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Teacher Depth of Knowledge as a Predictor of Student Achievement in the Middle Grades

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TEACHER DEPTHOF KNOWLEDGE AS A PREDICATOR

OF STUDENT ACHIEVEMENT IN THE MIDDLE GRADES

by

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ABSTRACT

TEACHER DEPTH OF KNOWLEDGE

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Schools strive to hire highly qualified teachers to educate and empower students

to become high performers (NCEE, 1983; Erickson, 1995). As a part of this effort,

teachers are required to obtain specific skills and certification to meet students' academic

needs. While the intent is recognized, there continues to be a discrepancy between highly

qualified teachers in the middle grades and student achievement (The Nations Report

Card, 2005; Turner-Bissett, 1999). Therefore, it is imperative to examine teachers'

perceptions and instructional strategies that may influence students' achievement.

The purpose of this study was to determine whether there is a correlation between

high-performing and low-performing teachers' perceptions and observations of their

instructional strategies as a predictor of student achievement. To achieve this, the study

was conducted using quantitative and qualitative research methodology in three steps.

First, teachers (n = 67) of middle grade students within a South Mississippi school district

completed a survey to identify their perceptions about their instructional strategies.

Second, the researcher categorized the participants as high-performing or low-performing

teachers based on their students' achievement scores to assess if there is a relationship

between their performances and student achievement. Last, the researcher conducted

observations of the teachers' classroom performance to examine if a relationship exists between perceived and observed instructional strategies.

Sixty-seven teachers completed perception surveys and 22 of the 67 participants agreed to classroom observations by the researcher. Perception surveys and observations were analyzed using descriptive statistics. The results indicated 98.5 % of the teachers participating in the study perceived that they were able to engage students in learning and were comfortable with the content-specific concepts to meet academic standards. The hypothesis could not be tested to compare high-performing and low-performing teachers due to the lack of participants willing to volunteer for observations. High-performing, or depth of knowledge teachers (100%), were observed to actively engage their students in the classroom. However, low-performing, or acquisition teachers (79%), were observed to engage students in the learning process. The results of this study imply that teachers' perceptions may play a role in the dissemination of instructional strategies that engage students in active learning.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

More than half of the newly employed mathematics, science, and English teachers

were not qualified to teach these subjects was one of the profound findings regarding

teachers and teaching in the United States in 1983 (NCEE, 1983). To address this

problem, federal accountability measures, the No Child Left Behind Act of 2001, was

enacted. While the new legislation had substantial grounds to improve academic

standards, the ability for school districts across the United States to meet the expectations

of the standards has continued to be an intense problem in today's public educational

system. Teachers are required to obtain highly qualified standards to teach content-

specific courses in the middle grades (grades 4-8). Highly qualified is defined by the

State Department of Education as a middle school teacher who holds a degree,

certification, or licensure in a specific content area or can prove that they know the

subject that they have been required to teach in the State . Teachers must provide proof

through a demonstration of competency by earning credits equivalent to a major in the

subject area in which they want to teach; pass a state qualification exam; and earn

advanced certification from the state, or a graduate degree (New No Child Left Behind

Flexibility, 2004). While the intent has been recognized, there continues to be a

discrepancy between the qualifications and certifications held by teachers in the middle

grades and the achievement of their students as measured by state criterion reference tests

(Nations Report Card, 2005).

Far too often educators have blamed parental involvement and poverty as reasons

for a student's lack of success in school. Although these factors may play a role, the most

profound factor that has contributed to the lack of a student's success was the lack of qualified teachers to instruct those students as demonstrated by the 90/90/90 study conducted by Douglas Reeves (2000). This study included schools that were at least 90% combined minority enrollment, at least 90% free or reduced lunch qualified students, and at least 90% successful on standardized assessments. The schools examined in this study were found to have a high level of student achievement despite challenging circumstances. The results of the 90/90/90 study implied the continuous need to examine the qualification of teachers, the examination of concepts that students were taught for academic achievement, and instructional strategies demonstrated in the classroom to facilitate student learning (Reeves, 2000).

School districts all too often have tried to attribute student's success to an outstanding principal and/or superintendent. However, Haycock (1999) conducted research that raised questions if student's success was attributed to teachers or if students of low socioeconomic and minority backgrounds performed poorly due to the low performing schools that they attended (Haycock, 1999). Haycock concluded that the difference between a good teacher and a bad teacher can be a full level of achievement by students in a single year (Haycock, 1999).

Instructional strategies are considered one of the most crucial components in determining the success of students, but may be often neglected due to pressure on teachers to prepare students to score high on academic achievement tests. Moreover, teachers must incorporate instructional strategies to engage students in learning and to sustain continued success in the classroom. There are many instructional strategies that address ways to improve a student's success. One strategy, differentiated instruction, is

individualized instruction used by teachers to meet the needs of all students in mixed ability classrooms (Marzano, Pickering, & Pollock, 2001). Working on the Work (WOW) is an instructional process created by Dr. Phillip Schelechty (2002) that emphasizes the importance of student engagement to the learning process and thereby student achievement. Understanding by design is an instructional process that attempts to help educators make it more likely by their design that more students really understand what they are asked to learn (Wiggins & McTighe, 2005). This is accomplished through backwards design-the process of beginning with assessment in mind before creating the lesson plan. In order for students to be successful in the classroom the work that they are asked to do must have substance. Backwards design accomplished this goal by allowing teachers to understand what it is they want students to know and understand (Wiggins & McTighe, 2005). Finally, depth of knowledge is an instructional process that requires teachers to dissect the depth in which the instruction takes place. Teachers must reflect deeply and determine the purpose of their instruction and thereby assess students on the information that should be retained for lifelong learning through data analysis which allows teachers to differentiate according to the child's needs (Webb, 2002). In order for a district to meet the needs of all of their students, data must be in place to determine a need (Burns, 2004).

Research has been conducted to determine how teachers perceive their instructional process in lieu of how they performed in the classroom (Turner-Bissett, 1999). In 1990, Michael Kirst (1993) questioned whether or not the United States was able to meet worldwide educational competition. The prospect that Kirst raised approximately twenty years ago still remains according to the NAEP and business

standards exploring if American students are equipped to compete in the global job market. Since the establishment of state criterion reference tests via the No Child Left Behind Act of 2001, many middle grades teachers face challenges attempting to adapt to the continuous changes to content-specific curriculum to meet annual testing standards. Although states and school districts across the United States have attempted to address this problem through highly qualified mandates, many teachers do not have the capacity to go beyond the acquisition level with content. According to Kirst (1993), educators and school administrators must realize that teachers must have an understanding of the content area in which they teach at an epistemic cognitive level, which allows them to relay the content to students in a way that is student-friendly and meets the learners' needs. The No Child Left Behind Act of 2001 required teachers to implement detailed lesson plans that incorporate learning strategies that engage students in the lifelong learning process. Additional challenges include meeting the needs of students with special needs, learning disabilities, or at risk for other learning impairments, as well as students who have not met the proficiency levels mandated by federal and state accountability testing regulations (Turner-Bissett, 1999).

Teachers who meet student's needs at an epistemic cognitive level are considered depth of knowledge teachers. Depth of knowledge teachers are adept in their content. Moreover, they continuously seek ways to hone their craft. A depth of knowledge teacher is one who believes that rigor, relevance and relationships are key components to sustaining student achievement. Depths of knowledge teachers understand the importance of structure in the classroom and the role it plays in the success of students. They also understand the importance of understanding their content. Depth of knowledge teachers

are able to modify their subject content to meet the differentiated needs of their learners. They also make the content interesting to the student as to enhance student engagement. Depth of Knowledge teachers first understand the purpose of the lesson, subject matter structures, and ideas within and outside their discipline. They understand what they teach and, moreover, understand it in several different ways as to relay it to their learners. Depth of Knowledge teachers understand that comprehension is very important; therefore, they engage in teaching to achieve specific educational purposes. Depth of knowledge teachers help students gain literacy by continuously exposing them to fluency checks and constantly reading with and to students. They enable students to use and enjoy their learning experiences by actively engaging them in activities that are not only meaningful but relevance to their cognitive level and most often interest. Depth of knowledge teachers enhance students' responsibility to become caring people by exposing them to activities that are relevant to the student's surrounding which enables the students to make personal connections to their learning. Depth of knowledge teachers help students develop broader understandings of new information and help students develop the skills and values they will need to function in a free and just society (Shulman, 1992)

The opposite of a depth of knowledge teacher is an acquisition teacher. While there is no specific term "acquisition teacher" Wiggins and McTighe (2005) using their concept of Understanding by Design explained what it means for a teacher to teach at the acquisition level thereby the term "acquisition teacher" was created. Some teachers are not able to sustain the constant success like depth of knowledge teachers. These teachers are known as acquisition teachers. Acquisition teachers are those that do not teach their

content in depth. They talk generally about the subjects and never get to the reason why the content is important to the student. The acquisition teacher most often does not experience student success because students to do not understand the relevance of the lessons and, therefore, do not try their best at achieving success. There is a disconnect between the students and the content they are learning. Using the Constructivism approach allows the learner to emphasize the building that occurs in the learner's mind. Learning takes place according to the Constructivist Theory when a student is able to connect their learning to prior knowledge and see the whole picture (Piaget, 1971). A depth of knowledge teacher is able to help students makes this connection whereas the acquisition teacher can not or will not help students access that prior knowledge; therefore, the learning is isolated and thereby ineffective. The acquisition teacher finds it difficult to connect the content to real world situations. This is sometimes due to the fact that the acquisition teacher does not fully understand their content and as a result can not relate it to anything other than general information.

