each state to set its own standards. One major stipulation of the Act is that schools measure progress of individual children each year (Coleman-Potter et al., 2005). The growing focus on standards and accountability forced local school districts to acquire research-based monitoring procedures that would result in a successful learning outcome. States were ultimately required to assess students more
frequently than in previous years, revise improvement goals for local schools, and increase sanctions for failure to meet said goals (Goertz & Duffy, 2001).

A primary criticism of the Act asserts that it could greatly reduce effective instruction because teachers may become motivated to “teach the test” (No Child Left Behind, Retrieved October 5, 2007). Monty Neill maintains that NCLB places schools with a large population of low-income students in a position where they teach the students how to pass the test rather than permit those students to learn from a curriculum that prepares for life in the 21st century. In his opinion, an increase in the rigor within the curriculum is going to lead to an increase in teachers feeling pressure to merely teach the test (Neill, 2003). Nevertheless, it is imperative that school level administrators insist that teachers are employing instructional practices that illicit valid and reliable indicators of student progress.

Regardless of the discontent expressed by a number of educators, NCLB ensures that all public schools and districts within the United States will be held accountable for subgroups of the student population, as well as, individual students, and those who are deemed culturally and economically disadvantaged (Munday, 2005). The Act is accredited for mainstreaming students with disabilities into the regular education classrooms, as well. The summative data collected from student achievement is used to aide in educational decision-making (Coleman-Potter et al., 2005). NCLB asserts that by 2014, every American student will read well by the end of third grade (U. S. Department of Education, 2002). In order for this to be attained, school systems are required to use scientifically, research-based measures to ensure that programs are in place to meet the needs of all learners (Chhabra & McCardle, 2004). This means that programs must use
empirical methods, offer observations and evaluations based on a number of methods, provide a stringent analysis of student growth/performance, and must be examined by independent researchers (National Reading Panel, 2000a; United States Department of Education, 2002). Bowman (2004) asserts that high-stakes, standards-based assessments offer parents information about the quality of education being offered in their child’s classroom, teachers’ qualifications, and enable them to chart their child’s yearly progress in key subject areas.

The mandate reauthorized the *Elementary and Secondary Education Act of 1965 (ESEA)* and promoted an increased focus on reading. *NCLB* provided states with provisions to identify and address reading achievement. Title 1, Part B, Subpart 1 of the *ESEA*, as amended by *NCLB*, supplied the federal authorization and expenses associated with the Reading First Program. The program emphasizes the importance of improving student reading achievement by implementing programs and strategies that are scientifically proven to be effective. This program is especially geared towards addressing deficiencies that are prevalent among poverty-stricken communities and school systems (U. S. Department of Education, 2002).

**Accountability Model (Mississippi)**

According to Haladyna, Haas, and Allison (1998), testing has historically and will continue to be the means used to gauge the effect school systems have on students’ learning. Additionally, testing continues to be influenced by two principles: (1) all students must be allotted equal educational opportunities; and (2) education must be efficient. Throughout the U.S., a heavy emphasis has been placed on objective and
subjective standards-based assessments. School systems have been charged with the task of finding a way to use common testing practices to improve student achievement.

Janesick (2001) asserts there are eight characteristics associated with educational/school reform: (1) Reforms are typically initiated by state political figures; (2) there is usually an emphasis on improving student achievement using standards-based data prepared by experts, as opposed to local school systems; (3) content-based standards are used considered mere collections of outcomes associated with student behaviors and are often assembled in a nonsystematic manner; (4) state and federal mandates are the driving force behind educational initiatives rather than permitting local entities to develop their own; (5) agendas typically pertain to every state within the nation; (6) reports lack cost benefit analysis with regard to state reforms; (7) theory is often the premise for reforms rather than strictly politically driven; and (8) student achievement should greatly increase if all stipulations are adhered to.

Research shows that a school’s leader and how he/she embraces and implements change can determine whether or not a curriculum and/or educational reform will be deemed successful (Leithwood, Louis, Anderson, and Wahlstrom, 2004). Individuals who support school reforms assert that school administrators are charged with the task of directly supervising classroom teachers to ensure that they are in compliance with mandates by making necessary modifications to instructional and educational practices employed within the school (Leithwood, Day, Sammons, Harris, and Hopkins, 2006). According to Leithwood, et al. (2006), leadership “serves as a catalyst for unleashing the potential capabilities that already exist in the organization” (p. 15). Building level administrators greatly influence the decisions within their facility that affect student
learning with regard to class size, instructional practices employed, class
lists/assignments, scheduling, and teacher evaluations (Leithwood, et. al, 2004).

Education is considered to be the footstool to a new way of life and the doorway
that leads to new opportunities (MetLife, 2003). Within the state of Mississippi,
accountability originated to the early 1900s. Initially, students interested in attending the
University of Mississippi were required to successfully graduate from an approved high
school. The limited number of schools who were featured on the approved list were
identified using stringent criteria. In 1926, elementary schools became eligible for
accreditation. It was not until 1935 that segregated schools comprised of minority
students became eligible for accreditation. Laws that were passed in 1970 enabling the
Mississippi Board of Education to develop a set of performance standards and procedures
for all public school systems. Ultimately, this action basically legalized accountability in
the state (Mississippi Department of Education, 2006). In 1994, legislators within the
state added a component to its accreditation process requiring school systems to focus on
performance-based standards. This action required students to pass assessments and
applied sanctions to districts that failed to comply. In 1999, the Mississippi Student
Achievement Improvement Act of 1999 (Senate Bill 2156) was passed. This bill
enhanced the accreditation process by increasing standards for districts, individual
schools, and students.

In addition, the process mandated that assessment developers follow a
comprehensive approach to ensuring that schools were employing best teaching practices.
Furthermore, Senate Bill 2488 was passed into law mandating that performance standards
reflect both individual school, as well as, district level performance. This bill insisted
that schools who failed to adequately comply with accreditation standards be labeled priority schools. As of 2008, school performance levels were based on the following: (1) percentage of students scoring at both the basic and proficient levels and (2) annual student achievement growth expectation (Mississippi Department of Education, 2006).

Accountability often has a very negative connotation because it is associated with strict mandates that have developed by state and/or Federal officials and harsh sanctions that are issued to systems who fail to adhere to those mandates. Friedman (2001) stated that within the field of education many argue that accountability has been designed to issue sanctions for non-compliance rather than reward the systems who work hard to comply. Herman (2007) contends that many school systems are driven by fear of being issued harsh sanctions for non-compliance with mandates and are motivated to only teach the specified standards and use the resulting data to drive future instruction.

Unfortunately, high-stakes testing leads to increased stress levels among teachers, students, and parents which often times impacts the overall educational environment.

In an attempt to adhere to the stipulations outlined within the No Child Left Behind Act of 2001, many states developed and implemented rigorous standards-based assessments that corresponded with the specifications outlined with the state-level frameworks. These frameworks were the premise that was directly linked to performance standards that were measured by each grade level. In addition, all states were required to execute an approved assessment program that measured the adequate yearly progress (AYP) of each student. AYP was designed to serve as a “check and balance” for school systems to ensure that those with large populations of low-performing students were taking measures to rectify the flaws that existed with the current educational system.
Ethnicity, socioeconomic status, and gender were factors that should have no bearing on student achievement.

One of the major goals of the United States Department of Education is to ensure that disadvantaged students receive educational opportunities that are comparable to those of their peers. By closing the achievement gap, Federal government officials hoped to increase the number of minority and impoverished students attending institutions of higher learning. By doing so, it was anticipated that the nation would be strengthened (Herman, 2007). The use of standards-based assessments can positively impact educational practices if it adequately meets the needs of the students. In addition, research conclusively indicates that this type of assessment can positively impact both student and teacher motivation when data is effectively used to enhance curriculum and instructional practices (Herman, 2007).

According to Mississippi’s Accountability Systems handbook, which was developed by the Mississippi Department of Education’s Office of Instructional Programs and Services, school districts are charged with the task of equipping today’s students with the necessary skills to enable to cope and function within a competitive world and work force. In an attempt to attain said goals, Mississippi has made drastic revisions to assessments and accreditation and accountability standards to ensure that students received high-quality classroom instruction. For the past two decades, state legislators have worked diligently to revise and revamp standards to ensure that students within the state were afforded an educational experience that could be considered comparable to those in other parts of the country. Educational reform in the state ultimately began with the *Education Reform Act of 1982*. 
The Act, which is codified in *MS Code 37-17-6*, was developed with the intent of cultivating a culture of educational excellence through four areas: (1) improved state and school level leadership, finance, and governance; (2) improved growth of school personnel through professional preparation; (3) improved student achievement; and (4) improved overall school performance. To improve school and state leadership, finance, and governance, officials decided to mandate that the state superintendent and the members of Mississippi Board of Education be appointed positions to ensure that viable, nonpolitical officials were in place to better serve the state. Officials were also charged with the task of developing a new accreditation system designed to enhance student achievement, as well. While developing the new accreditation system in 1982, officials were urged to consider process standards that should be followed by each district throughout the state (*Education Reform Act 1982*). In addition, the Act increased public awareness of the quality of education students were receiving in Mississippi classrooms addressing the concern that many schools were offering less than adequate instruction. This soon led to the development of the Mississippi Adequate Education Program (MAEP). Over time, MAEP became the vehicle used to fund education throughout the state.

The funds have been used to renovate more than 9,000 classrooms and provide more than 507 million dollars in State Aid Improvement Bonds. A number of modifications were made to both the teacher and administrator licensure processes, as well. The Commission on Teacher and Administrator Education, Certification and Licensure Development was established to develop criteria for teacher and administrator licensure programs. They also determined the professional development training that
would be necessary to maintain said licensure. In a continued effort to attract highly-qualified, top-notch individuals into the field of education, the Mississippi Teacher Center was developed in 1994, as well (Education Reform Act 1982).

The Act was also responsible for the development of a performance-based accreditation system that ensured schools were responsible for equipping students with the skills necessary to master state-mandated competencies and objectives in specified content areas. Ultimately, this led to the development of a common curricula framework throughout the state. The Act also required all public school entities to administer state assessments; they were compulsory as opposed to being voluntary. In addition, the Education Reform Act of 1982 set a precedent for “raising academic standards” in the state of Mississippi. The Board of Education members worked diligently in the years following the Act to revise and revamp curriculum/accreditation standards to ensure that students within the state were receiving a high-quality education that could be comparable with that offered to students throughout the nation. The State Department of Education has solicited input from teachers when revising curriculum and developing new state assessments. From 1987 through 1994, educators administered the Stanford Achievement Test to assess skills that were mastered by students in a given school term.

The Stanford Achievement Test was developed in 1923 and has since undergone a number of revisions. Each version of the assessment was designed to blend current educational and curriculum trends, ensure that score interpretations were valid and concise, increase the type of information available for testing, and modify the appearance of the actual assessments to make them more student-friendly. The assessments are multiple-choice and are designed to assess both national and state curriculum standards.
Stanford Achievement Tests vary the degree of complexity to alleviate testing anxiety which often times resulted in frustration among test-takers. Test developers maintain that by varying the degree of complexity enables students to stay motivated for an extended period of time and remain focused (Harcourt Educational Measurement, 2004). It has been the belief of the test developers that strict procedures must be followed to ensure that test items are not biased in any fashion and that the content should be “neither offensive to members of a particular group nor unfairly disadvantage the performance of a particular group because of extraneous factors irrelevant to the constructs the test intends to measure” (p. 16).

According to Jorgensen (2004), the creators of Stanford Achievement Tests employ the use of a vertical scaling system that enables individuals who are analyzing data to measure the degree to which student learning occurred within a given school system in comparison to the learning that occurred among the student’s peers throughout the nation.

At-Risk Populations

Typically, one would consider an at-risk learner to be a student whose mediocre academic performance will cause him/her to eventually drop out of school. In actuality, at-risk students are those who are likely to improve under the direction of an educator who employs exemplary teaching practices and methods of imposing high expectations for all learners within the classroom (Levine & Levine, 1996). Collins and Onwuegbuzie (2001) maintained that a student’s discipline record, placement in special education, and response to interventions should be factors to consider when identifying “at-risk” students. The meaning of at-risk has been modified to encompass students who
experience a host of difficulties including low socioeconomic backgrounds (Levine & Levine, 1996).

The following factors are associated with students who are at-risk: (1) family difficulties single-parent home, low socioeconomic financial situation, etc.; (2) history of some sort of child abuse—physical, mental, emotional; (3) lack of parental involvement in school; (4) stigma and/or prejudice attitude towards individual student; (5) boredom in school; and (6) desire to feel secure as an adult by focusing energies of seeking employment rather than finishing school. In addition, Collins and Onwuegbuzie (2001) discovered that by finding ways to elevate the social skills of at-risk students and equipping them with the skills needed to regulate their own behavior there were drastic improvement in graduation rates.

Bruner (1966) maintained that both curiosity and an innate desire to achieve are the essential motives for learning; conversely, defense mechanisms that are a result of one or more of the six factors listed above may extinguish the burning fire resulting from an innate motive to want to acquire knowledge. An example of this is a child who lacks a positive role model; he or she may display an apathetic attitude towards the acquisition of knowledge and appear quite defensive when encouraged to succeed in school. Unfortunately, many at-risk students have resorted to associating all threatening situations as one in the same and reacting in the same manner. An example of this is a child displaying the same type of emotion when confronted with an uncomfortable classroom as he/she would when confronted with a bullying situation on the playground. Bruner (1966) believed the classroom teacher was charged with the task of alleviating the
perception of a threatening situation within the classroom through the incorporation of innovative teaching practices.

According to Fetsco and McClure (2005), children sustain knowledge better when it is self-acquired through inquiry. Unfortunately, many educators stifle the potential from many learners within the classroom by ineffectively engaging students in the learning process. Weir (1996) maintains that lesson organization, instructional delivery, and interpersonal factors must be taken into account when attempting to work with at-risk students. Rosenfield, Richman, and Bowen (1998) asserted that there were a number of contributing attributes to establishing a positive social support system for struggling learners: (1) listening to students; (2) providing emotional support; (3) challenging students emotionally to make good choices; (4) acknowledging when students make good choices and expressing appreciation; (5) offering tangible assistance; and (6) offering personal assistance when needed to the struggling learner. The authors truly believed that educators greatly influence the degree to which students feel supported.

Trebach (2003) asserted that educators must teach at-risk students at their current ability levels. Despite specifications outlined by state and federal-level officials, classroom teachers must plan lessons that meet students where they are and gradually challenges them to demonstrate a clear understanding of the connectivity that exists from one skill to the next. He further stated that every at-risk child has a discipline gap. This merely refers to the cognitive gap that exists between a child’s performance level and the level at which he/she is expected to perform. Unfortunately, when a child feels as if he/she will be unsuccessfully with regard to task completion, there is a greater tendency for a reaction that spawns for emotion (namely misconduct of some sort). Surprisingly,
Ellis (1997) conducted a series of interviews with at-risk students to investigate why many exhibited unruly behavior in certain classroom settings. His findings indicated that many children are well aware of techniques employed by classroom teachers and school support staff used to modify unfavorable behaviors. Ultimately, a child’s relationship with his/her teacher is the determining factor as to whether or not he/she will change the undesirable behavior.