When middle school students are academically unsuccessful, they become at risk of dropping out of school in the later grades; conversely, this prospective was challenged by a study conducted by Rumberger and Palardy (2005) investigating the relationships among several indicators of high school performance: in 1988, 14,199 students participated in the National Education Longitudinal Survey. In this study, students' performances based upon test scores, dropout rates, transfer rates, and attrition rates of high school students was examined. Schools that were effective in promoting student learning (growth in achievement) were not necessarily effective in reducing dropout or transfer rates; moreover, after control for student input, high schools exhibited little

variability in dropout rates but considerable variation in transfer rates. In addition, characteristics of schools that contributed to performance in one area often times did not contribute to performance in another. Given these findings, the authors suggested that teachers' ability to motivate students to learn and students' assessment scores should not be the only criteria to assess low performance and that dropout and transfer rates should be included in assessment of school performance.

Administrators are left to face many consequences when teachers are unable to teach the required content. When teachers are unable to educate students at the depth of knowledge level required by the curriculum, the accreditation levels of the schools decrease, and ultimately effect administrators' employment due to lack of school performance. Also, many school districts across the country are at risk of losing Title I funding due to lack of growth as determined by the federal government. Without funding, many schools in the public school system would not survive (Title I Report, 2004).

Teacher capacity has become an issue in the middle grades due to the increased rigor in the content (Sirls, 2004). Because of this dilemma, a study was conducted to determine whether or not there was a significant correlation between teachers' perception of their depth of knowledge of the content in which they teach and the level of capacity observed by the researcher within their content area.

<div align="center">Statement of the Problem</div>

Many students in the middle grades are not successfully achieving academically based upon adequately yearly progress as identified by the No Child Left Behind Act of 2001. Moreover, there was research that indicated that teachers who are not properly trained to teach the specific content required by a more rigorous curriculum and/or unable

to incorporate instructional strategies to engage students in learning may have an impact on student achievement (Turner-Bissett, 1999). Therefore, it was imperative to know if instructional strategies as well as teachers' confidence to disseminate content-specific concepts to students influence student achievement be identified.

Purpose of the Study

The study was conducted in a school district with teachers who had students scoring in the advanced and proficient categories on criterion reference tests and teachers who had students with scores in the basic and minimal categories on state criterion reference tests. There were teachers who were not considered as depth of knowledge teachers nor acquisition teachers because they did not fit the criteria set forth for either category; those teachers were not considered in this study.

The school district involved in this study was comprised of three elementary schools with the third, fourth, or fifth grades scoring at one hundred percent in the proficient or advanced categories on the 2006-2007 administration of the State criterion test. In addition, this district had three elementary schools that were ranked among the top five schools in the state with the highest assessment scores in reading or math as identified on the 2006-2007 administration of the test. All three of the top performing schools had teachers who were included in this study. There were no schools in this district that were under performing according to state testing criteria.

Research Questions

This study sought to answers the following questions:

1. What were the behaviors of teachers who taught for depth as identified through observation?

2. What were the behaviors of teachers who taught for acquisition of knowledge as identified through observation?

3. What were the differences if any between the two groups of teachers' instructional strategies?

Hypothesis

The following hypotheses will be considered in this study:

H_1: There are significant differences between the dependent variables of teacher instructional strategies and the independent variable student achievement as determined by the state accountability measures.

Definition of Terms

90/90/90 Schools- schools identified in a previous study as 90% combined minority, at least 90% free or reduced lunch qualified students, and at least 90% successful on standardized assessments.

Accountability- The responsibility of educators to taxpayers to adequately and appropriately educate all students.

Accreditation Status- The status assigned to a school district based on its compliance with the process standards.

Achievement Gap- the inconsistencies occurring in student groups in reference to their academic achievement.

Acquisition teaching- teaching that only allows students a glimpse of the content as opposed to identifying the underlying reason for the learning the content and transferring that information to other content areas and ultimately lifelong learning. Acquisition learning is the processing of information through memorization of isolated and unlinked

facts. It leads to superficial retention of material for examinations and does not promote understanding or long-term retention of knowledge and information.

Acquisition teacher-teaches students as the surface level; Does not teach in depth. Students only receive fragments of the lessons. Never reveals the purpose of the lesson.

Adequate Yearly Progress Index for Reading and Math- An index (achievement measure) based on the percentage of students scoring proficient or above on the state reading or math assessments. An adjustment is required in order to combine the test data across grade levels.

Attendance Rate- An indicator that helps to determine adequate yearly progress. It is calculated by the average daily attendance across months 1-9 by the average net membership across months 1-9 and multiplying by 100

AYP Model- the formula specified by NCLB for determining whether schools and school districts have met adequate yearly progress standards. According to the process set forth by NCLB the model does not consider growth at the school or school district. It holds schools and districts and sometimes subgroups of students within schools and school districts to a fixed set of annual objectives based primarily on the results of statewide assessments. A starting point is determined, which is set forth by the lowest performing subgroup or the performance of the 20th percentile school in the state. A line is projected over a maximum of a twelve-year period.

Depth teaching- deep learning that involves the critical analysis of new ideas, linking them to already known concepts and principles, and leads to understanding and long-term retention of concepts so that they can be used for problem solving in unfamiliar contexts. Deep learning that promotes understanding and application for life.

Depth of Knowledge Teacher-A teacher that teaches in depth, builds on students' prior knowledge and explains to students why they are learning what they are learning.

Differentiated Instruction-Students are allowed to receive instruction at their own rate and in their own way. Students learning styles are identified and lesson are created to meet those learning styles.

Graduation Rate- The number of students in a given school attending from ninth through twelfth grades and obtaining a diploma after meeting the criteria set by the state and the local school district's governing body.

Middle grades- the fourth through eighth grades.

Process standards- the standards in the State Public School Accountability Standards.

School Performance Classification- A label assigned to a school or district based on achievement and growth.

Delimitations

The following delimitations were identified for this study:

1. Only one school district in one state was included in this study.

2. The criterion variable of student achievement was limited to district test scores and State criterion reference test scores for the 2006-2007 school term.

Assumptions

1. All participants will answer perception survey questions truthfully.

2. All participants in this study were either highly qualified or hold a degree in the content area taught.

Justification

The purpose of this study was to determine if teachers' perceptions and observations of their instructional performances play a significant role in student achievement in the classroom. One of the most controversial issues in education today according to the Mulvenon, Murry, and Ritter (2001) was the issue of accountability for student achievement as part of their school's performance. The former State Superintendent of Education believed that although the State was maintaining or making slight gains in student achievement, the primary goal was for students to make significant gains. He inferred that students in the middle grades had not made substantial achievement gains; therefore, the rigor of the State criterion test had to increase (Blanton, 2006). With the increase in assessment rigor, teacher qualification and classroom standards across the State had to increase as well. Nevertheless, he also felt that teachers needed to expand their depth of knowledge to motivate and encourage students to embrace the learning and application of learned concepts and not merely memorize class-covered content (Helms, 2008). It was known but not widely accepted that if students can not apply concepts covered in class, students were not taught but merely presented the information.

The results from this investigation were intended to provide educators across the United States with information on how instructional strategies may impact student achievement. The school district in this study had experienced a decline in student achievement in the middle grades. Educators, teachers, and administrators indicated that this decline was due to the new and extensive content being introduced in the middle grades as a part of the new assessment standards.

Typically teachers in grades 4-8 have certification qualifications to teach kindergarten through 8th grade elementary students. Although teachers may be certified to teach at these grade levels, they may not have held any specific certification or lacked an emphasis in one content area limiting the possibilities that students may receive the full spectrum of that content area. Student achievement may be negatively impacted if teachers were not adequately trained to give specific information on that content area. Moreover, teachers may not be equipped to disseminate engaging, effective lessons and assess if students have learned specific content in the subject areas. Since national and state criterion reference tests are the primary standard for identifying school districts' performances, many schools across the United States have been unable to meet performance standards. New standards require teachers to implement instructional strategies to engage students who may have typically been overlooked due to their inability to comprehend or apply what they have learned; however, school districts are being prompted to effectively educate students.

CHAPTER II

THEORETICAL FRAMEWORK

Introduction

The intent of this review was to develop a foundation for the research examining teachers' perceptions about their instructional strategies and to determine if there was a relationship between their dissemination of these instructional strategies to student achievement in the middle grades. In order for teachers to be qualified to teach a subject area they must acquire qualifications by demonstrating competency through a teaching practicum; obtaining educational credits in a major content area; and/or passing a state certification exam in the content area in the state in which they want to be employed (No Child Left Behind, 2004). With all of these parameters in place to become qualified educators, highly qualified teachers who specialize in specific content areas continue to face challenges when students do not meet performance and achievement measures established by State criterion reference tests.

This review of literature includes research related to teacher perceptions, effective instructional strategies, and the advantages of using assessment data in making instructional decisions, and student achievement as relative to teacher behaviors. Also included are theoretical concepts pertaining to the effects of teacher perceptions on student achievement sorted by appropriate demographics.

Rationale for Accountability Standards in Education

George Bernard Shaw wrote an infamous quote that has plagued the teaching profession for centuries "He who can does. He who cannot teach." (Shaw, 1903). While this has been and continues to be a challenging opinion, educators in this profession are

responsible for discounting this misconception. This perception of the education

profession has given rise to numerous changes in legislation and policy to improve

educational outcome. Accountability measures stands as the primary of No Child Left

Behind, implemented under President George Bush's administration (No Child Left

Behind Act, 2001).

Accountability measures, which include data driven decision making, has been in

existence for a number of years through the federal government's involvement in public

education. The history behind accountability and data driven decision-making began with

the federal government handing down minor regulations in early educational policy for

public education at the state level. The department of education, established in 1867,

focused primarily on collecting information that would allow states to improve their

school system (U.S. Department of Education, 2008); yet, accountability standards were

first noted in 1912 with W. W. Charter and Franklin Bobbit, who became famous for

objective analysis**.** Charter and Bobbitt itemized curriculum into hundreds of specific

measurable objectives so that schools could be held more accountable for the knowledge

acquired by their students. This was the beginning of competency based and

performance-based education (Charters, 1923).

Educational accountability is also a part of total quality management that

eventually developed into effective school management. Total quality management's

educational components begin with the PDSA model (planning, doing, studying, and

acting) which is a vital component to continuous quality improvement (Glickman,

Gorden, & Ross-Gorden, 2004).