Pierce (2001) conducted a similar study, and his findings were conclusive in nature with those of Ellis (1997). He found that increased student achievement was strongly correlated to positive student-teacher interaction throughout the course of the school term. He argued that teachers must carry out the following actions when attempting to meet the needs of at-risk learners: (1) be mindful of correct standards of behavior(s) and organize the classroom in a manner that is sensitive to those needs; (2) employ a myriad of roles when offering support to the students; and (3) exhibit a great deal of enthusiasm towards those learners; express an interest in them as individuals.

Learners who are referred to as at-risk for academic failure often struggle with basic reading skills that interfere with adequate reading development and fluency (Deno, Fuchs, Marston, & Jongho, 2001). They are defined as students who may have socioeconomic hinderances, such as poverty, and/or learning disabilities which may cause them to have an academic disadvantage (Education Week, 2001). Yumiko (2009) asserts that financial and residential stability are highly correlated with educational success of children. Homelessness is strongly associated with poor educational outcomes for children resulting in academic struggle and/or failure. In 2006, approximately 17% (12 million) children in the United States lived in poverty-stricken environments
(National Center for Children in Poverty, 2006). In 2008, an astonishing 44% of U.S. children were said to be living in poverty-stricken environments that prohibited many from having their basic needs met (Wright & Chau, 2009).

Research confirms that poverty rates for children have drastically increased by 50% within the United States over the past 30 years (Vernon-Feagans, Hammer, Miccio, & Manlove, 2002). Poverty-stricken children are often without a nurturing home environment, parental support, nutritious foods, and care for basic dental and health related needs. As a result, these children more often times than not perform poorly in an academic arena. Students who typically struggle when reading are often said to display lower academic competence when compared to their peers (Vaughn, Wanzek, Murray, Scammacca, Linan-Thompson, & Woodruff, 2009).

Teacher Support Teams (TST)

If a teacher discovers that a child is struggling academically, there are a number of measures that must be taken. Initially, the teacher must make an attempt to remediate the student in some degree. This may include providing additional practice work for the student reinforcing skills that have been covered but were not successfully mastered. If remediation attempts prove to be unsuccessful, the teacher should then inform the Teacher Support Team chairperson. According to the Mississippi Department of Education’s Teacher Support Team manual (Teacher Support Team Manual: Mississippi Department of Education, 2005), the chairperson of the team is either the school administrator or the administrator’s designee. The team is ordinarily small; it is comprised of three members: the chairperson, the referring teacher, and an instructional
specialist or school counselor. The parent or guardian of the child being referred is also an active team member.

The purpose of the school’s TST is to function as a problem-solving unit at the local building level. The TST serves as an interactive consultant panel of members for classroom teachers within individual schools. The members meet on regularly scheduled dates and times. There are five stages of the TST process. Stage one is a request for assistance by a classroom teacher. This request is made when classroom accommodations and teaching strategies fail to resolve the child’s academic performance problem, when the child has been retained a multiple of times, and when the classroom teacher has submitted the required form. The goal of this stage is to assist the teacher in implementing different strategies within the classroom to further accommodate the struggling learner. Stage two serves a gate-keeping function.

This simply means that the intervention required to remedy the referred problem is aligned with resources that are needed to aid the classroom teacher throughout the process. An intervention is defined as an action that differs from the activities that typically occur in the regular classroom. None of the following: a reduction in the size of assignments, preferential seating within the classroom, classroom observations, or parent contacts. Interventions must be documented alterations that are made to daily lessons. Similarly, accommodations are alterations in the manner in which instruction is delivered and tasks are completed. Accommodations are geared towards enabling children with learning disabilities to complete the same assignments as the other students within their class. The content of the assignment should not be altered when providing an accommodation (National Center for Learning Disabilities, 2006). During this stage, the
team may look at strategies that have proven to be successful within other teachers’ classrooms, utilize intervention programs that are available at the school and listed in the Teacher Support Team Manual (Title I and English as a Second Language-ESL), and consult with curriculum specialists at the school for further assistance in acquiring different teaching strategies (Teacher Support Team Manual: Mississippi Department of Education, 2005).

Stage three is geared towards processes the data that has been collected. Team members evaluate the student’s attendance records, grade reports, state test scores, and intervention/accommodation documentation submitted by the classroom teacher. At this point, the members are able to define the specific, measurable, academic issue. In stage four, members develop a specific intervention that should be implemented by the teacher to assist the child. Stage five is the evaluation stage. Members carefully examine all of the documentation that has been submitted by the classroom teacher regarding the student’s academic performance following the implementation of the prescribed intervention.

There are many supporters of the TST process. Many applaud the fact that teachers are provided with a “support system” for assisting struggling students. They are also encouraged and permitted to share strategies with one another which alleviates a great deal of the ambiguity surrounding teaching a myriad of performance levels in one, small classroom. This allows educators to utilize one another as valuable resources. There are those who oppose the process, as well. Perry Zirkel (2003) asserted that in many instances there is an over-identification under the Individuals with Disabilities Act (IDEA) for certain classifications by TST’s. On the contrary, districts are very
apprehensive about applying the required elements for eligibility under the Section 504 which is the alternative to IDEA. Students who typically do not qualify for special education services but consistently struggle academically are often eligible for services under the *Section 504* providing districts approve the recommendation.

*Three Tier Instructional Model*

In attempt to prevent the over-identification of children as being disabled when other issues may be contributing factors to academic failure, the state of Mississippi established a mandate in January 2005 that consists of a three-tier model of instruction. It is designed to satisfy the academic needs of all students including those who struggle academically. The Individuals with Disabilities Education Improvement Act of 2004 asserts that the first placement option a school system must consider for students with learning disabilities, regardless of the severity or disability category, is the regular classroom (Giangreco, 2007). The Three Tier Model is a prevention model geared towards identifying those struggling students before they fall behind and providing the essentials those students will need throughout their academic career. The question is not whether the student is capable of pursuing the same academic outcome as his/her age-level classmates, but the question is whether the student’s needs appropriately be addressed in the regular classroom setting (Giangreco, 2007). The model is comprised of three-tiers of instruction that are outlined in the Mississippi Department of Education’s Teacher Support Team Manual.

Munday (2005) maintains that the Three Tier Instructional Model is a means for identifying at-risk learners before they “fall behind”. He believed that the model serves as a support with regard to instructional interventions for students who had been
identified as a struggling learner. Ultimately, the model was designed to allow employing flexible grouping practices for students based on their changing needs, interests, and the progress that was made. Alarmingly, Munday (2005) discovered that approximately five percent of students struggle with classroom instruction every day. As a result, those students will require interventions that cater to their unique needs and are designed to meet specific learning goals. School level administrators and intervention specialists are charged with the task of articulating the rationale behind the development of the instructional model to classroom teachers and soliciting their support during its implementation. Educators must understand that the model was not designed to merely “get students out of the regular education classroom” (p. 15). In actuality, it is a method for render additional services when helping struggling learners succeed in the regular education classroom. This model was designed to solve problems regarding maximizing the academic potential of all learners through the use of scientifically research-based interventions that are individualized for each user. It is a “prevention” tool geared towards failure prevention for struggling individuals (Coleman-Potter et al., 2005). The instructional model is comprised of three tiers: Tier I, Tier II, and Tier III. Extensive documentation is required for each student receiving services at each level. This documentation is needed to ensure that the instructional needs are met based on the individual needs and learning styles of the at-risk student.

According to the Teacher Support Team Manual: Mississippi Department of Education (2005), Tier I refers to daily classroom instruction that utilizes a curriculum based on benchmarks featured within the Mississippi Frameworks. This is the level of instruction to which all students are initially exposed on a daily basis. Timed
assessments in mathematics and reading are administered several times throughout the school term to identify those students who are not mastering grade-level appropriate skills. From those assessments, teachers are able to determine which students have not mastered the basic skills needed to perform grade-level tasks. The goal of this tier is to upgrade the current level of instruction in a whole group fashion to accommodate those students who are struggling. The Mississippi Department of Education Teacher Support Team Manual (2005) indicates that this initial Tier was designed to allow educators an opportunity to identify learners who have not developed the core academic skills necessary to succeed at the next level of instruction. In other words, students are unable to master current grade-level skills because they lack an understanding of the fundamental skills that were previously introduced. The manual also indicates that Tier I encompasses the following elements: (1) high-quality program of instruction correlated to the Mississippi State Curriculum Frameworks; (2) incorporation of research-based strategies; (3) adequate assessments of students to determine instructional strengths and deficiencies; and (4) on-going professional development designed to equip teachers with the tools needed to ensure that they maximize the academic potential of every learner within their classroom. This particular tier also acknowledges that students learn in various ways; students may be auditory, visual, tactile, and/or kinesthetic learners. Educators should plan lessons that embrace and address all of the above styles according to the manual.

Twenty to 30% of students within the regular classroom qualify for Tier II instructional interventions. The classroom teacher is charged with the duty of supplementing the current level of instruction within his/her classroom to meet the needs
of these students either on-one-one, in a small group setting, or using an approved computer-based tutorial. Within this tier, teachers must provide and document thirty additional minutes of instructional to those students identified as qualifying for this level of intervention. Typically, teachers provide additional assistance to Tier II students in a small group setting. The manual also indicates that this model was designed to afford teachers an opportunity to devise an instructional plan to meet the needs of at-risk learners with the classroom who have not responded well to Tier I differentiation. The following are a few suggested measures that can be taken by regular classroom teachers: change seating arrangement, modify assignments, offer additional opportunities for independent practice, allow student(s) to receive assistance through the use of a computer-based program, maintain open lines of communication with parents devising a plan that encourages their involvement, and/or allow student(s) to work one-on-one or in a small group to reinforce skills. Small groups are typically comprised of three to five students and enable students to differentiate instruction to meet the individual needs of those learners. By differentiating instruction, classroom teachers are able to do the following: (1) use assessment data to drive the instruction delivered to students; (2) assign students to flexible small groups that may change based on the individual progress of each group member; (3) adapt instruction to focus on the diverse learning needs; and (4) successfully match instructional materials based on student performance level/ability (Coleman-Potter et al., 2005).

Tier II students receive both the regular classroom instruction, as well as, interventions lasting a minimum of thirty minutes each day. Similar to Tier I interventions, this assistance must be documented clearly indicating the instructional
strategies employed. It is suggested that educators log the information on some type of data sheet indicating time allotted and the date on which the intervention occurred. In addition, educators must also use some form of instrument to progress monitor the struggling student twice each month. This information is needed to determine whether or not the current intervention strategy is benefiting the student, as a means for identifying potential at-risk students before they began to experience academic failure, and provide classroom teachers an opportunity to modify instruction early in term in an attempt to better equip learners with the tools needed to experience academic success (Coleman-Potter et al., 2005).

Based on the results of the progress monitoring instrument, educators are afforded an opportunity to determine which struggling student progresses to grade level. In the event that a student does progress to grade level, he/she may be removed from Tier I if the TST committee agrees. Their progress will continue to be monitored, however, along with that of all of the other students in the classroom. This is a precautionary measure taken to ensure that the student is truly progressing at the appropriate level. Students who are identified within Tier II and show no significant signs of progress elevate to the Tier III level of intervention. This is usually a small percentage of students. These students require instruction that is more intensive and designed to meet their individual needs. This is the precursor to students actually entering into the TST testing process for special education services. Tier III requires sixty minutes of additional, intensive instructional time. Students are typically assisted one-on-one or in a very small group setting comprised of two individuals.
This tier was designed to offer intensive interventions that are tailored to meet the specific learning styles and needs of struggling learners. This phase often requires an eighteen week period of time in which the classroom teacher is continuously documenting all attempts to equip the learner with the necessary tools to successfully perform on grade-level.

Educators are not required to wait until a child has been retained before referring him to the school’s TST for academic assistance. Tier III students are those who continue to struggle within the regular classroom after receiving additional assistance on the Tier II level. Whether or not the child has been retained is irrelevant. According to the Mississippi Department of Education (2006), it is imperative that all teachers document any and all intervention attempts made within their classroom for struggling students. If an intervention proves to be successful, alterations may be made which enable the child to work more independently. If an intervention does not result in the child progressing based on weekly benchmark assessments, the teacher should implement a new intervention strategy. High-quality learning does not necessarily stipulate the same curriculum and assessments for every student. Educators need to be mindful of the fact, however, that altering a child’s assessment does not mean eliminating core skills (Neill, 2003).

Identification of Tier III students relies heavily on the school-level TST which following a process: (1) classroom teacher requests assistance; (2) team meets to discuss the struggling student; (3) team identifies academic deficiencies exhibited by the learner; (4) team designs an intervention approach for the student; and (5) team evaluates the intervention to determine whether or not it successfully rectified problem. Data is a vital
component of the TST process. The following serve as different means for gathering data: report cards, common term assessments (administered by school district), cumulative record information that may denote grade retention, and student achievement on state assessments. During the initial stage of Tier III, classroom teachers are required to use various forms of data available at the school level to complete referral forms requesting instructional assistance for the struggling learner. Documentation is an integral part of the TST process, and educators must maintain accurate and thorough documentation throughout the duration of the entire process (Coleman-Potter, et al., 2005).

Initially, TST is devised to assist classroom teachers with determining appropriate interventions to use with struggling learners. Additionally, teachers gain access to the resources needed to carry out each phase of the intervention process. Coleman-Potter et al (2005) discovered an acronym that is often used during the TST process to ensure that educators are on the right track: R.I.O.T. (R= Record Review; I= Interview; O = Observation; and T= Testing). At any time, a parent can formally request that his/her child receive interventions or be considered for testing. In such an instance, the parent is required to complete a series of paperwork. Afterwards, the building-level administrator meets with the TST to determine the course of action that should be taken to satisfy the parental request.

The “consultation” phase of the process entails the utilization of the “Teacher Interview Guide” to determine the level of support services that should be rendered. During this phase, the classroom teacher is asked to complete a series of forms that will assist the team in identifying specific deficiencies that make exist with a particular
student and the proper measures that should be taken when attempting to correct them. The forms may ask the following questions: (1) What specific academic task is the student having trouble completing? (2) At what rate, does the student experience success? (3) Does the student exhibit any signs of struggle when completing tasks?

The next phase within the TST process pertains to the identification of the specific problem and analysis of data. If the team identifies an academic deficiency, they work collaboratively to try to determine the cause and prescribe a manner in which to remedy the concern. Unfortunately, Coleman-Potter et al (2005) assert that a lack of administrative involvement and support is the common cause of ineffective TST. Administrators must be mindful of the school culture when assigning team members. In most instances, team members are individuals who exude an ability to be committed, express a desire to meet the needs of struggling learners, possess a great deal of expertise with regard to applicable teaching strategies and possible interventions, are approachable and highly revered by faculty, maintain a high level of confidentiality, and are organized.

When school administrators demonstrate a high level of commitment to TST and establish clear expectations, the entire TST process is enhanced. It is imperative that committee members undergo training prior to meeting with students, parents, and classroom teachers. Members should be well versed in establishing individual learning goals for struggling learners. When establishing the goals, the following should be considered regarding the student: student’s strengths, learning style, manner in which the child tackles a difficult task, interventions that have previously been employed at Tier I and Tier II of the process, and whether or not the classroom teacher differentiated instruction in any capacity to better meet the needs of the student. Coleman-Potter et al
continue to assert that the next stage of the process pertains to the TST creating and implementing an individual intervention plan designed to meet the needs of the struggling learner. Baseline testing data, progress monitoring data, and remedial techniques are considered during the developmental stages, as well. TST are encouraged to utilize all available resources and clearly identify best teaching practices that should be exercised within the classroom.

The intervention should primarily encompass six weeks. In the unlikely event that a student begins to regress during this phase, the TST will reconvene and modify the teaching practices and/or interventions that should be used. Data must be submitted to the TST consistently throughout the duration of the six week period of time. In essence, the academic interventions recommended by the TST are designed to enable the struggling learner to be more involved in the lesson. A minimum of six to eight weekly assessments are needed by the TST to effectively analyze the student’s performance to determine whether or not a trend exists. It is vital that support staff/TST members observe some of the interventions to ensure that they are being performed in the manner that were decided upon by the team. Munday (2005) suggests that the frequency in which a teacher cues a student increases during an intervention.

The last phase of the TST process involves evaluating the effectiveness of the individualized instruction plan for the struggling learner using the on-going data that was submitted. During this phase, the TST determines whether or not particular interventions were deemed a success. At this point, the committee also reviews the observations that were conducted throughout the process to ensure that integrity was not comprised in any way. When the team collectively determines that an intervention failed to meet the need
addressed, revisions are made to the plan to incorporate a different strategy (Coleman-Potter et al., 2005). All of the necessary forms that are suggested throughout the process are available via the web at the Mississippi Department of Education’s (MDE) website (www.mde.k12.ms.us). If the TST determines that a particular intervention has successfully equipped a student with the necessary tools to progress, the TST may decide to either continue with the intervention or place the student “back at the core curriculum” (Munday, 2005). In the event that the intervention is unsuccessful and the team reconvenes to prescribe a different intervention that fails to adequately assist the student, the team may consider referring the student to the district for special education testing to determine whether or not the child possess a learning disability.

**Intervention Strategies**

Statistics show that approximately five to eight percent of school-age students have a disability associated with mathematics. The Tier III phase of the intervention model requires that educators provide sixty minutes of additional mathematics instruction to students who are struggling academically. A number of educators and researchers support the differentiated instruction approach to teaching benchmark skills and providing adequate interventions for those students in need. In order for differentiated instruction to be a successful approach to teaching, educators must first become educated on how to actually implement the strategy. Within this approach, students work in homogeneous, small group settings that enable them to perform at their current academic level. Tomlinson (2003) succinctly states that the classroom can be viewed as a bike race. Every student is provided an opportunity to finish the race at his/her own pace.
Performance level differences do not disqualify any of the students from participating (Wormeli, 2003). With a differentiated approach to instructing/engaging students, educators are encouraged to create opportunities for a myriad of instructional interactions to take place simultaneously within the classroom. This is acquired through inquiry-based activities that enable students to use higher-order thinking skills to process information. Within this structure, educators must be mindful that the level of teaching should be the same regardless of the group configuration. In the process of making classroom activities more inclusive, educators improve the manner in which they teach the broader range of students who do not have a disability (Giangreco, 2007). This is also viewed as a proactive approach to improving classroom learning for all students (Pettig, 2000). Educators create “mini learning communities” within their classroom. Groups may be created homogenously based on the academic performance levels of the students. Once the groups have been established, teachers will introduce a lesson/skill in a whole group fashion and allow the students to disseminate before working on related activities. Each group will have a relevant activity that is based on the current academic performance level of the individual members. A benefit to implementing this strategy within the classroom is that teachers are permitted to work with low-ability level groups intensively while the advanced students work at a more rapid pace. Every child is engaged while the teacher is assisting a specific group.

Another commonly used intervention strategy is one-on-one peer assistance. Class-wide peer tutoring (CWPT) is a class of instructional strategies in which peers who have been trained and monitored by teachers assist other struggling students. Typically, an advanced student is paired with one that is struggling academically. It is vital that the
students who are tutoring others are trained. The training will basically enable them to serve as an assistant for the struggling student. They will ask questions and prompt the student being tutored to insure that he/she has a fundamental understanding of the skill being taught. This is typically teacher-directed. The teacher introduces lessons in a whole group fashion. CWPT is known to benefit both the tutor and the student being tutored. It improves student engagement and achievement because many students are engaged simultaneously as opposed to one student responding during a teacher-led, whole class activity. One student models the operation that is required to solve a particular problem to ensure that the other understands the concept or process. Another benefit to paring students within the classroom is students are provided an opportunity to explain their interpretation of the directions for assignments. They are also allotted an opportunity to specify questions they may have regarding the assignment. The trained tutor can assist the struggling student with creating a math reference sheet to keep at his/her desk to reinforce the skills that were reviewed (Kunsch, Jitendra, and Sood, 2007).

As tutors are working with students, they are in a position that enables them to explain the importance of learning certain concepts. The tutor can help the student understand that math concepts build upon one another for instance. If a student does not learn to multiply, he/she will have difficulty understanding division concepts. Struggling students may learn to highlight or identify operation symbols to ensure that they have an understanding of the method they must use to solve particular problems. Tutors may also assist in helping struggling students organize their work in a systematic fashion (McCarney & Wunderlich, 2006).
The quality of computer software has drastically improved throughout the past decade. Educators are provided with a number of technological resources to use to assist struggling students and reinforce skills that have not been mastered. There are a number of benefits associated with using computer software to remediate or assist struggling students. Tutorials typically present information but also guide students through the learning processes. Computer-based tutorials usually follow a structured sequence. The lesson begins with a brief introduction of the skills/concepts that will be covered. During the actual lesson, the student is provided with immediate feedback after answering each question. A summary appears at the close of the lesson. Tutorials motivate students through multimedia capabilities. Students are permitted to work at their own pace in an individualized instruction mode and are provided numerous opportunities for reinforcement and correction of mistakes. Typically, tutorials are used to support and reinforce classroom instruction and to review previously covered material (Harris & Hadfield, 2003).

**Differentiated Instruction**

In an attempt to comply with the stipulations outlined in NCLB, educators are charged with the task of differentiating classroom instruction and assignments to meet the diverse needs of learners. According to Tomlinson (1999), differentiation is accomplished in an assortment of ways. Typically, one would consider any approach an educator employs to assist an individual or small group of students in understanding an academic concept as the basic method of differentiating instruction. One element of successfully differentiating within the classroom pertains to using assessment data to drive instruction. For the most part, the strategies used often involve small, flexible grouping methods (changing when deemed necessary) that present content in a scaffolded
manner that progressively increases in rigor (Munday, 2005). Student readiness, interest, and/or learning styles are often considered when determining the composition of the each small group. Tomlinson (1999) maintains that there are four basic elements of differentiation: content, process, product, and learning environment.

When educators differentiate based on content, they are scaffolding lessons to ensure that students truly grasp the fundamental skills necessary to understand the task at hand while simultaneously offering enrichment opportunities for the students who need them. An example of this would be creating an environment within the classroom in which all students are able to read at varying levels. Another example would be audio recording text material to accommodate auditory learners. Developing vocabulary and spelling lists based on individual student’s performance level (Tomlinson, 1999).

Another method of differentiating is process differentiation. This particular method involves varying the manner in which instruction is delivered and encouraging students to explore topics of interest. Educators can accomplish this by allowing students to use manipulatives and other hands-on methods when applying knowledge. Also, educators can vary the manner in which they review and/or introduce concepts to students. For instance, a teacher may orally discuss vocabulary terms and definitions with the class in a whole group manner on Monday. On Tuesday, he/she may choose to allow students to work in pairs using flashcards to review terms (Tomlinson, 1999).

A third method in which educators can differentiate instruction pertains to product differentiation. This method references varying the independent practice opportunities in which students may engage to allow for choice. Another example pertains to developing rubrics that match the varying ability levels of the students within the classroom. This
may also include allowing students to engage in hands-on activities to demonstrate an understanding of the information presented. Ultimately, the goal of the educator is to create an environment that promotes student choice (Tomlinson, 1999).

Lastly, developing a learning environment that promotes acceptance of creative and cultural differences among learners is another means of differentiating instruction. This may include varying the manner in which desks/tables are arranged within the classroom. An example of this may be grouping desks together so that students are allowed to work in pairs or placing chairs at a table to allow students to complete an assignment in a small group. Groups may be established based on learning styles, academic readiness, or a combination of both (Tomlinson, 1999).

In addition, Tomlinson (2003) asserts that there are four student traits that must be addressed by educators in order to effectively differentiate instruction within the classroom. **Student readiness** is the first trait. This primarily refers to a “student’s knowledge, understanding, and skill related to a particular sequence of learning” (2003, p. 3). **Interest** is the second student trait that must be prevalent when differentiating instruction. A student’s interest makes him/her inquisitive and engaged in the learning process. Educators are charged with the task of identifying students’ interests and finding creative ways in which to enhance them. **Learning profile** is the third student trait identified by Tomlinson. This particular trait refers to the manner in which children acquire knowledge and often includes learning styles, intelligence preferences, gender, culture, and any learning disability that may impede a child from learning. The final student trait associated with effective differentiation of classroom instruction is **affect**. This trait focuses on students’ perceptions of self, their work, and the classroom
Drapeau (2004) maintains that students can typically be classified into one of six categories: (1) academic learner; (2) perfectionist learner; (3) creative learner; (4) struggling learner; (5) invisible learner; and (6) high-energy student. In order to effectively meet the needs of each learner, classroom teachers must determine which category each is classified. Academic learners are typically referred to as “model students”. They typically follow classroom rules, are active engaged in all lessons, and willingly contribute to class discussions. These are the students are self-motivated. Perfectionist learners can sometimes include academic learners. One major difference, however, is that perfectionist learners can easily become at-risk students when they aspire to produce work that is perfect in every way. Creative learners can be described in four ways: (1) fluency; (2) flexibility; (3) originality; and (4) elaboration. Fluency pertains to the ability to generate thought-provoking ideas. Flexibility encompasses varying the way that one processes information or thinks. Originality, according to Drapeau, simply means generate authentic ideas. Finally, elaboration pertains to adding information to the ideas presented.

Struggling learners are individuals who lack motivation. Many have a difficult time grasping academic concepts and often resort to behaving inappropriately to conceal their academic frustration. Invisible students are the individuals who sit quietly in the classroom, work extremely well in cooperative groups because they rarely voice their own opinion or share ideas, and lack self-confidence. On the contrary, high energy students are individuals who have a difficult time channeling their energy in one direction. These students often appear off task because they jump from one idea to
another haphazardly. It is imperative that educators determine which of the six categories a student falls into before prescribing a differentiation plan.

**Academic Interest**

Research has conclusively indicated that students’ interests can tremendously impact academic achievement and the overall learning experience (Koller, Baumert, & Schnabel, 2001). When educators find creative ways in which to develop lessons that are directly linked to students’ interests, the students are usually more intrinsically motivated and engaged in the learning experience. Typically, students who are at-risk or struggle with certain skills are often not confident in their own abilities which often results in a negative attitudes towards those academic concepts. Koller, et. al., (2001) maintain that there is a strong correlation between intrinsic motivation and perceived competence. This is known as the “Cognitive Evaluation Theory” (p. 449). In essence, the more competent a person perceives himself to be with regard to a particular skill or concept, the more motivated he will be to complete activities associated with the concept.

**Learning Styles**

Tomlinson (2011) asserts that the commonalities among the learners within our classrooms make them human; the differences among those learners make them individuals (p. 1). Students do not master concepts at the same rate, nor do they acquire knowledge in the same manner. Dunn and Dunn (1987) developed the notion of a learning style model in an effort to investigate the ways in which individuals acquire knowledge. The model classified learning styles in the following manner: auditory, visual, tactile, and tactile/kinesthetic. According to Gregory and Chapman (2002), there are many distinct differences among the various learning styles. Naturally, auditory
learners are classified as individuals who prefer to have instruction delivered orally. These learners love dialoguing with peers and sharing different viewpoints to develop a greater understanding of academic concepts. Visual learners prefer to have instruction delivered using some type of visual representation such as a graphic organizer, diagram, or picture. They enjoy seeing how concepts connect and often use some type of diagram to organize their thoughts in a logical manner. Tactile learners prefer to be permitted to engage in hands-on learning opportunities within the classroom. Permitting these learners to write or draw their interpretation of academic concepts is an excellent way in which to assess whether or not the students have understood the information presented. Tactile/kinesthetic learners prefer to have an opportunity to become physically involved when demonstrating an understanding of concepts. This makes learning much more relevant and meaningful to them.

When planning lessons, educators should offer a variety of experiences and a myriad of ways in which students acquire new information (Gregory & Chapman, 2002). In order for teachers to effective assist students in getting the most out of each day’s lesson, material must be presented in small increments/segments, educators must model strategies that may be used when demonstrating an understanding of the concept(s), and educators must provide students with adequate opportunities to practice while receiving feedback (p. 49).

**Multiple Intelligences Theory**

The Theory of Multiple Intelligences was developed by Howard Gardner. Ultimately, it described the manner in which individuals acquired information. The eight intelligences are: (1) linguistic (language); (2) logical-mathematical; (3) spatial,
(4) musical; (5) bodily-kinesthetic; (6) interpersonal; (7) intrapersonal; and (8) naturalistic (Gardner, 1993; Smith, 2002). Linguistic intelligence primarily deals with the use of written and spoken grammar and language as a means of articulating one’s thoughts. Logical-mathematical intelligence refers to the ability to easily complete mathematical tasks such as: solving one and/or multi-step problems, analyzing problems in a logical manner, and investigating math related issues that are scientific in nature.