Although accountability as we know it today may be different, accountability was in fact a major part of the educational arena as far back as the Essentialist Movement. Essentialism is one of many theories that have had a profound effect on the development of accountability as it relates to standardized testing. Essentialism is a theory that concludes that children should learn the traditional basic subjects thoroughly and rigorously (Barrett, 2001).

Because accountability has been a continuous issue, several initiatives were developed by the federal government through education reform. One of the first major initiatives focused on desegregation with Brown vs. The Board of Education, The National Education Act of 1958, and The Elementary and Secondary Education Act of 1965. In 1954, the United States Supreme Court ruled in favor of Oliver Brown, a Topeka Kansas citizen who simply wanted his daughter to attend a school where she could get a better education. The Supreme Court ruled that the board of education did not appropriately meet the standards under the "Separate but Equal" guidance (Dasilva et al., 1972, p.312). Another major federal regulation that affected accountability is often referred to as the father of accountability standards and was enacted when the Soviet Union's *Sputnik* defeated America's *Vanguard* in space. This event sparked the beginning of the National Federal Education Legislation of 1958 when the United States Congress passed a law that there must be improvements in the areas of math, science, and foreign language in order for American students to be able to compete globally (U. S. Department of Education, 2008).

States applying for federal funding under the National Education Act of 1958 had to submit an educational plan with a component for public schools in secondary settings

to include programs that tested students who were identified as having above average abilities. This act was also the first time that standardized testing became a part of federal regulations that was attached to federal funding (U. S. Department of Education, 2008).

The Elementary and Secondary Education Act (ESEA) of 1965 under President Johnson also included accountability as a major component in educating America's children. The enactment of ESEA addressed the childhood poverty issue and is responsible for the implementation of many educational programs in existence today. Since 1870, the federal government made several attempts to address America's poor children with few positive results. This act was the first attempt to address the devastating issue of poverty among school age children (U. S. Department of Education, 2008).

Bracey (2000) reported that thirty-five states had some form of statewide testing to determine social promotion for students graduating from high school. Since that time, all but one state had adopted tests for measuring students' performance. Bracey's account of education performance believed that the public schools' curriculum was not rigorous enough and schools made it too easy to graduate. Moreover, in 1983, under the Reagan Administration, *A Nation at Risk* was released and provided statistical data that gave factual information about the lack of success of the American educational system. The report emphasized that the United States was failing its children. A *Nation at Risk* also reported that greater emphasis be placed on core subjects such as math and English and more rigorous, measurable standards and higher expectations for students' performance (NCEE, 1983). President Reagan also had personal concerns that rigorous academic content should be focused on basics such as reading, writing, arithmetic, and history. Reagan's advocated for legislation that changed measures of educational success which

moved from appropriating funds based upon the numbers of educational programs, to establishing higher academic standards and assessments to determine effectiveness of their efforts. The emphasis on quantifiable success shifted the nation into examining public education according to the market-driven standards of excellence and quality rather than standards of equity and equality (NCEE, 1983).

The initiation of *Goals 2000* by the Clinton administration outlined the shift in the role that the federal government has in education from focusing on categorical programs to taking a more comprehensive approach to help all students succeed academically. The goal was to make sure that all students learned to think more cognitively, be prepared for responsible citizenship, be prepared for continuous learning, and productive employment in our nation's economy. With the belief that all children can learn at high academic standards, *Goals 2000* legislation concentrated on comprehensive school reform that encouraged the development of educational curriculums that aligned with high standards, strengthened accountability, and promoted the coordination of resources to improve education for the children. *Goals 2000* established goals that American students exiting fourth, eighth, and twelfth grades having demonstrated competency in English, mathematics, science, foreign languages, civics and government, economics, art, history, and geography (*Goals 2000*, 1998).

The No Child Left Behind (NCLB) Act of 2001 was the last education accountability legislation passed in the United States. NCLB added more comprehensive accountability requirements for all school districts that receive federal funding. More specifically:

NCLB was established to ensure that high quality academic assessments, accountability systems, preparation and training of teachers, curriculum, and instructional materials are aligned with challenging state academic standards so that students, teachers, parents, and administrators can measure students' progress. NCLB also allows for the assessment of the achievement gap between high and low performing students, especially the achievement gaps between minority and non minority students, and between disadvantaged children and their more advantaged peers. (No Child Left Behind Act of 2001, Public Law 107-110, sec 1111).

The major component of NCLB is the Title I act which requires states to establish their own standards and annual assessments in reading and mathematics in 2000 and science in grades three through eight in 2007. Although these requirements are consistent with earlier standards-based assessment legislation, the NCLB increased academic standards nationwide making the accountability system more effective by holding states and local school districts accountable for their achievements or the lack thereof in order to receive federal funding. Traditionally, low achieving schools must provide a high quality education to their students while providing alternatives to underperforming students to enable them to receive a high quality education. Schools must demonstrate, according to state established criteria, adequate yearly progress (AYP) for all elementary and secondary students including disaggregation of subgroups of students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency. Schools who do not meet the expectations of NCLB face consequences such as receiving school improvement status which required schools to develop a school

improvement plan and provide options for students to transfer to another public school within the district. After three consecutive years of not meeting NCLB standards, schools and/or districts must provide supplemental education, tutoring, and services for students. After four years, schools are placed in corrective action status and may replace staff, hire academic consultants, and/or implement a new curriculum. If schools reach a five-year period of not meeting NCLB standards, the schools are placed in reconstruction status and must plan for reorganization. If by the sixth year of failing to meet AYP, schools are placed in alternative governance status within their state. With the NCLB legislation, school districts must consider all factors including teachers' depth of knowledge for the content that they teach as well as meeting pedagogical standards (No Child Left Behind Act of 2001, Public Law 107-110).

Statewide Accountability System

Although the history of accreditation in the State began with a university's program of study for high schools in 1896, it was not until September 2003 that individual school performance classification was assigned. For the first time in over one hundred years all stakeholders-students, teachers, principals, superintendents, and school board members- were responsible for all children's education (Mississippi Statewide Accountability System, 2006). The guidelines for NCLB requires states to develop and implement a unified, statewide accountability system that is intended to evaluate all schools in school districts in the state that receive federal and state funding. The accountability model is broken down into two categories: districts and the individual schools within the district. Originally districts were assigned only an accreditation status based on compliance with the process set forth by the federal government's Title I policy.

In a separate category, schools were judged based upon students' growth and achievement; conversely, once NCLB was implemented, districts also became accountable for the schools within their district, and one school could not rely on the achievement of another school within their district.

In 1994, another piece of legislation, the *Improving Schools Act of 1994* was implemented. Each state was required to develop some form of accountability. The State established a criterion test and Subject Area Testing Program (SATP) to satisfy the mandates of Title I accountability requirements. NCLB required additional accountability standards which included a requirement that states had to meet AYP that was determined at the federal level if the state was to continue to receive Title I funding (U. S. Department of Education, 2008).

In October of 2002, The State Commission of School Accreditation recommended a school accountability model. It was approved in that same month. The State School Accountability model was used for the first time in the fall of 2003 when reports were provided to school districts (Mississippi Statewide Accountability System, 2006). There are 43 possible achievement variables, but few schools in the State show data on all 43. The possible achievement variables are a (on grade level) data for each of six grades (3-8) in three content areas (reading, language, mathematics)-18 possible variables; (Instructional level) data for each of 5 test levels (13-18) in three content areas (reading, language, mathematics)- 15 possible variables; Algebra I data for students tested at each grade level (8-12)- 5 possible variables; Biology I data for students tested at each grade level (9-12)- 4 possible variables; Alternate Assessment data- 1 possible variable.

The number of achievement variables appearing on a school's report will depend on the grade level configuration at the school, and the degree to which students with disabilities participated in instructional level or alternate assessment. (Mississippi Statewide Accountability System, 2006)

There are five achievement levels a school and/or district can attain. Level five schools are superior performing schools. Level four schools meet an exemplary status because they exceeded the growth expectation. Level three schools are considered successful; but, they did not meet the expected growth. Level two schools are those that failed to meet the expected growth but made some progress. Schools are only allowed to be in the level two categories for two years. After two years, students are allowed to choose the school of their choice if their current school fails to meet the expected growth. Level one schools are classified as underperforming schools and become at risk for State control which would result in the loss of jobs by all paid stakeholders such as school administrators, district administrators, and teachers (Mississippi Statewide Accountability System, 2006). The accreditation levels for the 2007-2008 administration of revised criterion referenced test was suspended by the superintendent of education due to more rigorous demands placed upon schools. Schools, however, will continue to be ranked after this initial administration of the State criterion test (Helms, 2008).

Because the State Accountability system is divided out into two categories: schools and districts, there are separate reporting categories for each that determines their success. At the district level to achieve average yearly progress, graduation rate; attendance rate; proficiency indexes for reading and math; and process standards determine achievement. Individual schools success is determined by average yearly

progress, proficiency indexes for math and reading, attendance rate, graduation rate, higher achievement index (students that perform at proficient and advanced, basic achievement index (students that perform at minimal and basic), scales scores over two years and other variables deemed appropriate such as sub categories (Mississippi Statewide Accountability System, 2006).

<div align="center">The Effective Teacher and Effective Teaching Standards</div>

Because teachers and other stakeholders are now being held at a higher level of liability for the education of students, teachers' effectiveness is more vital to students' academic success. James Stronge (2002) defines an effective teacher as one who knows the importance of instruction, allocates time properly, has high expectations for his or her students, and consciously and consistently plans for instruction. When an effective teacher implements instruction, he or she has specific instructional strategies that are developed to meet the needs of students and communicates his or her expectations to students, and he or she understands the complexities of teaching. An effective teacher also uses specific questioning techniques, and understands that students' engagement is essential to learning. According the Stronge, effective teachers also monitor students' progress and respond to individual needs of each student (Stronge, 2002).