Spatial intelligence is often associated with the ability to understand one’s surroundings. Spatial learners are also quite efficient with regard to identifying specific details associated with a problem. Individuals who are musically inclined have a tendency to focus on performance, production, perception, and musical patterns. Bodily-kinesthetic intelligence pertains to an ability to express oneself through movement. Individuals who exhibit interpersonal intelligence have an ability to understand desires of others and/or intentions. These individuals work well in cooperative learning environments. On the contrary, individuals who exhibit intrapersonal intelligence only have an ability to access their own emotions and feelings in an effort to guide their behavior. Naturalistic intelligence pertains to one’s ability to recognize and/or categorize various aspects of the environment (Smith, 2002). Each individual is equipped with components associated with each of the intelligences. Some, however, are more dominant than others.

According to Teele (2000), students feel more connected to daily lessons when instructional methods are geared towards one or more of their dominant intelligences (p. 84).
Emotional Intelligence Theory

The Theory of Emotional Intelligence is another component that is closely associated with effectively differentiating instruction within today’s classrooms. This theory pertains to one’s ability to monitor and regulate one’s own feelings and use those feelings to guide various thought processes (Goleman, 2006). According to Goleman, there are five emotional intelligences individuals possess and use throughout the course of their life: (1) self-awareness, (2) self-regulation, (3) motivation, (4) empathy, and (5) social skills. Self-awareness is associated with the ability to recognize a feeling and make appropriate decisions based on that feeling. Additionally, individuals who exhibit a great deal of self-awareness often have a better sense of self-confidence. Self-regulation pertains to the ability to express control of one’s emotions when confronted with difficult tasks and/or situations. Motivation is an emotional characteristic trait that assists individuals in reaching various goals and creates a desire within them to do their absolute best. Empathy is an emotional trait that affords individuals an opportunity to recognize the emotions of others and establish a relationship with individuals who share opposing views and traits. Social skills are essential in controlling one’s emotions and exercising control in an effort to maintain healthy relationships (Goleman, 1998, 2006).

Constructivist Theory

The Constructivist Theory is an approach to teaching that affords educators an opportunity to address multiple learning styles and intelligences simultaneously. There are five principles associated with this theory: (1) Rather than being a passive process, learning should be active, (2) Because learning is often considered to be social in nature, it is likely to occur when children are afforded the opportunity to work cooperatively and
share ideas, discuss problem solving strategies, and inquire about possible outcomes. (3) Students successfully transfer knowledge when they are provided an opportunity to create a personal meaning of a concept/content, (4) Students exhibit a deeper understanding of subject matter when encouraged to reflect, and (5) Prior experiences greatly impact the ability for one to acquire new knowledge. King-Shaver (2008) asserts that it is imperative for educators to take the time to establish a relationship with their students in an effort to learn about each child’s interests and prior experiences.

Summary

Ultimately, students within today’s classrooms perform on an assortment of levels. It is the responsibility of classroom teachers to establish positive relationships with their students in an effort to learn more about their learning preferences, interests, and the level on which each performs. Differentiated Instruction is an approach to meeting the academic needs of all learners within today’s classrooms. When teachers successfully implement D.I., students experience some level of success and feel as if they truly contribute to the overall success of the class.
CHAPTER III

METHODOLOGY

Overview

Today’s classrooms are comprised of students who perform on a variety of levels. As a result of both state and federal mandates (*No Child Left Behind Act 2001*, revisions to Accountability Models, emphasis on AYP, revisions to state standards, emphasis on Depth of Knowledge, and RtI—Three Tier Model), a number of curriculum changes have occurred forcing teachers to modify current teaching practices in an effort to maximize the academic potential of all learners within their classrooms. Educators have been charged with the task of ensuring that all students master the required grade level benchmarks at the end of each school term. The stricter state mandates have placed many classroom teachers in a compromising position that leaves them with no time to remediate students who may struggle with mastering a skill and minimal time to provide enrichment opportunities for those high-achieving students. Furthermore, Federal funding is directly linked to student performance on state assessments. The make-up of today’s classrooms and those of the future will continue to be comprised of students who range in performance levels from extremely low functioning to extremely high. Administrators and educators must collaboratively find ways to keep all students challenged and engaged in learning each day to maximize each child’s academic potential and make strides to close the ever-growing achievement gap.

Currently, school accountability is linked to student performance on the State Curriculum Test, Second Edition. The assessment is administered to students in grades 3-8. This criterion-referenced assessment is closely aligned with the state frameworks.
Initially, the assessments were developed in an effort to comply with the stipulations outlined in *The No Child Left Behind Act of 2001*. Student achievement data is used in the Mississippi Statewide Accountability System when determining academic Growth, Adequate Yearly Progress (AYP), and Achievement. Additionally, educators use the assessment results to improve instructional practices. Performance levels are assigned to students based on scale scores. The performance levels are Minimal, Basic, Proficient, and Advanced.

The purpose of this study was to identify teachers who successfully differentiated instruction and those who were unsuccessful in differentiating instruction based on student achievement. The instructional strategies employed by teachers who differentiated instruction as well as those employed by teachers who do not differentiate instruction were reported. The rationale for reporting the observed instructional strategies was to afford all students the opportunity to have their academic needs met in all classes. This chapter explored differentiated instructional practices employed within 3rd, 4th, and 5th grade Reading and Language Arts classrooms and their impact on student achievement. Additionally, this study examined whether or not differences existed between the observed and perceived behaviors of teachers regarding differentiated instruction. The goal of this study was to identify teaching strategies and practices that could be utilized to maximize the academic potential of all learners.

Two types of teachers were featured in this study: those who differentiated instruction and those who do not. Teachers who differentiate instruction take the time to get to know the academic needs of their learners and develop lessons that are student-centered, interactive, engaging, vary in pace, encourage student collaboration, allow for
student choice, and are scaffolded in nature to meet learners where they are and progressively get them where they need to be using best teaching practices. Teachers who do not differentiate instruction typically do not spend a great deal of time getting to know the academic needs of their learners and often develop lessons that are teacher-centered, delivered at one pace, often require independent student work, do not allow for student choice, and are delivered at one instructional level.

The researcher first requested permission from several district superintendents to gain access to achievement scores of students. The researcher also requested permission to conduct research from the University’s Institutional Review Board.

**Research Design**

The study used an observational, descriptive, causal comparative research design in several coastal, school districts. The study had both a quantitative and qualitative component. The primary design for the study was a correlation and a t-test. For the purpose of this study, the qualitative component of the project utilized the researcher as the primary instrument. Ultimately, the primary instrument of data collection and data analysis was inductive.

The research study did not directly involve students. The researcher analyzed the 2011 MCT2 Language Arts student achievement data of each participating teacher along with perception surveys and the observation instrument to identify which teachers differentiated instruction and which did not. The independent variables in the study were whether or not teachers differentiated instruction. The dependent variables were student performance as indicated on the 2011 MCT2 Language Arts assessment, the perception survey, and data compiled using the observation instrument. The school districts that
were used in this study were comprised of diverse groups of teachers and students. Many of the schools received Title I funding as they had a high percentage of students qualifying to receive free and/or reduced lunch services.

Participants

The researcher used purposeful sampling throughout the course of this study. It is typically associated with studies that require participants to have experience with the topic that is being addressed. The study’s participants were comprised of certified 3rd, 4th, and 5th grade Reading/Language Arts teachers along the Mississippi Gulf Coast. The researcher did not request participation from kindergarten, first, nor second grade teachers because the Mississippi Curriculum Test, Second Edition (MCT2) was only administered in grades 3-8. Thus, the researcher would not have assessment data to use when determining whether or not a child showed academic gains from one year to the next. The criteria that was used to select classroom teacher participants was: currently taught third, fourth, or fifth grade Language Arts or Reading and taught Language Arts or Reading during the 2010-2011 school year and agreed to complete the perception survey. In addition, participants agreed to afford the researcher an opportunity to observe within the classroom setting.

Instrumentation

The researcher reviewed previously conducted studies and read a great deal of literature related to differentiation when developing the instrument. Conclusively, the literature showed that many educators have an inaccurate depiction of what differentiation looks like inside today’s classrooms. Much of the literature categorized differentiation in four ways: content, process, product, and environment. Content
differentiation pertains to varying the pace by which instruction is delivered for individual students. Process differentiation focuses on varying the manner in which instruction is delivered to students. To differentiate by product, educators afford students an opportunity to choose the method by which they will show understanding/mastery of a specific skill/objective. Finally, environmental differentiation is often associated with making variations to the physical learning environment in which children interact with one another.

After reviewing two instruments that were developed by Tracy Jackson (2010) for the purpose of her research entitled *Teacher Depth of Knowledge as a Predictor of Student Achievement in the Middle Grades*, the researcher contacted Dr. Jackson to request permission to modify her instruments. After receiving permission from Dr. Jackson (see Appendix E), the researcher developed two instruments that were used in the study (see Appendix A and Appendix B). The first instrument was a perception survey comprised of statements designed to assess each participant’s level of agreement with regard to training and instructional practices associated with differentiated instruction. Each statement was based on a three-point Likert scale ranging from agree to disagree (see Appendix A). The second instrument was an observation instrument (see Appendix B), and the items featured on this instrument were tested for reliability and validity by pilot group that was comprised of two, classroom teachers. The observation piece was developed to enable the researcher to assess the level at which teachers incorporated elements of differentiated instruction into their classrooms. The observation instrument was comprised of statements associated with the perception survey and was based on a three-point Likert scale ranging from agree to disagree. In addition, the
observation instrument afforded the researcher an opportunity to determine whether or not teachers truly had an understanding of differentiated instruction and employed strategies within their classrooms.

On the perception survey, questions 1-4 were based on perceptions the participants had with regard to Professional Development opportunities within their districts, training, the impact differentiated instruction had on student achievement, and capability of students to learn. Item 10 pertained to the methods by which the participants delivered instruction, and item 17 pertained to how frequent group assignments changed in the participating classrooms. The following one-to-one correlations existed between the perception survey and the observation instrument: item 2 on the perception survey correlated with item 1 on the observation instrument; items 5-9 on the perception survey correlated with items 2-6 on the observation instrument. Items 11-16 correlated with items 7-12 on the observation instrument, and items 18-20 on the perception survey correlated with items 13-15 on the observation instrument. In addition, the researcher documented the point of the lesson during which the observation occurred and the manner in which the students were grouped.

Procedures

The researcher received dissertation committee approval to conduct the research project in July 2011. At which time, the researcher submitted an application requesting approval from the IRB for the purpose of conducting research. Prior to submitting paperwork to the IRB, the researcher mailed a packet containing a cover letter (refer to Appendix C) that provided the superintendents, administrators, and classroom teachers of the participating districts an overview of the researcher’s intentions. In return, those who
were interested in participating in the study drafted a letter of consent (refer to Appendix D) and submitted it to the researcher. After obtaining IRB approval (Appendix F), the researcher enlisted two, certified teachers to participate in a pilot study to test the items featured on the observation instrument for reliability and validity. The panel assessed whether or not the items featured on the instrument were written clearly and addressed topics found within the study. After meeting with the pilot study group, the researcher disseminated packets to administrators in the participating districts enlisting participation from third, fourth, and fifth grade Language Arts teachers. The packets contained a letter that explained the purpose of the study and the manner in which the researcher intended to acquire information. After collecting the perception surveys, the researcher assigned each a number. At that point, the researcher obtained 2011 MCT2 Language Arts achievement scores for participating teachers and analyzed each to determine whether or not the majority of the students performed within the Advanced and Proficient categories or the Basic and Minimal categories. The student achievement data primarily enabled the researcher to categorize each teacher as either someone who differentiated instruction or someone who did not. If the participant answered Agree or Neither Agree nor Disagree to all of the questions on the perception survey and at least 85%-90% of students scored Proficient or Advanced on the 2011 MCT2 Language Arts assessment, the teacher was considered one who differentiated instruction. If the participant answered Disagree to any of the questions or at least 10% or more of his/her students scored in the Basic or Minimal categories, the teacher was considered one who did not differentiate instruction.

The researcher reviewed the student achievement data to determine which teachers had high percentages of students in each of the categories indicated above.
(Advanced and Proficient or Basic and Minimal). That was the basis by which the researcher initially categorized the teachers as either someone who differentiated and someone who did not. After disaggregating the student achievement data and reviewing the perception surveys, the researcher asked that each participant provide consent to be observed in their classroom environment. That afforded the researcher an opportunity to observe the instructional strategies associated with the four elements of differentiated instruction (process, content, product, and environment). Teachers who employ process differentiation vary the method by which they deliver instruction each day. An example of this would be a teacher who introduced the weekly spelling words by having the students recite them orally on Monday and allow them to play a spelling game instead of reciting the words on Tuesday. Content differentiation is demonstrated when teachers vary the pace at which students in the class learn new skills. An example of this may be scaffolding a lesson to afford a struggling student an opportunity to review foundational skills prior to completing work related to the current skill. Product differentiation is demonstrated by allowing for student choice when demonstrating understanding/mastery of certain concepts/skills/objectives. Environmental differentiation is demonstrated by rearranging students’ seating arrangements to afford them an opportunity to work within different learning environments (cooperative groups, pairs, etc.). The results of the observations would be compared to the perception surveys to determine whether or not a correlation existed.
Limitations

When analyzing the results of this study, the researcher considered the following limitations:

1. The researcher’s presence could potentially impede the teacher from effectively modeling the instructional strategies associated with differentiated instruction that were indicated on the perception survey.

2. The researcher was an administrator in one of the participating districts and may have observed several of the participating teachers. This may impede some of the participants from modeling the instructional strategies associated with differentiated instruction that were indicated on the perception survey.

Data Analysis

Quantitative

Descriptive statistics included the means and standard deviations associated with the responses indicated by teachers on the perception surveys and frequencies related to the demographic information. Based on the number of teachers who provided consent to allow the researcher to conduct observations, independent sample t-tests were run to test the hypotheses.

Summary

Chapter III provided an account of the procedures that were followed when conducting the study. In addition, the researcher explained the instruments associated with the study in an effort to show the connectivity to related literature. This chapter addressed the purpose and goal of the study and the appropriateness of the particular research design of choice. Teacher perception surveys were used to determine teachers’
perceptions of differentiated instruction and best teaching practices that were employed at their facility to meet the needs of all learners.
CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to identify teachers who successfully differentiated instruction and those who were unsuccessful in differentiating instruction based on student achievement. The instructional strategies employed by teachers who differentiated instruction as well as those employed by teachers who did not differentiate instruction were reported. The rationale for reporting the observed instructional strategies was to afford all students the opportunity to have their academic needs met in all classes. Additionally, this study examined whether or not differences existed between the observed and perceived behaviors of teachers regarding differentiated instruction. The goal of this study was to identify teaching strategies and practices that could be utilized to maximize the academic potential of all learners. The purpose of this chapter was to present an analysis of the data collected throughout the course of this study.

Descriptive Statistics

A total of 37 participants completed the perception survey associated with the study and provided consent to allow the researcher to conduct the observation portion of the study. The instrument used during the observation portion of the study was derived from the perception survey. The perception survey asked participants questions associated with the four elements of differentiation (process, content, product, and environment), as well as, demographic information such as the content area in which he/she taught and the number of years of teaching experience (Table 1 and Table 2). In addition, participants were asked to identify the highest degree attained (Table 3). This demographic data afforded the researcher the opportunity to gain background information
that could potentially explain the manner in which participants answered certain questions.

Table 1

*Subject Area Taught*

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>Frequency</th>
<th>Percent</th>
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<tbody>
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<td>3rd grade Rdg/Language</td>
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<td>37.8%</td>
</tr>
<tr>
<td>4th grade Rdg/Language</td>
<td>14</td>
<td>37.8%</td>
</tr>
<tr>
<td>5th grade Rdg/Language</td>
<td>9</td>
<td>24.3%</td>
</tr>
</tbody>
</table>

All 37 participants answered the question pertaining to the content area in which they taught. Of the 37 participants, 75.7% taught either third or fourth grade. Only 24.3% of the participants indicated that they taught fifth grade Reading/Language Arts.

Table 2

*Years of Teaching Experience*

<table>
<thead>
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<th>Number of years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
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<td>21.6%</td>
</tr>
<tr>
<td>3-5</td>
<td>11</td>
<td>29.7%</td>
</tr>
<tr>
<td>6 or more</td>
<td>18</td>
<td>48.6%</td>
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</tbody>
</table>
The majority of the participants, 48.6%, indicated that they had six or more years of teaching experience. Only eight of the 37 participants, 21.6%, had one or two years of experience.

Table 3

*Educational Degrees*

<table>
<thead>
<tr>
<th>Degrees Held</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bachelor’s</td>
<td>21</td>
<td>56.8%</td>
</tr>
<tr>
<td>2. Master’s</td>
<td>16</td>
<td>43.2%</td>
</tr>
<tr>
<td>3. Specialist’s</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>4. Ed.D. or Ph.D.</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Every participant held at least a bachelor’s degree. In fact, 56.8% of the participants indicated that a B.S. or a B.A. were the highest degrees attained. None of the participants indicated that they held a degree higher than a masters. It is important to note, however, that the field in which each participant attained his/her degree was not specified. As a result, it was possible for participants to hold degrees in field unrelated to the area in which they taught.

The teacher perception survey afforded participants the opportunity to respond to statements based upon a Likert scale range of (1) disagree, (2) neither agree nor disagree, or (3) agree. The observation instrument was designed to allow the researcher to respond to statements using the same Likert scale. The frequencies associated with both the teacher perception survey and the observation instruments are indicated below for all participants (Tables 4 and 5).
Table 4

*Teacher Perception Survey Results*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Need for Professional Development pertaining to differentiation in</td>
<td>4 (10.8%)</td>
<td>9 (24.3%)</td>
<td>4 (64.9%)</td>
</tr>
<tr>
<td>district</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Teacher has been adequately trained to differentiate for all learners</td>
<td>4 (10.8%)</td>
<td>12 (32.4%)</td>
<td>20 (54.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Believes that all students were capable of learning</td>
<td></td>
<td></td>
<td>37 (100%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Believes that differentiation would increase student achievement</td>
<td>2 (5.4%)</td>
<td>2 (5.4%)</td>
<td>33 (89.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Teacher differentiates on as-needed basis</td>
<td></td>
<td></td>
<td>37 (100%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Teacher is aware of students’ learning styles/interests and related</td>
<td>7 (18.9%)</td>
<td>29 (78.4%)</td>
<td></td>
</tr>
<tr>
<td>them to instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Lessons enable students to make real-world connections</td>
<td>1 (2.7%)</td>
<td>36 (97.3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Teacher assesses for understanding throughout lesson</td>
<td></td>
<td></td>
<td>37 (100%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Teacher adjusts pace of lesson when needed</td>
<td>1 (2.7%)</td>
<td>36 (97.3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Teacher varies instructional delivery method</td>
<td></td>
<td></td>
<td>32 (86.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Design lessons that allowed for student choice</td>
<td></td>
<td></td>
<td>17 (45.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Adjust lessons for diverse learners</td>
<td></td>
<td></td>
<td>29 (78.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Assign tasks that required students to apply understanding of concepts</td>
<td></td>
<td></td>
<td>37 (100%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Adjust to students’ reading abilities and interests</td>
<td>1 (2.7%)</td>
<td>1 (2.7%)</td>
<td>34 (91.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4 (continued)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Clearly articulate what students should know, understand and be able to do</td>
<td>1 (2.7%)</td>
<td>36 (97.3%)</td>
<td></td>
</tr>
<tr>
<td>16. Group students based on readiness interests, or learning styles</td>
<td>4 (10.8%)</td>
<td>33 (89.2%)</td>
<td></td>
</tr>
<tr>
<td>17. Change the composition of groups based on activity</td>
<td>2 (5.4%)</td>
<td>35 (94.6%)</td>
<td></td>
</tr>
<tr>
<td>18. Structures class to support independent and cooperative learning activities</td>
<td>1 (2.7%)</td>
<td>36 (97.3%)</td>
<td></td>
</tr>
<tr>
<td>19. Students usually complete assignments cooperatively</td>
<td>3 (8.1%)</td>
<td>9 (24.3%)</td>
<td>25 (67.6%)</td>
</tr>
<tr>
<td>20. Students usually complete assignments independently</td>
<td>1 (2.7%)</td>
<td>10 (27%)</td>
<td>26 (70.3%)</td>
</tr>
</tbody>
</table>

Based on Table 4, it was discovered that all participants agreed to items 3, 5, 8, and 13. Those items all pertained to the teacher being aware of the needs of his/her students and attending to those needs. Thirty-six of the thirty-seven participants agreed with perception item 13 which pertained to assigning tasks that required students to apply and extend their understanding of various concepts.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Neither Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher displayed clear understanding of D.I.</td>
<td>7 (18.9%)</td>
<td>11 (29.7%)</td>
<td>19 (51.4%)</td>
</tr>
<tr>
<td>2. Evidence that teacher differentiates on as-needed basis</td>
<td>6 (16.2%)</td>
<td>2 (5.4%)</td>
<td>29 (78.4%)</td>
</tr>
<tr>
<td>3. Evidence that instruction is related to learning styles</td>
<td>8 (21.6%)</td>
<td>2 (5.4%)</td>
<td>27 (73%)</td>
</tr>
<tr>
<td>4. Evidence that lessons make real-world connection</td>
<td>8 (21.6%)</td>
<td>5 (13.5%)</td>
<td>24 (64.9%)</td>
</tr>
<tr>
<td>5. Teacher assesses for understanding throughout lesson</td>
<td>3 (8.1%)</td>
<td></td>
<td>34 (91.9%)</td>
</tr>
<tr>
<td>6. Lesson pace is adjusted to meet student needs</td>
<td>5 (13.5%)</td>
<td>4 (10.8%)</td>
<td>28 (75.7%)</td>
</tr>
<tr>
<td>7. Evidence that lessons allow for student choice</td>
<td>17 (45.9%)</td>
<td>7 (18.9%)</td>
<td>13 (35.1%)</td>
</tr>
<tr>
<td>8. Evidence that teacher scaffolds, tiers, and allows for student choice</td>
<td>8 (21.6%)</td>
<td>3 (8.1%)</td>
<td>25 (67.6%)</td>
</tr>
<tr>
<td>9. Tasks are assigned to have students extend/apply an understanding of concepts</td>
<td></td>
<td></td>
<td>37 (100%)</td>
</tr>
<tr>
<td>10. Evidence that a materials are used on a variety of reading levels</td>
<td>23 (62.2%)</td>
<td>4 (10.8%)</td>
<td>10 (27%)</td>
</tr>
<tr>
<td>11. Evidence that students are aware of what they are expected to do, know, and understand</td>
<td>1 (2.7%)</td>
<td></td>
<td>36 (97.3%)</td>
</tr>
<tr>
<td>12. Evidence that students are grouped by readiness, interests, and/or learning preferences</td>
<td>9 (24.3%)</td>
<td>20 (54.1%)</td>
<td>8 (21.6%)</td>
</tr>
<tr>
<td>13. Classroom is structured for group and/or individual work</td>
<td>2 (5.4%)</td>
<td></td>
<td>35 (94.6%)</td>
</tr>
<tr>
<td>14. Evidence that students usually work cooperatively</td>
<td>9 (24.3%)</td>
<td></td>
<td>28 (75.7%)</td>
</tr>
<tr>
<td>15. Evidence that students usually work independently</td>
<td>1 (2.7%)</td>
<td>10 (27%)</td>
<td>26 (70.3%)</td>
</tr>
</tbody>
</table>
Based on Table 5, it was evident that checklist item 9 was the only one the observer agreed that all participants demonstrated.

Tables 6 and 7 illustrate the mean and standard deviation for each item featured on the teacher perception survey and the classroom observation checklist.

Table 6

**Statistical Analysis of Teacher Perception Survey**

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Need for Professional Development pertaining to differentiation in district</td>
<td>2.54</td>
<td>.69</td>
</tr>
<tr>
<td>2. Adequately trained to differentiate instruction for all learners</td>
<td>2.44</td>
<td>.70</td>
</tr>
<tr>
<td>3. Believes that all students are capable of learning</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>4. Believes that D.I. will increase student achievement</td>
<td>2.84</td>
<td>.50</td>
</tr>
<tr>
<td>5. Differentiates on an as-needed basis for students</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>6. Aware of students’ learning styles and interests and can relate them to instruction</td>
<td>2.81</td>
<td>.40</td>
</tr>
<tr>
<td>7. Develop lessons that enable students to make real-world connections</td>
<td>2.97</td>
<td>.16</td>
</tr>
<tr>
<td>8. Assess throughout lessons to determine whether or not students understand content</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>9. Adjusts pace of lessons in an effort to meet student needs</td>
<td>2.97</td>
<td>.16</td>
</tr>
<tr>
<td>10. Vary methods by which instruction is delivered each day</td>
<td>2.86</td>
<td>.35</td>
</tr>
<tr>
<td>11. Design lessons that allow for student choice with regard to independent practice activities/assignments</td>
<td>2.40</td>
<td>.65</td>
</tr>
</tbody>
</table>
Table 6 (continued).

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Adjust lessons for diverse learner needs by scaffolding, tiering, and allowing for student choice</td>
<td>2.78</td>
<td>.42</td>
</tr>
<tr>
<td>13. Assign tasks that require students to apply and extend their understanding of concepts</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>14. Use a variety of materials to adjust to students’ reading abilities and interests</td>
<td>2.92</td>
<td>.37</td>
</tr>
<tr>
<td>15. Clearly articulate what students should know, understand, and be able to do</td>
<td>2.97</td>
<td>.16</td>
</tr>
<tr>
<td>16. Group students for learning activities based on readiness, interests, and/or learning preferences</td>
<td>2.89</td>
<td>.32</td>
</tr>
<tr>
<td>17. Composition of groups changes based on the activity</td>
<td>2.95</td>
<td>.23</td>
</tr>
<tr>
<td>18. Classroom structured to support a variety of activities including group or individual work</td>
<td>2.97</td>
<td>.16</td>
</tr>
<tr>
<td>19. Students usually complete assignments cooperatively</td>
<td>2.59</td>
<td>.64</td>
</tr>
<tr>
<td>20. Students usually complete assignments independently</td>
<td>2.68</td>
<td>.53</td>
</tr>
</tbody>
</table>

Note: Scale: 1 = Disagree; 2 = Neither Agree nor Disagree; 3 = Agree
Table 7
Statistical Analysis of Classroom Observation Checklist

<table>
<thead>
<tr>
<th>Observation Statement Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher displayed clear understanding of D.I.</td>
<td>2.32</td>
<td>.78</td>
</tr>
<tr>
<td>2. Evidence that teacher differentiates on as-needed basis</td>
<td>2.62</td>
<td>.76</td>
</tr>
<tr>
<td>3. Evidence that instruction is related to learning styles</td>
<td>2.51</td>
<td>.84</td>
</tr>
<tr>
<td>4. Evidence that lessons make real-world connection</td>
<td>2.43</td>
<td>.84</td>
</tr>
<tr>
<td>5. Teacher assesses for understanding throughout the lesson</td>
<td>2.84</td>
<td>.55</td>
</tr>
<tr>
<td>6. Lesson pace is adjusted to meet student needs</td>
<td>2.62</td>
<td>.72</td>
</tr>
<tr>
<td>7. Evidence that lessons allow for student choice</td>
<td>1.89</td>
<td>.91</td>
</tr>
<tr>
<td>8. Evidence that teacher scaffolds, tiers, and allows for student choice</td>
<td>2.70</td>
<td>1.63</td>
</tr>
<tr>
<td>9. Tasks are assigned to have students extend/apply an understanding of concepts</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>10. Evidence that a materials are used on a variety of reading levels</td>
<td>1.65</td>
<td>.89</td>
</tr>
<tr>
<td>11. Evidence that students are aware of what they are expected to do, know, and understand</td>
<td>2.95</td>
<td>.33</td>
</tr>
<tr>
<td>12. Evident that students are grouped by readiness, interests, and/or learning preferences</td>
<td>1.97</td>
<td>.69</td>
</tr>
<tr>
<td>13. Classroom is structured for group and/or individual work</td>
<td>2.89</td>
<td>.46</td>
</tr>
<tr>
<td>14. Evidence that students usually work cooperatively</td>
<td>2.76</td>
<td>.44</td>
</tr>
<tr>
<td>15. Evidence that students usually work independently</td>
<td>2.68</td>
<td>.53</td>
</tr>
</tbody>
</table>

Note: Scale: 1 = Disagree; 2 = Neither Agree nor Disagree; 3 = Agree
Based on the statistical analysis of the teacher perception survey, the researcher determined that perceptions were highest on questions 5, 8, 13, 15, and 18. Every participant indicated that he/she differentiated instruction on an as-needed basis for students. Additionally, each of the 37 participants agreed with the survey statements pertaining to assessing throughout lessons to ensure that students understood concepts and assigning tasks that required students to extend/apply their understanding of concepts. As a result, the mean was 3.00 and the standard deviation was .00 for those survey items. Only one participant disagreed with survey item 18 which pertained to establishing a classroom environment to support a variety of activities including group or individual work. The statistical analysis indicated a mean of 2.97 and a standard deviation of .16 for that item. Survey items 11 and 2 were reportedly the lowest among the 20 items. Item 11 pertained to designing lessons that allowed for student choice with regard to independent practice activities. This item resulted in a mean of 2.40 and a standard deviation of .65. Item 2 pertained to participants feeling adequately trained to differentiate instruction for all learners. This item resulted in a mean of 2.44 and standard deviation of .70.