Effective teaching is the result of a combination of many factors, including aspects of the teacher's background and ways of interacting with others, as well as specific teaching practices. To discover what makes an effective teacher, one must understand how effective is defined and the characteristics of an effective teacher (Stronge, 2002). Effective teachers understand the importance of comprehensive instruction. Kemp and Hall (1992) stated that effective teaching provides a variety of

opportunities for students to apply and use knowledge and skills in different learning situations. Learning goals are met when students participate in meaningful, relevant classroom activities that lead not only to understanding but to retention and a transfer of knowledge (McTighe & Wiggins, 2005). Because of the need for meaningful learning and different learning styles, it is advantageous for teachers to employ several instructional processes in the daily lessons of teachers in the middle grades.

Helen and Anderman (2001) conducted a study to investigate the explicit and implicit approaches in which four fifth-grade teachers communicated an emphasis on mastery and performance goal orientations to their students. The authors used survey data on students' perceptions of the classroom mastery and performance goal structures from 223 students in ten classes to identify four classrooms with significantly different motivational profiles. Observational data was used to describe teachers' talk and practices regarding tasks, authority, recognition, grouping, evaluation, time, social interactions, and students' ability to seek help in class. Helen and Anderman found that teachers perceived as having a high mastery focus spoke about learning as an active process, and this was reflected in their practices. They required involvement from all students, emphasized effort, and encouraged student interaction. Those teachers also exhibited social and affective support for, and concern about, students' learning and progress. These practices were not observed in low mastery-focused classes. The teachers perceived as having a high performance focus emphasized formal assessments, grades, and students' relative performance to a substantially greater extent than the low performance-focused teachers (Helen & Anderman, 2001).

Instructional Strategies that Work

Educational research indicates that there is truly no replacement for an effective teacher; though, there are many methods and strategies available to make his or her responsibilities more efficient. Many tested instructional strategies presented by Marzano, Pickering, and Polluck (2001) in *Classroom Instruction that Works* have proven over time to be advantageous to students' learning. These instructional strategies simplify complex tasks and ultimately change learning outcomes. One of the most popular instructional activities that effective teachers use is assigning students to compare/contrast and classify items. This method often times use metaphorical examples as well as analogical examples and is recognized by Marzano as having a 45% gain in student achievement. Using summarizing and note-taking is another method that requires students to devise oral and written summaries, take notes, then revise note errors, and adding needed additional information as necessary. This technique is recorded as having a 34% gain in student achievement. Teachers sometimes overlook the small but powerful technique: effort and recognition. Marzano noted that students should be praised for their efforts and allowed to celebrate their successes. This exemplifies progress toward learning goals and also emphasizes students' hard work and perseverance. This technique reported a 29% gain over students who did not receive recognition and praise. Homework and practice has in the past been used by some teachers as a means of punishment and consequences for failure to comply in class. Yet, when used correctly, homework and practice have increased student achievement by 28% over students who were not given homework and practice or the method was used in the wrong way. Homework should be used as a means of practicing important skills and reinforcing what students have learned.

Nonlinguistic representation is another instructional strategy by which students create a visual image to depict what has been learned or refining what is being learned into a manner in which the brain can process the information. This strategy is most important to students who are kinesthetic learners. Nonlinguistic representation is demonstrated through the use of mental maps, pictures, graphic organizers, physical models and role-playing. Cooperative grouping, arranging students into mixed teams by ability or interest, if used by teachers was reported to increase student achievement by 27% as compared to those students whose teachers do not use cooperative groups. In order for students to know what they are expected to learn, the teacher must set learning goals at the beginning of each unit. Students and teachers can then evaluate their goals in the middle of the unit providing feedback, and finally at the end of the unit, the student can be reflective as to what they expected to learn and what they actually learned and the teacher can provide a summative evaluation. Using this strategy of objective setting and feedback is a means of truly assessing student learning. The strategy of students forming hypothesis allows students to engage in specific exercises to establish and test their hypotheses. The skills involved in this task are problem solving, decision making, investigation, inquiry, system analysis, and invention. This strategy is reported to have a 23% higher student achievement rate for students whose teachers asked them to form hypotheses (Marzano, Pickering, & Pollock, 2001).

Differentiated Instruction

Teachers who have a cognitive knowledge of how students learn differentiate instructional strategies and activities for individual learners or provide differentiated instruction (Turner-Bissett, 1999). Differentiated instruction is defined as a way for

school districts to meet the needs of all students in mixed ability classrooms.

Differentiated instruction focuses on whom, where, and how teachers teach; nevertheless,

in order for a district to meet the needs of students, data must be in place to determine a

need (Burns, 2004). This cognitive instruction method can be used at all levels; but, most

school administrators are faced with the dilemma that many teachers are not equipped to

differentiate because they lack the content knowledge or appropriate training. By

including differentiated instruction, students and teachers are able to benefits from

owning their learning and not just regurgitating for a test (Burns, 2004). The most

effective forms of learning occur when students are totally engaged into meaningful

studies and projects. The primary task of educators is to challenge all students to a high

level of personal motivation (Erickson, 1995).

Working on the Work

Working on the Work (WOW) is an instructional process created by Dr. Phillip

Schelechty that emphasizes the importance of student engagement to the learning process

and thereby student achievement. Teachers must meticulously articulate instructional

practices so that learning takes place. *WOW* is based on ten design qualities that foster

student engagement. These are organization and knowledge, content and substance,

affiliation, choice, authenticity, clear and compelling product standards, affirmation of

performance, novelty and variety, safe environment, and product focus; however,

according to Schelechty, four of the design qualities: content and substance, clear and

compelling product standards, protection from adverse consequences, and organization of

knowledge, must be evident in every lesson. Without these four qualities, a lesson is not

considered complete and thereby not effective (Schelechty, 2002).

Content and substance is considered the cultural relevance of facts, opinions, cultural artifacts, books and materials used to present a lesson. It also requires the user to utilize research-based information to support the lesson being presented. Content and substance considers the audience's maturity level and prior knowledge with the intent of packaging the information in a way that engage students in active learning. Organization of knowledge is whether or not the material is presented in a way that is inviting to students. If there is organization of knowledge, students recognize a connection between what they are learning and other disciplines. This type of instruction also allows students to have ample time to digest what they have learned at a level of mastery. The third instructional process is product focus which indicates that students will be able to link the work that is assigned to a product, performance, or exhibition. Students are given directions on how to work toward the goal and they visualize a direct connection to the assignment and what they are expected to produce. If the product focus process is used, students will more likely see relevance in their given assignment. If there is evidence of clear and compelling product standards, the assessment process will be clearly articulated to the students. When this learning process is used, students should be given examples or rubrics of the desired results along with ongoing assessments throughout the process of giving the lesson. If teachers are protecting their students from adverse consequences of initial failure, students should be provided feedback throughout the process and teachers should not wait until the end of the lesson to give the final assessment. Students should be allowed to have peers edit their work before submitting a product from final evaluation. Schelechty (2002) also suggested that students be given an opportunity to redo an assignment if the product does not meet the standards without the first evaluation

counting against the student. Student's work should be displayed for persons other than the teacher to affirm their performance to added value to the product by others.

Cooperative work is a part of the *WOW* model. This process promotes affiliation. Teachers allow students to be novel and use variation and are given the opportunity to be more engaged in the lesson because they are given the opportunity to have a variety of ways to present the material. Teachers give students an opportunity to express themselves while still having the ability to identify whether or not the students have mastered the assigned skill. The final design quality is authenticity. If authenticity is evident in the lesson, students will view their products as relevant and meaningful. The students are also able to connect the lesson to the real world, which ultimately results in student achievement (Schelechty, 2002).

There are five levels of engagement in the *WOW* model: authentic engagement, ritual engagement, passive compliance, retreatism, and rebellion. When teachers design engaging and exciting activities, students begin to see the relevance in the lesson assigned and encourages them to be engaged because there is purpose. When students are ritually engaged, there is a negative extrinsic consequence associated with students' lack of success, so they are forced to be attentive when they see no relevance in the lesson. Ritual engagement promotes students' apathy toward their work. Most of the time, students do not put forth their best effort but do enough effort to get a passing grade. Students who are passively compliant are willing to do whatever is necessary so that they do not experience a negative consequence. If students are in retreatism, they are completely disengaged in the lesson; though, they do not present a discipline issue unlike students who are rebellious and disengaged and are causing a disturbance in the classroom. When

teachers consider the type of design quality while planning the lessons, they are more likely to develop more student-friendly lessons that will increase student engagement (Schelechty, 2002). Active student engagement, as perceived by the student, is another factor that may increase student achievement as well as having strong relationships between teachers and students (Bishop & Pflaum, 2005). If students become actively engaged in learning, they are more likely to learn the concepts that teachers are trying to teach (Schelechty, 2002). The pressures of accountability are motivating teachers and administrators to measure the students' engagement in their classes. Therefore, standardized testing may be viewed as inappropriate to measure students' success resulting in many students who fail due to these standards. According to Schelechty (2002) many teachers choose to work on the students and school administrators choose to work on the teachers; but, the problem is that no one is working on the work or the lesson in which to engage students in their own learning. A part of the *WOW* concept implies that teachers' control over the curriculum and content will somewhat ensure that the schoolwork is engaging. If the work is engaging, there is a higher probability that students will learn and meet the goals of the lessons. The *WOW* framework also provides teachers will a tool that gives direction for designing the school work or lesson. The framework provides a set of standards, the design qualities and levels of engagement, that help make teachers' decisions about how to instruct students will most likely ensure that the work is engaging and the desired learning experience is achieved (Schelechty, 2002).

The logic of Working on the Work (WOW) is derived on the basis that students' interests directly influence their efforts to learn. Students determine how much they will learn based on whether or not they are engaged in the lesson which depends on the depth

of knowledge of the teacher to prepare the lessons in a way that is conducive to student interest. Teachers must design work that is responsive to students' needs and motivation for learning. This is the only way students will be able to learn the concepts outlined in the lesson by teachers and not just memorize these concepts. Teachers must be knowledgeable about their content. There is no substitution when teachers are trying to design lessons that are engaging to student, they must first know and understand the purpose of the skills and lesson to be taught (Schelechty, 2002).