Based on the statistical analysis of the classroom observation checklist, the researcher determined that the following indicators of differentiated instruction were reported most frequently: item 9, 11, and 13. Each of the 37 participating teachers was observed assigning tasks that required students to apply and extend their understanding of concepts. There was a mean of 3.00 and standard deviation of .00 for this item. Observation checklist item 11 pertained to the researcher observing evidence that the students were aware of what the teacher wanted them to know, understand, and be able to
do. Only one teacher did not provide the evidence needed to support this checklist item. Therefore, there was a mean of 2.95 and standard deviation of .33. Observation checklist item 13 pertained to the classroom environment being structured to support a variety of activities including group or individual work. There was a mean of 2.89 and standard deviation of .46 for this item.

Based on the statistical analysis of the classroom observation checklist, the researcher determined that the following indicators of differentiated instruction were reported less frequently: item 10, 7, and 12. Checklist item 10 pertained to the teacher providing evidence that he/she used a variety of materials to adjust to students’ reading abilities and interests. Of the teachers observed, 23 did not provide evidence of differentiating with regard to reading materials. Thus, that particular checklist item had a mean of 1.65 and a standard deviation of .89. Checklist item 7 pertained to the teacher providing evidence that lessons were designed to allow for student choice with regard to independent practice activities/assignments. Of the teachers observed, seventeen teachers did not provide evidence of this. As a result, this checklist item resulted in a mean of 1.89 and a standard deviation of .91. Finally, checklist item 12 resulted in a mean of 1.97 with a standard deviation of .69. This checklist item pertained to students being grouped based on readiness, interests, and/or learning preferences.

Table 8 shows the overall average and standard deviation of both the teacher perception survey and the classroom observation checklist.
Table 8

*Mean and Standard Deviation of Both Instruments*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Perception Survey</td>
<td>2.83</td>
<td>.12</td>
<td>37</td>
</tr>
<tr>
<td>Classroom Observation Checklist</td>
<td>2.52</td>
<td>.28</td>
<td>37</td>
</tr>
</tbody>
</table>

Note: Scale: 1 = Disagree; 2 = Neither Agree nor Disagree; 3 = Agree

Part three of the study consisted of the analysis of student achievement data when categorizing each participant as a teacher who differentiated instruction or a teacher who did not differentiate instruction. Differentiation can be demonstrated in four ways: process, content, product, and environment. Process differentiation pertains to the manner in which instruction is delivered each day. Teachers who differentiate based on process often vary their instruction delivery method to keep students interested in daily lessons. Content differentiation pertains to scaffolding instruction in an effort to ensure that students grasp foundational skills prior to attending to the task at hand. Product differentiation is demonstrated when teachers allow for student choice with regard to independent practice activities. Students show mastery of a skill/concept in a variety of ways. Finally, environmental differentiation is demonstrated by the physical structure of a teacher’s classroom. After analyzing student achievement data from the spring of 2011, each participant was placed into one of two categories: differentiated instruction (D.I.) or not differentiated instruction (no D.I.). There were only three participants who were considered to be teachers who differentiated instruction based solely on student
achievement data. There were 34 who were considered to not differentiate instruction based on student achievement data.

There were six research questions addressed in this study. The first question examined the behaviors of teachers who differentiated instruction as identified through observation, and the second question examined the behaviors of teachers who did not differentiate instruction as identified through observation. The participants who were identified as teachers who differentiated instruction were only in the subject of Language Arts. These participants had at least 85% or more of his/her students scoring with the Proficient and Advanced categories on the spring 2011 state assessment. Participants who were categorized as teachers who did not differentiate instruction had fewer than 85% of students scoring within the Proficient and Advanced categories and more than 10% of students scoring in the Basic and Minimal categories on the spring 2011 state assessment (Table 9).

Table 9

<table>
<thead>
<tr>
<th>Observed Behaviors of Teachers who Differentiate Instruction (D.I.) and Those who do not (no D.I.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classroom Observation Item</strong></td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>1. Displays a clear understanding of D.I.</td>
</tr>
<tr>
<td>2. Differentiates on as-needed basis</td>
</tr>
<tr>
<td>3. Relates instruction to a variety of learning styles</td>
</tr>
<tr>
<td>4. Lessons enable students to make real-world connection</td>
</tr>
<tr>
<td>5. Assesses throughout lesson for understanding</td>
</tr>
</tbody>
</table>
Table 9 (continued).

<table>
<thead>
<tr>
<th>Classroom Observation Item</th>
<th>D.I. (n=3)</th>
<th>no D.I. (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>6. Adjusts pace of lessons to meet student needs</td>
<td>2.67</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>2.62</td>
<td>.74</td>
</tr>
<tr>
<td>7. Designs lessons that allow for student choice</td>
<td>2.33</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>1.85</td>
<td>.93</td>
</tr>
<tr>
<td>8. Adjusts lessons for learner needs (scaffolding)</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>2.68</td>
<td>1.70</td>
</tr>
<tr>
<td>9. Assigns tasks that require students to apply and extend understanding of concepts</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>10. Uses a variety of materials to adjust reading abilities</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>1.53</td>
<td>.83</td>
</tr>
<tr>
<td>11. Students are aware of what the teacher wants them to do, understand, and know</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>2.94</td>
<td>.34</td>
</tr>
<tr>
<td>12. Students are grouped based on readiness, interests, and/or learning preferences</td>
<td>2.33</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>1.94</td>
<td>.69</td>
</tr>
<tr>
<td>13. Classroom environment is structured to support group and/or individual activities</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>2.88</td>
<td>.48</td>
</tr>
<tr>
<td>14. Evident that students complete assignments cooperatively</td>
<td>2.67</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>2.76</td>
<td>.43</td>
</tr>
<tr>
<td>15. Evident that student complete assignments independently</td>
<td>2.67</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>2.68</td>
<td>.54</td>
</tr>
</tbody>
</table>

The observer agreed that the following behaviors were exhibited by the teachers who differentiated instruction: provided evidence that differentiation occurred on an as-needed basis, related instruction to various learning styles and interests, assessed throughout the lesson to determine whether or not students understood the concept,
provided evidence that lessons were adjusted to meet the needs of diverse learners, assigned tasks that required students to apply and extend their understanding of concepts, provided evidence that a variety of materials were used to adjust to students’ reading abilities and interests, provided evidence that the students were aware of what the teacher wanted them to know, understand, and be able to do, and the classroom was structured to support a variety of activities including group or individual work. Throughout the observations, the researcher consistently witnessed the D.I. teachers working one-on-one or with a small group of students who required additional assistance. The researcher also observed the D.I. teachers scaffolding lessons by reviewing/discussing pre-requisite skills that were needed in order to grasp the concept of the day/week.

These teachers did an excellent job of engaging the entire class in the lesson by asking questions that varied in the degree of difficulty. This afforded struggling students, as well, advanced learners the opportunity to contribute to the class discussion before completing the independent practice activities associated with the lesson. Lessons were presented in a variety of ways to appeal to various learning styles. Many of the teachers used a textbook, manipulatives, and an interactive Promethean board to present their lessons. The teachers also did a wonderful job of connecting the lessons to concepts that were “real” and familiar to the students. Materials were readily available on a variety of reading levels to ensure that students understood the concept being taught. The researcher observed that different groups of students were charged with the task of completing activities that varied in the degree of difficulty. Struggling learners were afforded an opportunity to listen to the audio version of the weekly class story, for example, before completing a comprehension activity associated with the text.
Simultaneously, advanced learners extended their understanding of concepts associated with the weekly story by creating alternate endings and/or scenarios and sharing them with one another.

The observer agreed that the following behaviors were exhibited by the teachers who did not differentiate instruction: assessed throughout the lesson to determine whether or not students understood the concept, assigned tasks that required students to extend and apply their understanding of concepts, provided evidence that students were aware of what the teacher wanted them to know, understand, and be able to do, and the classroom was structured to support a variety of activities including group or individual work. The majority of the teachers who did not differentiate instruction taught to the whole group and presented the daily lesson in a manner in which all students were expected to have the same degree of understanding. Questions were directed to only a few students who seemed to be extremely aware of the concept while other students played with their pencils, flipped the pages in their textbook, and appeared to be disconnected from the lesson. Many of the teachers used interactive Promethean boards when discussing the weekly concept, however, only a few students were afforded the opportunity to display their understanding by going up to the board. All students were expected to complete the same assignment in these classrooms with no consideration being made for those who may not have grasped pre-requisite skills.

The third research question examined the perceived behaviors of teachers who differentiated instruction, and the fourth research question examined the perceived behaviors of teachers who did not differentiate instruction (Table 10).
Table 10

*Perceived Behaviors of Teachers who Differentiate Instruction (D.I.) and Those who do not (no D.I.)*

<table>
<thead>
<tr>
<th>Classroom Observation Item</th>
<th>D.I. (n=3)</th>
<th>no D.I. (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feels there is a need for D.I. Prof. Development</td>
<td>2.67 .58</td>
<td>2.53 .71</td>
</tr>
<tr>
<td>2. Has been adequately trained to D.I. for students</td>
<td>2.00 .00</td>
<td>2.48 .71</td>
</tr>
<tr>
<td>3. Believes all students are capable of learning</td>
<td>3.00 .00</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>4. Believes D.I. will increase student achievement on standardized assessments</td>
<td>2.67 .58</td>
<td>2.85 .50</td>
</tr>
<tr>
<td>5. Differentiates on as-needed basis</td>
<td>3.00 .00</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>6. Aware of students’ learning styles and interests and relates them to instruction</td>
<td>2.67 .58</td>
<td>2.82 .39</td>
</tr>
<tr>
<td>7. Develops lessons that enable students to make a real-world connection</td>
<td>2.67 .58</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>8. Assesses throughout lesson to ensure that students understand the content</td>
<td>3.00 .00</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>9. Adjusts the pace of lessons to meet student needs</td>
<td>2.67 .58</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>10. Vary the method by which instruction is delivered each day</td>
<td>2.67 .58</td>
<td>2.88 .33</td>
</tr>
<tr>
<td>11. Design lessons that allow for student choice with regard to independent practice activities</td>
<td>2.33 .58</td>
<td>2.41 .67</td>
</tr>
<tr>
<td>12. Adjust pace for diverse learners by scaffolding, tiering, and allowing for student choice</td>
<td>2.67 .58</td>
<td>2.79 .41</td>
</tr>
</tbody>
</table>
Table 10 (continued).

<table>
<thead>
<tr>
<th>Classroom Observation Item</th>
<th>D.I. (n=3)</th>
<th>no D.I. (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>13. Assign tasks that require students to apply and extend their understanding of concepts</td>
<td>3.00 .00</td>
<td>3.00 .00</td>
</tr>
<tr>
<td>14. Use a variety of materials to adjust to students’ reading abilities</td>
<td>2.67 .58</td>
<td>2.94 .35</td>
</tr>
<tr>
<td>15. Clearly articulate what students are to know, understand, and be able to do</td>
<td>3.00 .00</td>
<td>2.97 .17</td>
</tr>
<tr>
<td>16. Group students for learning activities based on readiness, interests, and/or learning preferences</td>
<td>3.00 .00</td>
<td>2.88 .33</td>
</tr>
<tr>
<td>17. Changes the composition of groups based on the activity</td>
<td>3.00 .00</td>
<td>2.94 .24</td>
</tr>
<tr>
<td>18. Classroom environment is structured to support a variety of activities including group or individual work</td>
<td>3.00 .00</td>
<td>2.97 .17</td>
</tr>
<tr>
<td>19. Students usually complete assignments cooperatively</td>
<td>2.67 .58</td>
<td>2.59 .66</td>
</tr>
<tr>
<td>20. Students usually complete assignments independently</td>
<td>2.67 .58</td>
<td>2.68 .54</td>
</tr>
</tbody>
</table>

Overall, the participants who were said to differentiate instruction, perceived themselves as displaying the following behaviors: believed that all students were capable of learning, differentiated instruction on an as-needed basis, assessed throughout lessons to determine whether or not students understood the content, assigned tasks that required
students to apply and extend their understanding of concepts, clearly articulated what he/she wanted students to know, understand, and be able to do, grouped students for learning activities based on readiness, interests, and/or learning preferences, changed the composition of groups based on the activity, and had a classroom environment that was structured to support a variety of activities including group or individual work. The perceived behaviors who did not differentiate instruction were as follows: believed that all students were capable of learning, differentiated on an as-needed basis, developed lessons that enabled students to make a real-world connection, assessed throughout lessons to determine whether or not students understood the content, adjusted the pace of lessons in an effort to meet the needs of students (scaffolded lessons for struggling learners), assigned tasks that required students to apply and extend their understanding of concepts, used a variety of materials to adjust to students’ reading abilities and interests, clearly articulated what he/she wanted students to know, understand, and be able to do, changed the composition of groups based on the activity, and had a classroom environment that was structured to support a variety of activities including group or individual work.

The fifth research question examined the differences if any between the perceived and observed behaviors of teachers with regard to differentiated instruction. Tables 9 and 10 can be used to identify these differences. The teachers, who differentiated instruction, as identified by student achievement scores, did not perceive that they related instruction to various learning styles and interests. They also did not perceive that they adjusted lessons for diverse learner needs by scaffolding, tiering, and allowing for student choice. Lastly, the D.I. participants did not believe that they used a variety of materials to adjust
to students’ reading abilities and interests. The teachers who did not differentiate instruction, based on student achievement data, indicated that they differentiated on an as-needed basis, but the researcher did not observe this while in the classrooms. Additionally, the researcher did not observe those teachers presenting lessons that allowed students to make real-world connections, but the teachers indicated that they perceived themselves as doing so. In their opinions, the teachers who did not differentiate also felt that they adjusted the pace of lessons in an effort to meet the needs of students. Again, the researcher did not observe this while in the classrooms. Finally, it was perceived that the non D.I. teachers used a variety of materials to adjust to students’ reading abilities and interests. While in the classroom, the researcher observed all students being provided with the same reading material. There were no concessions made for students who read neither above nor below that of the text.

The sixth research question examined the relationship if any that existed between the 3rd, 4th, and 5th grade Language Arts assessment scores of students who were instructed by teachers who differentiated and those whose teachers did not (Table 11).

Table 11

*Relationship Between Language Arts Assessment Scores and Differentiation*

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>D.I. Teachers</th>
<th></th>
<th>no D.I. Teacher</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Std. Deviation</td>
</tr>
<tr>
<td>% Advanced</td>
<td>26.67%</td>
<td>23.18</td>
<td>12.24%</td>
<td>11.21</td>
</tr>
<tr>
<td>% Proficient</td>
<td>51.00%</td>
<td>7.21</td>
<td>39.65%</td>
<td>16.43</td>
</tr>
<tr>
<td>% Basic</td>
<td>18.33%</td>
<td>27.54</td>
<td>33.06%</td>
<td>13.57</td>
</tr>
<tr>
<td>% Minimal</td>
<td>4.00%</td>
<td>3.61</td>
<td>13.65%</td>
<td>11.32</td>
</tr>
</tbody>
</table>
Based on Table 11, teachers who differentiated instruction had higher percentages of students scoring within the Advanced and Proficient categories on the state assessment. Teachers who did not differentiate instruction had higher percentages of students scoring within the Basic and Minimal categories on their state assessments.

Inferential Statistics

The following hypotheses were considered during this study:

H₁: There are significant differences between the dependent variable of 3rd, 4th, and 5th grade Language Arts achievement and the independent variable of whether or not teachers differentiate instruction.

After conducting a Wilks’ Lambda Multivariate Test (Everitt, B., & Dunn, G. (1991), the following was determined: F(4, 32)=1.217, p=.32. The difference was not significant due to a small sample size of participants who were categorized as teachers who differentiated instruction. Of the 37 participants, only three were categorized as teachers who differentiated instruction. In spite of the fact, Table 11 clearly illustrates that the teachers who differentiated instruction had more students scoring within the Advanced and Proficient categories.

H₂: There are significant differences between the observed and perceived behaviors of teachers with regard to differentiated instruction.

With regard to the classroom observation checklist, there were significant differences among the two categories of teachers with items 1, 2, 3, and 10. The first item pertained to the teacher displaying a clear understanding of differentiated instruction. The t-test for Equality of Means resulted in a Sig. (2-tailed) value of .02. The second item pertained to the teacher differentiating on an as-needed basis. The t-test
for Equality of Means resulted in a Sig. (2-tailed) value of .00. The third checklist item was associated with the teacher relating instruction to various learning styles and interests. The t-test for Equality of Means resulted in a Sig. (2-tailed) value of .00. Finally, the tenth checklist item pertained to the teacher using a variety of materials to adjust to students’ reading abilities. The teachers who differentiated received a higher rating than those who did not. The t-test for Equality of Means resulted in a Sig. (2-tailed) value of .00. With regard to the teacher perception survey, there were significant differences among the two categories of teachers with items 2 and 16. Perception item 2 pertained to the participant feeling adequately trained to differentiate instruction for all learners. The t-test for Equality of Means resulted in a Sig. (2-tailed) value of .00. The sixteenth item on the perception survey was associated with the teacher grouping students for learning activities based on readiness, interests, and/or learning preferences. The t-test for Equality of Means resulted in a Sig. (2-tailed) value of .04.

Summary

This study addressed six research questions that were examined using a perception survey and a classroom observation checklist. The 37 participants were categorized into one of two categories (D.I. or no D.I.) based on spring 2011 student achievement data. The three teachers who were said to differentiate instruction made every attempt to meet the needs of the learners in their classrooms by asking questions that varied in the degree of difficulty, reviewing pre-requisite skills to ensure that learners had a firm grasp before addressing the skill of the day/week, addressing different learning styles, and providing students with materials on a variety of reading levels. The teachers who did not differentiate instruction delivered instruction in a manner that only afforded
students who firmly understood previously taught skills to be successful with completing the assigned task. All students were told to complete the same assignment with no consideration being made for those who could not read on grade level. The researcher found it interesting that the perceived behaviors of the participants often differed from the actual practices employed within the classroom. Many of the teachers who did not differentiate perceived themselves as going to great lengths to meet the needs of all learners when they actually taught lessons at one level. In addition, many of their questions were directed to a few students in the classroom who appeared to quickly grasp the material. Many of the teachers who differentiated instruction did not perceive themselves as teachers who varied instructional strategies based on the needs of students. Despite the small number of teachers who qualified to be categorized as D.I. teachers, there were distinct differences with regard to the number of students they had scoring within the Advanced and Proficient categories in comparison with the students who were taught by teachers who did not differentiate.
CHAPTER V

SUMMARY AND CONCLUSION

Introduction

The purpose of this study was to identify teachers who successfully differentiated instruction and those who were unsuccessful in differentiating instruction based on student achievement. The instructional strategies employed by teachers who differentiated instruction as well as those employed by teachers who did not differentiate instruction were reported. The rationale for reporting the observed instructional strategies was to afford all students the opportunity to have their academic needs met in all classes. Additionally, this study examined whether or not differences existed between the observed and perceived behaviors of teachers regarding differentiated instruction.

The goal of this study was to identify teaching strategies and practices that could be utilized to maximize the academic potential of all learners. The purpose of this chapter was to present an analysis of the data collected throughout the course of this study.

Summary of Procedures

The data for this study was obtained in three ways: participants completed a twenty question perception survey, Spring 2011 assessment data was provided by building level administrators, and the researcher conducted observations using a fifteen item checklist. The perception survey gathered information regarding each participant’s understanding of Differentiated Instruction and the level at which he/she implemented it in the classroom. After permission was granted by the Institutional Review Board and from the participating school districts (Appendix D), the researcher met with a panel of certified teachers to ensure that both the perception survey and the classroom observation
checklist were written clearly and accurately addressed the topic. Once the panel shared results with the researcher, meetings were scheduled with building level administrators to discuss the nature of the project. After meeting with the principals, the researcher met with teachers in grades three through five to disseminate the perception survey and consent forms. Participants had two weeks to complete the survey and return to their building principal. On the day of each school’s schedule observations, the researcher collected the completed surveys, consent forms, and student achievement data. The data was entered into an Excel spreadsheet before being imported into SPSS for analysis. Finally, the data was analyzed using descriptive and inferential statistics.

Major Findings

A total of 37 participants completed the perception survey associated with the study and provided consent to allow the researcher to conduct the observation portion of the study. The instrument used during the observation portion of the study was derived from the perception survey. The perception survey asked participants questions associated with the four elements of differentiation (process, content, product, and environment), as well as, demographic information such as the content area in which he/she taught and the number of years of teaching experience. In addition, participants were asked to identify the highest degree attained. This demographic data afforded the researcher the opportunity to gain background information that could potentially explain the manner in which participants answered certain questions. Of the 37 participants, 75.7% taught either third or fourth grade. Only 24.3% of the participants indicated that they taught fifth grade Reading/Language Arts.
Every participant held at least a Bachelor’s degree. In fact, 56.8% of the participants indicated that a B.S. or a B.A. were the highest degrees attained. None of the participants indicated that they held a degree higher than a Masters. It is important to note, however, that the field in which each participant attained his/her degree was not specified. As a result, it was possible for participants to hold degrees in field unrelated to the area in which they taught.

There were six research questions addressed in this study. The first question examined the behaviors of teachers who differentiated instruction as identified through observation, and the second question examined the behaviors of teachers who did not differentiate instruction as identified through observation. The participants who were identified as teachers who differentiated instruction were only in the subject of Language Arts. These participants had at least 85% or more of his/her students scoring with the Proficient and Advanced categories on the Spring 2011 state assessment. Participants who were categorized as teachers who did not differentiate instruction had fewer than 85% of students scoring within the Proficient and Advanced categories and more than 10% of students scoring in the Basic and Minimal categories on the Spring 2011 state assessment. The observer agreed that the following behaviors were exhibited by the teachers who differentiated instruction: provided evidence that differentiation occurred on an as-needed basis, related instruction to various learning styles and interests, assessed throughout the lesson to determine whether or not students understood the concept, provided evidence that lessons were adjusted to meet the needs of diverse learners, assigned tasks that required students to apply and extend their understanding of concepts, provided evidence that a variety of materials were used to adjust to students’ reading
abilities and interests, provided evidence that the students were aware of what the teacher wanted them to know, understand, and be able to do, and the classroom was structured to support a variety of activities including group or individual work. Throughout the observations, the researcher consistently witnessed the D.I. teachers working one-on-one or with a small group of students who required additional assistance. The researcher also observed the D.I. teachers scaffolding lessons by reviewing/discussing pre-requisite skills that were needed in order to grasp the concept of the day/week.

These teachers did an excellent job of engaging the entire class in the lesson by asking questions that varied in the degree of difficulty. This afforded struggling students, as well, advanced learners the opportunity to contribute to the class discussion before completing the independent practice activities associated with the lesson. Lessons were presented in a variety of ways to appeal to various learning styles. Many of the teachers used a textbook, manipulatives, and an interactive Promethean board to present their lessons. The teachers also did a wonderful job of connecting the lessons to concepts that were real and familiar to the students. Materials were readily available on a variety of reading levels to ensure that students understood the concept being taught. The researcher observed that different groups of students were charged with the task of completing activities that varied in the degree of difficulty. Struggling learners were afforded an opportunity to listen to the audio version of the weekly class story, for example, before completing a comprehension activity associated with the text. Simultaneously, advanced learners extended their understanding of concepts associated with the weekly story by creating alternate endings and/or scenarios and sharing them with one another.
The observer agreed that the following behaviors were exhibited by the teachers who did not differentiate instruction: assessed throughout the lesson to determine whether or not students understood the concept, assigned tasks that required students to extend and apply their understanding of concepts, provided evidence that students were aware of what the teacher wanted them to know, understand, and be able to do, and the classroom was structured to support a variety of activities including group or individual work. The majority of the teachers who did not differentiate instruction taught to the whole group and presented the daily lesson in a manner in which all students were expected to have the same degree of understanding. Questions were directed to only a few students who seemed to be extremely aware of the concept while other students played with their pencils, flipped the pages in their textbook, and appeared to be disconnected from the lesson. Many of the teachers used interactive Promethean boards when discussing the weekly concept, however, only a few students were afforded the opportunity to display their understanding by going up to the board. All students were expected to complete the same assignment in these classrooms with no consideration being made for those who may not have grasped pre-requisite skills.

The behaviors exhibited by the teachers who differentiated were consistent with findings presented by Carol Ann Tomlinson during her research. According to Tomlinson (1999), differentiation is accomplished in an assortment of ways. Typically, one would consider any approach an educator employs to assist an individual or small group of students in understanding an academic concept as the basic method of differentiating instruction. One element of successfully differentiating within the classroom pertains to using assessment data to drive instruction. For the most part, the
strategies used often involve small, flexible grouping methods (changing when deemed necessary) that present content in a scaffolded manner that progressively increases in rigor (Munday, 2005). Student readiness, interest, and/or learning styles are often considered when determining the composition of the each small group. Tomlinson (1999) maintains that there are four basic elements of differentiation: content, process, product, and learning environment.

When educators differentiate based on content, they are scaffolding lessons to ensure that students truly grasp the fundamental skills necessary to understand the task at hand while simultaneously offering enrichment opportunities for the students who need them. An example of this would be creating an environment within the classroom in which all students are able to read at varying levels. Another example would be audio recording text material to accommodate auditory learners. Developing vocabulary and spelling lists based on individual student’s performance level (Tomlinson, 1999).

Another method of differentiating is process differentiation. This particular method involves varying the manner in which instruction is delivered and encouraging students to explore topics of interest. Educators can accomplish this by allowing students to use manipulatives and other hands-on methods when applying knowledge. Also, educators can vary the manner in which they review and/or introduce concepts to students. For instance, a teacher may orally discuss vocabulary terms and definitions with the class in a whole group manner on Monday. On Tuesday, he/she may choose to allow students to work in pairs using flashcards to review terms (Tomlinson, 1999).

A third method in which educators can differentiate instruction pertains to product differentiation. This method references varying the independent practice opportunities in
which students may engage to allow for choice. Another example pertains to developing rubrics that match the varying ability levels of the students within the classroom. This may also include allowing students to engage in hands-on activities to demonstrate an understanding of the information presented. Ultimately, the goal of the educator is to create an environment that promotes student choice (Tomlinson, 1999).

Lastly, developing a learning environment that promotes acceptance of creative and cultural differences among learners is another means of differentiating instruction. This may include varying the manner in which desks/tables are arranged within the classroom. An example of this may be grouping desks together so that students are allowed to work in pairs or placing chairs at a table to allow students to complete an assignment in a small group. Groups may be established based on learning styles, academic readiness, or a combination of both (Tomlinson, 1999).

The third and fourth questions examined the perceived behaviors of teachers who differentiated instruction, as well as, the behaviors of those who did not differentiate. Many of the teachers perceived themselves inaccurately. The teachers who did not differentiate instruction indicated a clear understanding of the topic and agreed with a number of the perception survey items pertaining to addressing the individual needs of learners. During the observation portion of the study, most of the teachers categorized as not differentiating taught to a small group of students within the class. Every student was expected to complete the same assignment with no consideration being made for students who did not possess the pre-requisite skills needed to master the skill of the day/week. On the contrary, the teachers who did differentiate instruction indicated an uncertainty regard several of the perception survey items associated with having a clear
understanding of the topic. The researcher concluded that many of them were quite modest with regard to the lengths they went to in an effort to meet the needs of their students.

The fifth research question examined differences between the perceived and observed behaviors with regard to differentiated instruction. As stated above, most teachers who did not differentiate perceived themselves inaccurately. They were unaware of the disregard for students performing on different levels within their classrooms. During the classroom observations, a number of those struggling students appeared to me disengaged from the lesson by playing with a pencil, flipping the pages in a book, or simply playing in their desks. The teachers who differentiated instruction engaged all learners in their lessons by asking questions on a variety of levels to ensure that everyone was afforded the opportunity to contribute to the discussion. Research has conclusively indicated that students’ interests can tremendously impact academic achievement and the overall learning experience (Koller, et.al., 2001). When educators find creative ways in which to develop lessons that are directly linked to students’ interests, the students are usually more intrinsically motivated and engaged in the learning experience. Typically, students who are at-risk or struggle with certain skills are often not confident in their own abilities which often results in a negative attitudes towards those academic concepts. Koller, et. al., (2001) maintain that there is a strong correlation between intrinsic motivation and perceived competence. This is known as the Cognitive Evaluation Theory (p.449). In essence, the more competent a person perceives himself to be with regard to a particular skill or concept, the more motivated he will be to complete activities associated with the concept.
The sixth research question determined whether or not a relationship existed between the 3rd, 4th, and 5th grade Language Arts achievement scores of students who were taught by teachers who differentiated instruction and those whose teachers did not. The teachers who differentiated instruction had higher percentages of students scoring within the Advanced and Proficient categories on the state assessment. Teachers who did not differentiate instruction had higher percentages of students scoring within the Basic and Minimal categories on their state assessments.

Additionally, there were two hypotheses considered during this study. The first was stated as follows: There are significant differences between the dependent variable of 3rd, 4th, and 5th grade Language Arts achievement and the independent variable of whether or not teachers differentiate instruction. After conducting a Wilks’ Lambda Multivariate Test (Everitt & Dunn, 1991), the following was determined: F(4, 32)=.217, p=.32. The difference was not significant due to a small sample size of participants who were categorized as teachers who differentiated instruction. Of the 37 participants, only three were categorized as teachers who differentiated instruction. In spite of the fact, the data clearly indicated that the teachers who differentiated instruction had more students scoring within the Advanced and Proficient categories.