Understanding by Design

Turner-Bissett (1999) suggests that knowledge of educational ends, purposes, and values is a theme for developing teachers. This idea follows the premise of Wiggins and McTighe (2005) that teachers must begin with the end in mind means to start with a clear understanding of your destination. It also means that teachers must know what goals and objectives that are desired to better understand where students are and plan steps to take students' learning in the right direction (Covey, 1989).

Wiggins and McTighe (2005) attempted to address this recurring issue with the implementation of an instructional process entitled *Understanding by Design* UBD. This instructional process attempts to answer the question OF How do educators make it more likely by their design that more students really understand what they are asked to learn. This process emphasizes essential questions, ideas, and understanding of concepts as well as acquisition of knowledge about the objectives learned, and ultimately transferring that knowledge to real world experiences (Wiggins & McTighe, 2005).

The rationale behind UBD is that students often experience misunderstanding of the lessons. Many students forget information over the summer months, misunderstand

information given to them by their teachers, and more often than not acquire rigid knowledge, but they are not able to transfer the information. UBD requires teachers to reflect on how they are designing lessons. Wiggins and McTighe (2005) suggest that educators face two "sins": coverage focused teaching and activity focused teaching. Coverage focused teaching means that teachers barely skim the content of what they are to teach. Under this type of negative instruction, teachers reflect on every angle of the content but never delve deep into to the content of the lesson. Activity focused teaching is the lesser of the two "sins". Under this type of instruction, teachers concentrate on the activities for students but must be mindful that although activities are useful, they must also be purposeful.

Backwards design is another instructional design under *Understanding by Design*. There are three stages of backwards design. Stage one requires teachers to identify their desired accomplishments. Stage two requires that teachers determine acceptable evidence of assessment, and stage three requires teachers to plan learning experiences that will lend themselves to first acquiring the knowledge, making meaning of knowledge, and ultimately transferring the knowledge (Wiggins & McTighe, 2005).

Depth of Knowledge

Depth of Knowledge according to Norman L. Webb (2002) is a method to examine the consistency between the cognitive demands of standards and the cognitive demands of assessments. There are four levels of "Depth of Knowledge": level one, recall; level two, basic reasoning; level three, critical thinking; and level four, extended thinking. Level one only requires that teachers ask students acquisition-level questions. This process requires basic recall of information. Level two requires that students use

some basic reasoning skills; yet, the end results require some prior knowledge. Level three is the critical thinking level and level four is a culmination of the aforementioned three levels, which usually produces an extended activity.

A level one activity only requires students to acquire a shallow understanding of the text. The information is usually verbatim or requires memorization of single words or phrases. Some examples of level on activities are writing definitions from the dictionary or identifying simple parts of speech (Webb, 2002). Level two indicates that students have a slight understanding of skills. At this level, students comprehend and process text or information given in context and require more than one step to process the information learned. Unlike level one questions, level two concepts may use key words such as summarize, interpret, infer, classify, organize, collect, display, or compare and contrast. Students often times must use inference skills to answer questions at this level. Some example questions may include use of context clues to identify the meaning of unfamiliar words, or predict a logical outcome based on information in a reading selection (Webb, 2002).

Level three requires students to attain a deep understanding for the concepts being taught. Students are encouraged to go beyond what is in the text by answering questions and justifying their answers. Key words may be generalized or connected to ideas. Level three questions often require abstract thinking, and superficial connections between several texts. Sample questions at level two may determine the author's purpose and describe how it affects the interpretation of a reading selection, or summarize information from multiple sources to address specific topics (Webb, 2002). Level four exposes students to higher order thinking. Level four questions cannot be assessed in a multiple

choice format; it is usually assessed in an extended activity or research-based project. Students may be asked to form hypotheses and make connections to text or their surroundings. Some level four examples may include analyzing and synthesizing information from multiple texts, or describing and illustrating how common themes in language arts are found across texts from different cultures (Webb, 2002).

<div align="center">Middle Grades</div>

Because the middle grades represent a transition period for students, the academic self concept can have a drastic affect on student achievement. John Byer (1999) conducted a study to determine whether or not there was a significant relationship between students' perceptions of their classrooms' social climate and their academic self concept. Byer (1999) found that there was a significant relationship between students' perceptions of classroom social climates and academic self-concept. Also, grade span configuration could play a significant role in the academic achievement of middle grades students. Ben Cox (1996) conducted a study to determine whether or not grade span played a role in the academic achievement of eighth grade students in math. The results concluded that the most significant relationship was the grade span of fifth through eighth grade students.

All educational instructions require teachers to adequately use and relay information in a manner in which students understands. This is not always the case in all classes, especially in the middle grades. Regina Sirls (2004) conducted a study on the decline of fourth grade achievement scores. Random groups were formed consisting of eighty fifth grade students from high to low achievement status. The results revealed that both high and low performing groups did not exhibit a pattern to indicate that student

achievement decreased with larger class size. The study finds that teachers with fewer credentials were assigned to the lower performing students, which could be the reason for some of the lack of academic success. Gender and race were mixed as possible factors associated with student achievement, and parent involvement was higher for students who consistently score higher on standardized tests. Sirls (2004) investigated four major factors that could be contributors to the lack of achievement in the fourth grade students: class size increased, emergency credentialed teachers, gender and culture, and parental involvement. However, the issue of teacher instructional strategies was not investigated. In fact, there is little research associated with why students in the middle grades are failing. According the 2005 NAEP scores, reading score for eighth grade students continued to decline (The Nations Report Card, 2005). The scores revealed that the national average for eighth grade students dropped one point lower than in 2003 and two points lower than in 2002 indicating a steady decline in test scores. One major factor for this decline may be related to middle school teachers' perceptions of their instructional practices (U. S. Department of Education, 2008).

<div align="center">Building Teacher Capacity of Content Knowledge</div>

McMunn, McCloskey, and Butler (2004) suggested that in order for teachers to become more proficient at their craft and gain capacity in the classroom achievement, professional development must be available to them. According to the authors, research and practice over the last decade by educators have bridged the gap which suggested better evaluation tools at the classroom level has had a positive impact on student learning. Through these assessment measures, information on instruction and providing clear and useful feedback to students on their progress can help teachers plan or modify

instructions to meet the needs of their students. The study conducted by McMunn and associates asked the question of where does the responsibility for building teacher capacity lie. The authors believed that school districts have focused at the school level for far too long and believed that the focus should lie with teachers (McMunn, McCloskey, & Butler, 2004).

The emphasis on content knowledge is in sharp contrast to what a teacher needed to know in the nineteenth century. Teacher examinations typically did not have a deep concentration on content knowledge; they included a test of basic skills in writing, spelling, reading, and calculating. Often these tests were treated as prerequisites for entry into a teacher education program rather than as standards for defining eligibility to practice (Shulman, 1986).

In the State included in the study, the evaluation of teachers emphasized the assessment of capacity to teach established upon researched-based premises. Examples included of some of those tests as reported by Shulman (1986) are organization in preparing and presenting instructional plans, evaluation (assessment), understanding youth, management, and educational policies and procedures. When comparing these categories to those in the 1875 test, the results are quite different. Shulman (1987) raised the question, "Where did the subject matter go?" If we are to measure the educational profession by what lies in our current test George Bernard Shaw may be accurate with a slight twist to his statement "He who knows, does. He who cannot, but knows some teaching procedures, teaches." While pedagogy is undeniably important to the classroom teaching in determining delivery, there must be standards set concerning the content. Policymakers according to Shulman (1986) justify the heavy emphasis on procedures by

referencing researched-based teaching effectiveness. In other words, the test reflects what it takes to be a good teacher.

Shulman (1986) explained the process for which research must be conducted. One of the first processes is narrowing the scope and concentrating on the problem. Because it is necessary for simplification of classroom teaching, investigators must ignore a vital entity: the subject matter. Subject matter is occasionally entered into the research but only as a context variable- a control characteristic for subdividing data sets by content categories (e.g., when teaching fifth grade language arts, the following teacher behaviors were correlated with outcomes); however, where is the focus on content. Shulman (1986) identifies this absence as the "missing paradigm" and argues that this practice is both serious for policymakers and for research. Shulman describes the profession of teaching and what it means to be a teacher from a medieval university's perspective. He used the example of how today we distinguish our highest levels of educational attainment, a Master's degree and Doctoral degree, with both of these the premise is that we are a master of the knowledge of our craft and that the doctoral degree is a practitioner in the field. With both titles, it is assumed that not only does the individual know the content but that he or she is the master of delivery of the content. It is not suggested that content knowledge is more important than pedagogy nor is it suggested that pedagogy is more important that content knowledge. There must be an even distribution of the two. Teachers must be proficient in three distinct categories of knowledge: subject matter content, pedagogical content knowledge, and curriculum content knowledge. Content knowledge is the amount of organization of knowledge in the mind of the teacher. Pedagogical content knowledge is going beyond knowledge of subject matter for

teaching; it is also making the learning of a difficult topic easy to understand. It is also

the ability to clear up misconceptions on a topic. Curriculum knowledge is the vertical

alignment of the standard or competency. Knowing when the content is material

cognitively able to be comprehended by students (Stronge, 2002).

If teachers are to be perceived as having pedagogical content knowledge, they

must be able to comprehend their content; ensure that students understand the purpose,

subject matter structures, and ideas that are within and outside the discipline; ensure that

students can transform the information if they have truly learned the objective; create

instructions to the characteristics whether it is learning styles or interest; moreover,

tailoring the adaptations to fit individualized instruction. Teachers must be willing to

reflect upon their instruction (Wiggins & McTighe, 2005).

Turner-Bissett (1999) reported that there is a significant problem with the current

regulations for new teacher programs. Government control over education has caused a

great decline in the rigor required for teaching. The researchers address three themes that

deal with the knowledge bases of the expert teacher. The themes are the subject

knowledge base of teachers, the preparation programs at the institutes of higher learning,

and the identification of specific competencies deemed necessary for teaching. Turner-

Bissett (1999) explains a model for knowledge bases for teaching. This model suggests

that true teaching is acquired through the model developed by Shulman (1986) it is more

thorough in nature. The model includes the following themes: substantive knowledge,

syntactical knowledge, beliefs about the subject, curriculum knowledge, general

pedagogical knowledge, knowledge of models of teaching, models of learners (cognitive

and empirical), knowledge of self, knowledge of educational contexts, and knowledge of

educational end. It is suggested that teacher education programs should address these themes when preparing teachers to enter into the profession. Substantive knowledge, syntactical knowledge, and beliefs about the subject are all parts of subject matter knowledge. Substantive knowledge is the facts of a discipline, syntactical knowledge is the ways in which propositional knowledge has been generated and established; this type of knowledge is the way in which an individual makes meaning of the knowledge learned. The beliefs about the subject determine what teachers will deem as important for them to teach about the discipline. Curriculum knowledge requires teacher to go beyond their immediate resources so that the lesson becomes real to the individual students (Turner-Bissett, 1999). This type of knowledge brings about an abstract look at the content. General pedagogical knowledge is general knowledge about teaching principles. It is the broad classroom principles and strategies of classroom management. Knowledge/models of teaching are the influences of affecting what teachers do and how they do it. Knowledge of learners is the teaching ability to know and understand their customers. The teacher is able to first develop a rapport with the students that will set the stage of an ultimate learning experience (Turner-Bissett, 1999).

It has been a custom of educators to study teachers rather than teaching practices. Teachers' measures of success, or the lack thereof, were often determined by teachers' age, years of experience, degrees, and membership in professional organizations. However, Rice and Taylor (2000) suggest that researchers are now taking note of student achievement as it relates to behaviors or skills, techniques, methods, and strategies used by teachers that help determine a more meaningful learning experience. Effective

teaching is a contemporary of student achievement more when teachers employ systematic teaching procedures (Kemp & Hall, 1992).

Although Depth of Knowledge holds a specific title, the term depth of knowledge holds meaningful significance. It was defined by Shulman (1987) as pedagogical content knowledge that identifies the distinctive bodies of knowledge and teaching. Pedagogical content knowledge represents the blending of content and pedagogy into an understanding of how particular topics, problems or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. Teachers must be able to answer those critical questions that require students to think beyond the acquisition. We assume teachers come equipped with the knowledge that they are suppose to teach; however, stakeholders are finding more and more that teachers do not know the content and are only teaching acquisition knowledge. Wiggins and McTighe (2005) suggest that teachers must be able to take the content knowledge and understand it in a manner that they can adjust their strategies; therefore, students are able to understand the most difficult concepts. Teachers may encounter flawed textbooks or confused students; therefore, they must be able to address questions in a manner that all students can learn. He or she must employ content expertise to generate new explanations, representations, and clarifications. The concentration in today's educational system has been the delivery of the content. While delivery of the content is very important, the delivery must be built upon a foundation of acquired knowledge, content knowledge. Shulman (1986) uses an example of an 1875 California state board of examination for elementary teaching certification. The types of questions asked on this test were content knowledge questions at a depth of knowledge level that required

teachers not just to regurgitate information but to actually apply the information. An example of this type of question is "Define specific gravity or why may heavy stones be lifted in water when on land, they can be scarcely moved?" Although this test asked a few questions concerning pedagogical practices only 50 of the 1000 points were dedicated to pedagogical practices. One must ask why has the depth of knowledge decreased in recent years (Shulman, 1986)?

Demographics, Graduation, Employment and Student Achievement

According to research, socioeconomic status has a profound effect on the achievement of students in the public school setting. A study was conducted by Susanna Hooper (2007) to test whether there was a significant difference in students who were from economically-disadvantaged homes as compared to those students who were from economically-stable homes. Ruth found that there was a significant difference in the two types of students and meeting and Texas Assessment of Knowledge and passing the standards along with graduation and preparation for higher education. Graduation rate was a factor because in some cases students from socially- and economically-disadvantaged homes have potentially more initiative to abuse drugs, be exposed to violent acts and act on the violence, and the female students were exposed more to premarital sex resulting in pregnancy. While these factors can influence other groups the socially- and economically-disadvantaged students are more apt to be exposed to these behaviors through their environment (Hooper, 2007). However, far too often educators blame parental involvement and poverty as reasons for students' lack of success in school. Although these two factors play a role, the major factor that may contribute to

lack of students' success is a lack of a qualified teacher to instruct those students as proven by the 90/90/90 study conducted by Douglas Reeves (2000).

Reeves conducted a study identifying the 90/90/90: schools. These schools were 90% combined minority, at least 90% free or reduced lunch qualified students, and at least 90% successful on standardized assessments. These schools would appear to be doing something unexpected that is leading to a high level of student achievement under challenging circumstances (Reeves, 2000). Reeves claimed that one reason the research was so successful the administration evaluated instructional practices and strategies throughout each of the schools involved in the study. Reeves also described characteristics found in the 90/90/90 schools. The characteristics include a focus on academic achievement, clear curriculum choices, frequent assessment of student progress and multiple opportunities for improvement, an emphasis on nonfiction writing, and collaborative scoring of student work. The curriculum choices of the 90/90/90 schools proved to be advantageous. Teachers were no longer allowed to just "cover the content," and it was made clear that reading, writing, and math were the emphasis and with that emphasis Reeves (2002) stated that surprisingly science scores were phenomenal.

Barak Rosenshine (1997) discussed the work of two researchers, Adrienne Alton-Lee and Graham Nutall whose work is considered as the pioneer research that focus on students and not teachers. The researchers studied 10-12 year old students to determine if the way students were instructed affected the success of their achievement. Rosenshine (1997) states that the researchers, by use of video cameras, microphones, and interviews, were able to describe the way students learned by observing the content and activities that students were exposed to within the classroom setting. The researchers were able to

develop a test that was given at the end of each unit. The test allowed the researchers as stated by Rosenshine to understand the students better because each test item could be related to the students' experiences in the classroom while content was being taught. Although the researchers designed the tests, the teachers designed the units.

The researchers as stated by Rosenshine (1997) were also interested to find out how and when individual students learned or failed to learn specific content form their classroom experiences. The results revealed that while the learning process is the same for all students, low ability students are prevented from using opportunities, do not make use of opportunities, or do not create as many opportunities as their peers who do receive and make use of knowledge acquired in previous learning experiences. Rosenshine (1997) conceded that low achieving students had less prior knowledge, which in turned made learning new concepts more difficult due to the lack of prior knowledge. These findings were not restricted to one gender, ethnicity, or social economic status.

Accountability is a willingness to accept responsibility for one's own action or lack thereof (Merriam Webster, 1995). When middle school students become so unsuccessful, they often times drop out, however, A study conducted by Rumberger and Palardy (2005) investigated the relationships among several different indicators of high school performance: test scores, dropout rates, transfer rates, and attrition rates. The sample consisted of 14,199 students who took part in the National Education Longitudinal Survey of 1988. The results indicated that schools that were effective in promoting student learning (growth in achievement) were not necessarily effective in reducing dropout or transfer rates; moreover, after control for student inputs, high schools exhibited little variability in dropout rates but considerable variation in transfer rates. In

addition, characteristics of schools that contributed to performance in one area often times does not contribute to performance in another. Given these findings, the authors suggest that, along with test scores, dropout and transfer rates should be used to judge school performance (Rumberger & Palardy, 2005).

Teacher Perception of Student Achievement

The Expectancy Value theory could play a part in the disparity of the results of the test due to the expectation of the students to attain their goal. Boatwright (1999) attempted to explain the Expectancy Value Theory. When first introduced, The Expectancy Value theory, explained by Atkinson (1964), emphasized that the expectation of attaining a goal and the importance the individual attached to that goal influenced the attainment of the goal. In other words, if teachers perceive that students can achieve then they will create work that meaningful and requires them to achieve. According to Expectancy Value theory, behavior is a function of the expectancies one has and the value of the goal in which one is working towards. Such an approach predicts that when more than one behavior is possible, the behavior chosen will be the one with the largest combination of expected success and value. Expectancy Value theory holds that people are goal-oriented beings. The behaviors people perform in response to their beliefs and values are undertaken to achieve an expected result. Although the Expectancy Value theory can be used to explain central concepts in uses and gratification research, there are other factors that influence the process. For example, the social and psychological origins of needs, which give rise to motives for behavior, which may be guided by beliefs, values, and social circumstances into seeking various gratifications through media consumption and other non-media behaviors. Knowledge of self is one of the finding by

Turner-Bissett (1999). The researcher indicated that a teacher must have a high self esteem in order to be successful in the classroom. If teachers are unsure of their content as well as pedagogy, they are bound to fail and ultimately their students will fail with them. Turner-Bissett also found that knowledge of self was an important requisite for reflection at the higher levels.

The theory that supports knowledge of self, which is the reflection of teachers' attitudes towards their students, is the Expectancy Value theory that suggests people orient themselves to the world according to their expectations (beliefs) and evaluations. Utilizing this approach, behavior, behavioral intentions, or attitudes are seen as a function of the expectancy (or belief) which is the perceived probability that an object possesses a particular attribute or that a behavior will have a particular consequence; and the evaluation which is the degree of affect, positive or negative, toward an attribute or behavioral outcome (Fishbein & Aizen, 1972).

Behaviorism, associated with B. F. Skinner, can also be used as theoretical framework for this study. Behaviorism is manipulative. It seeks not merely to understand human behavior, but to predict and control it. From his theories, Skinner developed the idea of "shaping." By controlling rewards and punishments, you can shape the behavior of another person (Shaw, 1903).

Ferguson (2003) provided evidence that teachers' perceptions, expectations, and behaviors have a profound effect on students' beliefs, behaviors, and work habits. The perception of teachers and students could possibly enhance or destroy a child's academic achievement. In addition, findings from this study indicate that teachers' perceptions

support change in the State assessment system combining traditional and nontraditional formats. Teachers' perception of their instruction and the actual instruction may be very different.