The second hypothesis was stated as follows: There are significant differences between the observed and perceived behaviors of teachers with regard to differentiated instruction. With regard to the classroom observation checklist, there were significant differences among the two categories of teachers with a number of items. The first item pertained to the teacher displaying a clear understanding of differentiated instruction. The second item pertained to the teacher differentiating on an as-needed basis. The third
checklist item was associated with the teacher relating instruction to various learning styles and interests. Finally, the last checklist item pertained to the teacher using a variety of materials to adjust to students’ reading abilities. The teachers who differentiated received a higher rating than those who did not. With regard to the teacher perception survey, there were significant differences among the two categories of teachers with two items. The first item pertained to the participant feeling adequately trained to differentiate instruction for all learners. The other item on the perception survey was associated with the teacher grouping students for learning activities based on readiness, interests, and/or learning preferences.

Discussion

Research has conclusively supported the notion that Differentiated Instruction (D.I.) is an effective approach to maximizing the academic potential of all learners within today’s classrooms. D.I. promotes equity by focusing on practical instructional approaches in mixed-ability classrooms. The academic needs of the whole child are met in an effort to close the achievement gap that currently exists among learners. Within a differentiated classroom setting, educators instruct children based on readiness and scaffold instruction and independent practice opportunities. Ultimately, D.I. promotes an intense curriculum for all learners with varying levels of support from teachers, task complexity, pacing, and instructional delivery practices employed based on student readiness, learning styles, and interest. Tomlinson (2005) maintains that an exemplary teacher must willingly modify instruction to accommodate the needs of all learners.

Because today’s classrooms are comprised of children who perform on many different levels and at varying paces, differentiation seems to be the most logical method
to employ in an effort to close the ever-growing achievement gap. If educators do not take the time to remediate children who cannot read and/or function academically on grade-level, those struggling learners will continue to fall further behind, lose an interest in school, more likely choose to drop-out of school, and increasingly acquire a large number of absences from school. Furthermore, if teachers do not take the time to offer enrichment opportunities for advanced learners, there is a great possibility that those children may lose an interest in school, experience a decline in academic performance, exhibit a lack of motivation, and increasingly acquire a large number of absences, as well. This study determined the behaviors exhibited by teachers whose students more frequently populate the Advanced and Proficient categories on state assessments.

Recommendations for Policy and Practice

Based on the literature pertaining to the four elements of differentiation and the behaviors displayed by the participants in this study who were said to differentiate instruction, the researcher believes that building-level administrators can use the reported information when developing observation instruments of their own to measure differentiation. Administrators can specifically focus on student engagement and whether or not the classroom teacher is attending to the needs of all learners in the classroom setting while being observed throughout the course of the school year. In addition, administrators may use the reported information in this study when organizing professional development for teachers. The behaviors observed by both groups of teachers should be used of examples of what will be expected and the behaviors that will not be allowed with regard to meeting the needs of the learners within classrooms. Despite the small sample size of teachers who differentiated instruction in the study, there
were clear distinctions with regard to the level at which their students performed on the state assessment. The behaviors observed of those teachers could be used to assist a novice teacher or a teacher who has experienced a decline in student achievement, as well.

Limitations of the Study

There were several limitations to consider regarding this study:

1. There were a limited number of participants who were considered to be teachers who differentiated instruction. As a result, the first hypothesis was not significant.

2. The study was limited to three school districts with most of the classroom observations being conducted in only nine schools.

Recommendations for Future Research

This study was conducted to identify the behaviors of teachers who differentiated instruction, as well as, the behaviors of those who did not and the impact those behaviors had on student achievement. The following are recommendations for future research:

1. For future research, the criteria with regard to categorizing participants as teachers who differentiate instruction and those who do not should be lowered to allow for more participants to occupy the differentiated instruction category.

2. Future researchers should consider expanding the area within which participation for the study will be enlisted. This would be one manner in which the study could be strengthened and more educators could possibly fall within the category of differentiated instruction.
3. Student achievement could be considered over the span of two years as opposed to limiting to the scores to the previous school year. This would allow the researcher to determine whether or not students achieved academic growth or suffered a decline with regard to performance on state assessments.

4. Student demographic information could be taken into account when determining whether or not trends exist among certain groups of students regarding gender, race, ethnicity, etc…

5. After fully implementing the new Common Core State Standards in 2014, researchers could consider the impact the frequency within which students were assessed and whether or not the data was used to drive instruction through differentiation.

6. Future researchers could consider program integrity and the level at which teachers had received training associated with differentiation.

Summary

This research study was extremely enlightening. Based on the review of literature and the results of the study, instructional practices/strategies employed within the classroom greatly impact the educational experiences of learners. It is imperative that educators take the time to get to know the students in their classrooms in order to determine the needs of each and discover the most effective manner in which those needs can be addressed.

Despite the emotional baggage that many students carry with them each day and each school year, an exemplary teacher can engage those students in the learning process. Classrooms are comprised of students who perform on a myriad of levels, and it is the responsibility of the teacher to engage them all in the learning process and find ways that
each can experience some level of success. The researcher has always been an avid reader and a life-long learner. As a student, she found herself bored in class and felt as if her teachers did not know how to effectively challenge her. Her classroom teachers gave all students the same assignment and assumed that everyone learned in the same manner and at the same rate. The observation portion of this project afforded the researcher the opportunity to determine whether or not teachers perceived themselves accurately with regard to meeting the needs of all learners within their classrooms. To the researcher’s surprise, the student population was quite similar at each of the participating schools in all three districts. The students were very eager to learn.

The purpose of this study was not to discover the secret to high achievement scores. It was, however, to discover those best teaching practices employed by educators who empowered their students to grasp, apply, and extend the information presented to them each day. It is the researcher’s hope that future researcher will delve deeper and produce more information regarding practical approaches to meeting the academic needs of students.
APPENDIX A

TEACHER PERCEPTION SURVEY

Name (optional): _________________________  Current subject area taught: ______________

Number of years of teaching experience: ___1 to 2 years  ___ 3-5 years  ___ 6 years or more

Highest degree attained: ___ BS or BA  ___Master’s  ___Specialist’s  ___ EdD or PhD

<table>
<thead>
<tr>
<th>Indicators of Differentiated Instruction</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that there is a need for professional development pertaining to differentiated instruction in my district.</td>
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<td>2. I have been adequately trained to differentiate instruction for all learners.</td>
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<td>3. I believe that all of my students are capable of learning.</td>
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<td>4. I believe that differentiated instruction will increase student achievement on standardized assessments.</td>
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<td>5. I differentiate instruction on an as-needed basis for the children in my classroom.</td>
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<td>6. I am aware of each student’s learning style and interests and can relate them to instruction.</td>
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<td>7. I develop lessons that enable students to make a real-world connection.</td>
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<td>8. I assess during my lessons to determine whether or not students understand the content (i.e. questioning during classroom discussions, Thinking Map activities, etc.).</td>
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<tr>
<td>9. I adjust the pace of my lessons in an effort to meet the needs of students (i.e. scaffold lessons for struggling students).</td>
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<td>10. I vary the methods by which I deliver instruction each day.</td>
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<td>11. I design lessons that allow for student choice with regard to independent practice activities/assignments.</td>
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<tr>
<td>12. I adjust my lessons for diverse learner needs by scaffolding, tiering, and allowing for student choice.</td>
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<tr>
<td>13. I assign tasks that require my students to apply and extend their understanding of concepts.</td>
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<tr>
<td>14. I use a variety of materials to adjust to students’ reading abilities and interests.</td>
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<tr>
<td>15. I clearly articulate what I want students to know, understand, and be able to do.</td>
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<tr>
<td>16. I group students for learning activities based on readiness, interests, and/or learning preferences.</td>
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<tr>
<td>17. The composition of groups changes based on the activity.</td>
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<tr>
<td>18. My classroom environment is structured to support a variety of activities including group or individual work.</td>
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<tr>
<td>19. My students usually complete assignments cooperatively.</td>
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<tr>
<td>20. My students usually complete assignments independently.</td>
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</tbody>
</table>
APPENDIX B

CLASSROOM OBSERVATION CHECKLIST

Participant: _________________________ Subject Area: ____________________
Date: _______________________ Start Time: _________ End Time: ____________

<table>
<thead>
<tr>
<th>Indicators of Differentiated Instruction</th>
<th>Agree</th>
<th>Neither Agree nor Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teacher displays a clear understanding of differentiated instruction.</td>
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<tr>
<td>2. There is evidence that the teacher differentiates instruction on an as-needed basis.</td>
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<tr>
<td>3. There is evidence that the teacher relates instruction to various learning styles and interests.</td>
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<tr>
<td>4. There is evidence that the teacher develops lessons that enable students to make a real-world connection.</td>
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<td>5. The teacher assesses throughout the lesson to determine whether or not students understand the concept.</td>
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<tr>
<td>6. The teacher adjusts the pace of lessons in an effort to meet the needs of students.</td>
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<tr>
<td>7. There is evidence that the teacher designs lessons that allow for student choice with regard to independent practice activities/assignments.</td>
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<tr>
<td>8. There is evidence that the teacher adjusts lessons for diverse learner needs by scaffolding, tiering, and allowing for student choice.</td>
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<td></td>
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</tr>
<tr>
<td>9. The teacher assigns tasks that require students to apply and extend their understanding of concepts.</td>
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<td></td>
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<tr>
<td>10. There is evidence that the teacher uses a variety of materials to adjust to students’ reading abilities and interests.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11. There is evidence that the students are aware of what the teacher wants them to know, understand, and be able to do.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. It is evident that the students are grouped based on readiness, interests, and/or learning preferences.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. The classroom environment is structured to support a variety of activities including group or individual work.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. There is evident that students usually complete assignments cooperatively.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. There is evidence that students usually complete assignments independently.</td>
<td></td>
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</tbody>
</table>

Grouping of students: ____ Whole Group   ___Cooperative _____ Individualized Instruction
Point of lesson: ____Introduction/hook ____ Teaching obj./skill ____Independent practice ____ Closure
APPENDIX C

LETTERS TO SUPERINTENDENTS

September 13, 2011

Dear Superintendent,

My name is Kenitra Barnes, and I am currently enrolled in the doctoral program at the University of Southern Mississippi. I have successfully completed my coursework and will be conducting the research associated with my dissertation topic in the near future. My project is entitled *The Relationship Between the Pedagogical Use of Differentiated Instructional Strategies and 3rd, 4th, and 5th Grade Language Arts Achievement*.

Ultimately, I am requesting permission to distribute a simple questionnaire to participating teachers and later conduct a brief classroom observation of each.

Upon Institutional Review Board (IRB) approval from the University of Southern Mississippi, I would like to distribute perception surveys to all 3rd, 4th, and 5th grade Language Arts teachers and schedule a time during which I may observe within their classrooms. In addition, I will need to gain access to the spring 2011 student achievement data for the participating 3rd, 4th, and 5th grade Language Arts teachers. The achievement data will only need to include the participating teachers’ names and the percentage of their students scoring within each performance level. The data must contain the names of the participating teachers in order to afford me the opportunity to link the student achievement data with the perception survey and the observation instrument. The data will not need to include any information disclosing the names of students.

All identifying teacher and school information will remain anonymous throughout the study. Once the dissertation is complete, I will gladly share the findings of my research project with interested individuals. IRB requires that I obtain written permission from Superintendents prior to beginning my project. Should you wish to grant me permission, feel free to use the attached letter as a template. You will need to place your letter on letterhead, sign, and return it to me using the enclosed envelope. I appreciate your assistance in this educational venture.

Sincerely,

Kenitra Barnes
APPENDIX D

PERMISSION LETTERS FROM SUPERINTENDENTS

October 5, 2011

Ms. Kenitra Barnes
1525 E. Pass Road Apt. 235
Gulfport, MS  39507

Dear Ms. Barnes,

Thank you for your interest in conducting research within the District. Upon approval from the University of Southern Mississippi’s Institutional Review Board, you have my permission to conduct your study entitled *The Relationship Between the Pedagogical Use of Differentiated Instructional Strategies and 3rd, 4th, and 5th Grade Language Arts Achievement*. As you know, our district takes human subject protection very seriously, and we would like to ensure that any identifying student, teacher, or school information remain anonymous.

Please contact me should you have any questions.

Sincerely,

[Signature]

WVR/dr

SCHOOL DISTRICT
September 20, 2011

Ms. Kenitra Barnes
1525 East Pass Road, Apt. 235
Gulfport, MS 39507

Dear Ms. Barnes,

Thank you for your interest in conducting research within the
Upon approval from the University of Southern Mississippi’s Institutional Review Board, you
have my permission to conduct your study entitled *The Relationship Between the Pedagogical
Use of Differentiated Instrumental Strategies and 3rd, 4th, and 5th Grade Language Arts
Achievement*. As you know, our district takes human subject protection very seriously, and we
would like to ensure that any identifying student, teacher, or school information remain
anonymous.

Please contact me should you have any questions.

Sincerely,

Superintendent

SM/kis
October 5, 2011

Ms. Kenitra Barnes
1525 E. Pass Road Apt. 235
Gulfport, MS  39507

Dear Ms. Barnes,

Thank you for your interest in conducting research within the District. Upon approval from the University of Southern Mississippi’s Institutional Review Board, you have my permission to conduct your study entitled The Relationship Between the Pedagogical Use of Differentiated Instructional Strategies and 3rd, 4th, and 5th Grade Language Arts Achievement. As you know, our district takes human subject protection very seriously, and we would like to ensure that any identifying student, teacher, or school information remain anonymous.

Please contact me should you have any questions.

Sincerely,

[Signature]

Superintendent
March 7, 2012

To whom this may concern:

I, Dr. Tracy H. Jackson, give consent to Kenitra Barnes to modify my observation instruments titled “Teacher Perception Survey” and “Classroom Observation Instrument.”

Together in education,

[signature]

Tracy H. Jackson Ed.D.
APPENDIX F

INSTITUTIONAL REVIEW BOARD PERMISSION FORM

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147
Hattiesburg, MS  39406-0001
Phone: 601.266.8820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.

Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 11110201
PROJECT TITLE: Relationship Between the Pedagogical Use of Differentiate Instructional Strategies and 4th Grade Language Arts Achievement
PROJECT TYPE: Dissertation
RESEARCHER/S: Kenitra LaSha Barnes
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Educational Leadership
FUNDING AGENCY: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF PROJECT APPROVAL: 11/16/2011 to 11/15/2012

Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair
REFERENCES


Miller, S. P., & Hudson, P. J. (2007). Using evidence-based practices to build mathematics competence related to conceptual knowledge, procedural, and

Mississippi Department of Education. www.mde.k12.ms.us.


Tomlinson, C. (1999). The Differentiated Classroom: Responding to the needs of all Learners. Association for Supervision and Curriculum Development (ASCD), Alexandria, VA.