Teachers and students behave according to their stimuli. The perception of teachers on their students' achievement sometimes has a profound effect on the success of the students in that class. Therefore, it is vital to any educational system to know and understand that teachers' perceptions and behaviors affect children's lives whether directly or indirectly. As a result, teachers must be accountable to their students, not only socially and emotionally, but most importantly academically. If a teacher believes he or she will receive recognition or negative repercussion, he or she will improve her performance in the classroom so that the students achieve academic excellence on standardized tests. Though the perception may be that standardized testing is not good for the individual child, if teachers will enhance their performance they can inadvertently affect the performance on standardized test of their students. Students need to know that their teachers believe in them and understand them in order for the student to be successful in the classroom.

Highly Qualified Teachers for Minority Students

Having experienced teachers with at least five years of experience makes a difference in students' achievement. Minority and low-income students are more likely to be taught by teachers with three or fewer years of experience and to be in schools with higher teacher turnover. Students are also exposed to less experienced teaching when substitutes must frequently fill in for absentee teachers. Eleven percent of 12th grade students are in schools in which 6-10 percent of the teachers are absent on an average

day; for minorities, the rate is more than double the rate for White students (Barton, 2004). McMillion-Nelson (2004) examined whether student achievement improved when highly qualified teachers tutored students. The study revealed that teacher attitudes of students' achievement as well as highly qualified status of the teacher had an impact on the achievement of the students. Researchers have also found that teacher preparation affects student achievement. Students in high-poverty and high-minority schools are much more likely to be taught by out-of-field teachers. School districts cannot find enough qualified teachers at the price they are willing to pay, so they tend to resort to hiring individuals who are unqualified and insist on calling them teachers (Wise, 1999).

<div align="center">Student Achievement and Data-Driven Decision Making</div>

Data driven decision making is not new to school districts; however, the principle used in the past has been for districts to assess on student performance; the information was not used to make sound decisions that would help teachers assist students. Today's concept behind data driven decision making is to help educators make better decisions concerning the curriculum and instruction given to students. Districts use the results to help determine better ways to implement the different learning styles of students with the intent of developing individualized lessons (Johnson, 1997); however, in some instances, districts do not know what to do with the data attained. The districts realize that interventions must take place, but they fail to realize how to align those interventions (Data-Driven Decision Making, 2002).

To compile data, a new process called a Progress Monitoring System is used. Progress monitoring is a set of techniques for assessing student performance on a regular and frequent basis. It can be an essential and integral part of an inclusive standards based

assessment and accountability system. With this new process, schools as well as school districts can monitor students' progress to ensure that the students are enriched when they are excelling as well as remediate when a problem is found. This process helps students meet the proficiency standards set forth by the State and the federal government. Using a progress monitoring system helps ensure that students are progressing and reaching their highest achievement level (Quenemoen, Thurlow, Moen, Thompson, & Morse, 2003).

CHAPTER III

METHODOLOGY

Introduction

Due to the State's attempt to increase rigor and relevance in all classrooms, the issue of teacher's depth of knowledge in the middle grades has become a major concern. The rationale is that many teachers are not teaching at an increased depth of knowledge, nor are they making the lessons relevant to real world experiences that lead to understanding and ultimately the transferring of knowledge (McTighe & Wiggins, 2004).

The intent of this research was to identify teachers who have been successful (high performing teachers) and not successful (low performing teachers) in engaging students in the learning process in spite of the rigorous demands placed upon them through new criterion reference testing practices. The instructional strategies that were found in high performing teachers' classes as well as those strategies that were identified in low performing teachers' classes were reported. The intent of including instructional strategies in classes is for all students to have an opportunity to be enriched by teachers who not only understands his or her content but also is able to relay the information to students in a manner that is conducive to immediate and ultimately lifelong learning. Ineffective strategies in low performing teachers' classes identified from the observations were reported in an effort to evaluate and monitor teachers who may exemplify the traits of an ineffective teacher due to his or her lack of content knowledge. This chapter describes the research design, study participants, instrumentation, research procedures, limitations of the study, and data analysis.

The intent of this study was to identify low performing teachers (acquisition teachers) and high performing teachers (depth of knowledge teachers) and their instructional strategies that impact student achievement. In this study two types of teachers were considered. Teachers who teach for depth (depth of knowledge teachers) and teachers who teach at the acquisition level (acquisition teachers). Depth of knowledge teachers teach all students according to best practices which include teachers understanding their subject matter deeply and flexibly so they can help students create useful cognitive maps, relating one idea to another, and addressing misconceptions. Depth of knowledge teacher understands that having a foundation for pedagogical content knowledge enables them to make ideas accessible to their students (Shulman, 1987).

The researcher first requested permission from the district's superintendent to speak with the administrators and to have access to achievement scores of students. The researcher was granted permission by the superintendent to conduct the study (Appendix A). The researcher also requested permission to conduct research from the university's Internal Review Board and was granted permission (Appendix B).

Research Design

The study used an observational, descriptive, causal comparative research design in a public school district. The method of research in this study was both quantitative and qualitative. The primary design of this study was a correlation t-test. Qualitative research design is based on the premise that individuals socially construct their world by interacting with society (Merriam, 2002). There are specific types of qualitative research based on theories. The type of theoretical research used in this study utilized researcher

as the primary instrument. In this type of theory, the researcher's primary instrument of data collection and analysis of that data was inductive.

The design of the research was conducted in a manner in which students were not directly involved nor identified; moreover, the grade level and their assessment scores were used in the analysis to classify teachers as acquisition or depth of knowledge teachers. The independent variables in the study were the State Criterion Test Scores of students; and the dependent variables were the instructional strategies used in the classrooms. The school district used in this study was made up of mixed ethnic groups. Seven of the eight schools in this district are eligible for free and reduced lunch services through the federal government's Title I program. The district has had an influx of Spanish speaking Americans; therefore, the racial makeup in the research was that of African Americans, Caucasians, and Latinos.

<div align="center">Participants</div>

The participants in the study were middle grades teachers (n = 67) who participated in the study by completing the self perception survey and (N=22) of those teachers also agreed to be observed in the classroom. All participants met the State's requirements for teaching, held a valid teaching certificate, were considered highly qualified to teach their specific content, and had at least two years teaching experience.

<div align="center">Instrumentation</div>

The researcher created and adopted two instruments for this study from existing instruments used for assessment in the school district. The first instrument was a survey instrument with questions and statements created to assess teachers' level of agreement to

perceptions and practices related to instructional strategies. Each question/statement was based on a Likert-type scale ranging from strongly agree to disagree (Appendix C).

The original items included in the study were tested for reliability and validity by the school district; however, a pilot study was also conducted of the adapted instruments for this study. The pilot study revealed that the instrument was reliable and valid as the three individuals who participated in the pilot study expressed no concerns and stated questions were clear and addressed topics found within the study. While these individuals, who participated in the pilot, could have also participated in the study, they were excluded because of their involvement with the pilot.

The second instrument, the classroom observation survey was also tested for inter-rater reliability. The classroom observation survey was developed for the researcher's use to assess teachers' facilitation of the use of instructional strategies in the class setting. This survey included a list of instructional strategies based on a Likert-type scale that ranged from strongly agree to disagree (Appendix D). The classroom observation instrument allowed the researcher to determine whether or not the teachers accurately depicted themselves as depth of knowledge teachers or acquisition teachers.

The self perception survey and the observation instrument had a one-to-one correlation for questions 1-14; however, questions 15-19 on the teacher self-perception survey was to determine innate thoughts of the teacher that included the Expectancy Value Theory (Fishbien & Aizen, 1972). Questions 12-14 on the classroom observation instrument were included to determine abstract details within the classroom. Abstract details are those that could only be observed from someone who had pedagogical content

knowledge. Observer notes were also included to determine any unusual occurrences that took place during the observation. This information was written in a qualitative format.

Procedure

Prior to collecting data for this study, the researcher requested permission to conduct this study from the University's Human Subjects Review Committee (Appendix B). The researcher also requested permission from the school district's superintendent prior to disseminating surveys or conducting classroom observations (Appendix A). The data was collected in the fall of 2008 over a nine-week period. Each visit lasted approximately fifteen to twenty minutes. During each visit the researcher evaluated the teachers using the observation instrument. The researcher has been trained and has facilitated the use of the observation survey through previous professional development as an educator.

The researcher began this study, by soliciting participants for the self perception survey. The researcher visited teacher meetings over a period of nine weeks explaining the study and its significance.   The teachers were asked to complete the self perception survey and place the survey in a sealed envelope upon completion since the survey contained the participants' names. Each participant was given a letter that explained the purpose of the research and how the researcher planned to acquire information. It was the discretion of each teacher of whether or not he or she participated. After collecting all self perception surveys, the researcher assigned a number to each self perception survey. The researcher then obtained the 2006-2007 scores and analyzed each participant's scores to determine if their students scored in the advanced and proficient categories or the basic and minimal categories. This information helped in deciphering which teachers were

initially considered acquisition teachers and depth of knowledge teachers. If the teacher answers strongly agree or agree to all questions on the self-perception survey and 95% of her students scored in the proficient and advanced categories, she was initially considered a depth of knowledge teacher. If the teachers answered disagree to any of the questions or 10% or more of her students scored in the basic or minimal categories, she was considered an acquisition teacher.

The researcher reviewed the mean scores by teacher to determine whether or not 95% of the students scored in the proficient or advanced categories, or whether 10% or more of the students from each teacher's class scored in the minimal or basic categories. Teachers were then placed into two distinct categories: depth of knowledge teachers and acquisition teachers.

Next, each teacher was asked to consent to being observed. For the participants who consented to be observed by the researcher, the researcher observed teachers in their classroom environment to identify instructional strategies associated with their identity as acquisition or depth of knowledge teachers. Acquisition teachers were defined as teachers who only taught students general information without a rationale for learning. This method of teaching only allowed students limited exposure to the content as opposed to identifying the underlying reason for learning the content and transferring that information to other subject areas which could ultimately lead to lifelong learning. Depth of knowledge teachers were identified as those whose teaching allowed students to transfer the material learned from one content area to the next and beyond the classroom. Students who received instruction from depth of knowledge teachers had a true understanding of the concepts being taught and why it was being taught. During the

observations the researcher observed and recorded what she observed on the classroom observation survey. The results of the observation were then analyzed with the results of self-surveys and the correlation of the two were assessed.

Limitations

When interpreting the results of this study, the following limitations were considered:

1. The presence of the observer in the classroom could potentially affect (both negatively and positively) the teacher's ability to adhere to the expected strategies of teaching.

2. The researcher (observer) in this study is a former curriculum specialist of the participating district and frequently conducted observations of teachers. This fact could have affected the teacher's ability to adhere to the expected instructional strategies needed to deliver the lesson at a depth of knowledge level that reached students' cognitive level required for transferring skills.

Data Analysis

Quantitative

Descriptive statistics included means and standard deviations for teachers' responses to the self perception questions on the survey and frequencies of the demographic information. Independent samples t-test were run to test the hypothesis; however, there was insufficient evident to test it due to the lack of consent from teachers to participate in the study's observations.

Qualitative

      Qualitative constructs were used to identify key factors from the researcher's notes section of the observation instrument. The researcher analyzed the data collected from the observation instrument as well as from the notes section of the observation instrument to summarize key factors associated with the perceptions and instructional strategies of the teachers in this study.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to determine whether there was a statistically significant relationship between teachers' instructional practices, their perception of their instructional practices, and the academic achievement of the students with whom they teach. The goal of this investigation was to give districts across the United States an idea of what instructional strategies are used in classrooms that are advantageous to student achievement, and if teachers' perception of those goals are actually what is being produced in the classroom. The purpose of this chapter was to present an analysis of data collected from this investigation.

Descriptive Statistics

A total of 67 participants took part in the self perception portion of this study; however, there were only 22 (32.8%) participants in the observation portion of this study. All participants completed the self perception survey and the researcher conducted the observations using an instrument that paralleled the self perception survey. The self perception survey asked participants self perception questions about their teaching as well as demographic information such as the number of years teaching experience, the number of years in teaching at the current grade, the number of years teaching at their current school, and the highest degree attained by the participants (Table 1). Participants were also asked to identify whether or not they were highly qualified in a specific subject area (Table 2). The demographic information provided background information about participants and provided insight to determine why some participants may have responded to various self perception questions in a particular manner (Table 3).

Table 1

Participants Years of Experience

Descriptive Statistics	N	Min	Max	Mean	Standard Deviation
1. Number of Years Experience	67	0	37	12.49	9.56
2. Number of years participants have been teaching current grade	65	0	30	5.34	5.55
3. Number of years participants have been in current school	64	0	32	4.97	5.57

The number of participants answering the questions varied slightly and may have been due to the participants overlooking or choosing not to answer certain questions. Sixty-seven participants gave provided their years of teaching experience with the mean being 12.49 years, whereas only sixty five participants gave a distinct number of years for teaching in their current grade level. Participants responded that they have been educators for an average of 5.34 years at their current grade level. Only 64 (95.0%) participants answered the question of how many years has the participant been in their current school with the mean being 4.97 years. The standard deviations were quite high for all three categories and are also listed in Table 1.

Table 2

Participants Educational Degrees

Degrees Held	Frequency	%
1. Bachelors	21	42.9%
2. Masters	27	55.1%
3. Specialist	1	2.0%

All participants had at least a Bachelors degree with the majority of the participants actually holding a Masters degree. Only one participant had a degree above a Masters degree. It is important to note that the degree attained was not specified; therefore, the participants could have held a degree outside the area they were assigned to teach.

Table 3

Teacher Content Area Certifications

Highly Qualified Subject Area	N	%
1. English	9	17.6%
2. Math	7	13.7%
3. Science	3	5.9%
4. Social Studies	1	2.0%
5. Special Education	7	13.7%
6. Reading	15	29.4%
7. More than one Area	7	13.7%

Fifteen (29.4%) of the participants answered that they are highly qualified to teach reading. This category had the largest percentage; however, those individuals who had a degree in science had the least percentage.

The frequencies for both the perception surveys and the observation surveys are listed below for all participants. The results are indicated in Tables 4 and 5. The participants could respond to each survey statement based upon a Likert scale range of strongly agree (1), agree (2), or disagree (3).

Table 4

Self-Perception Survey Results

Question	Strongly Agree	Agree	Disagree
1. Students actively involved in lesson	32 (47.8%)	34 (50.7%)	1 (1.5%)
2. Comfort level with content	26 (38.8%)	40 (59.7%)	1 (1.5%)
3. Teacher relates real world experiences	40 (59.7%)	26 (38.8%)	1 (1.5%)
4. Teacher assess formally/informally daily	39 (58.2%)	26 (38.8%)	2 (3.0%)
5. Teacher utilizes teachable moments	54 (80.6%)	11 (16.4%)	2 (3.0%)
6. Is the teacher distracted by the presence of an observer	22 (33.8%)	39 (60.0%)	4 (6.0%)
7. Teacher perceive that the observers recognizes organization in the classroom	28 (41.8%)	38 (56.7%)	1 (1.5%)
8. Does the teacher perceive that the observer immediately understands the lesson	25 (37.3%)	41 (61.2%)	1 (1.5%)
9. Believes that all students can learn	57 (85.1%)	10 (14.9%)	4 (6.0%)
10. Teacher understand how to differentiate learning for all students	25 (37.3%)	38 (56.7%)	1 (1.5%)
11. Teachers consider themselves instructionally rigorous	36(55.4%)	28 (43.1%)	1 (1.5%)
12. Teachers consider themselves mentally organized	36 (53.7%)	30 (44.8%)	
13. Teachers are aware of Madeline Hunter's Teaching Model	14 (20.9%)	22 (32.8%)	31(46.3%)

Table 5

Observation Survey Results

Question	Strongly Observed	Observed	Not Observed
1. Observed students being actively involved in the lesson	3 (15.8%)	13 (68.4%)	3 (15.8%)
2. Observed teachers at a comfort level with content to answer in depth questions from students	4 (21.1%)	13 (63.2%)	3 (15.8%)
3. Objectives and lessons plans are in-depth and in plain view of the teacher, students and observer	6 (33.3%)	9 (50.0%)	3 (16.7%)
4. Observed that the lesson plans and objectives match instruction	3 (15.8%)	12 (63.2%)	4 (21.1%)
5. Observed that the teacher had a daily structure and routine	3 (15.8%)	12 (63.2%)	4 (21.1%)
6. Does the teacher differentiate instruction on a ongoing basis	5 (26.3%)	14 (73.7%)	
7. Teacher formatively assess on a daily basis	1 (5.3%)	11 (57.9)	7 (38.8%)
8. Is the classroom setup conducive to a learning environment	5 (29.4%)	9 (52.9%)	3 (17.6%)
9. Teacher relate learning to real world experiences	5 (26.3%)	8 (42.1%)	6 (31.6%)
10. Does the teacher assess formally and informally on a daily basis	3 (16.7%)	13 (72.2%)	2 (11.1%)
11. The teacher utilizes teachable moments	3 (15.8%)	9 (47.4%)	7 (36.8%)
12. Teacher distracted by the presence of an observer	1 (5.3%)	18 (94.7%)	
13. Observer can see that the teacher is organized	7 (38.9%)	5 (27.8%)	6 (33.3%)
14. Observer instantly understands the lesson upon arrival to the room	7 (38.9%)	7 (38.9%)	4 (22.2%)

Part two of the investigation consisted of the analysis of test scores to categorize each participant as an acquisition teacher or the depth of knowledge teacher. Acquisition teaching only allows students a glimpse of the content as opposed to identifying the underlying reason for learning the content and transferring that information to other content areas and ultimately lifelong learning.

After analyzing test scores, only 38 teachers qualified for either the depth of knowledge or acquisition category because the other teachers were either new to the district with less than two years or they taught in subjects that were not tested by state criterion reference tests. After analyzing participants test scores, each participant was placed into one of two categories: acquisition or depth of knowledge. There were only three teachers who were considered depth of knowledge teachers based solely on the test score. There were 35 teachers who were considered acquisition teachers based solely on test analysis. Due to the discrepancy in the number of depth of knowledge teachers as opposed to the acquisition teachers the hypothesis could not be tested.

There were three research questions addressed in this study. The first question examined the behaviors of teachers who teach for depth as identified through observation. The teachers who were categorized as depth of knowledge teachers were only in the subject area of math. The teachers had more than 10% of their students scoring in the basic and minimal range in the area of language arts and these teachers were not considered as depth of knowledge through test analysis because their students did not score above 95% in both categories of language and math on the State Criterion Reference Test.

Table 6

Depth of Knowledge Teacher's Observation Results

Question	Strongly Observed	Observed	Not Observed
1. Students actively involved in lesson	3 (100.0%)		
2. Teacher is able to answer in depth questions	2 (66.6%)	1 (33.3%)	
3. Lessons plans are in-depth and in view	1 (33.3%)	1 (33.3%)	1 (33.3%)
4. Lesson plans and objectives match instruction	3 (100.0%)		
5. Does the teacher maintain a daily instruction routine (clear sequence of events)?	3 (100.0%)		
6. Does the teacher differentiate instruction on an ongoing basis?		1 (33.3%)	
7. Does the teacher formatively assess on a daily basis?	1 (33.3%)	2 (66.6%)	
8. Is the classroom setup conducive to a learning environment?	1 (33.3%)	1 (33.3%)	
9. Does the teacher relate learning to real world experiences?	1 (33.3%)	2 (66.6%)	
10. Does the teacher assess formally and informally on a daily basis?	1 (33.3%)	2 (66.6%)	
11. Does the teacher utilize teachable moments?	1(33.3%)	1 (33.3%)	
12. Is the teacher distracted by the presence of an observer?		3 (100%)	
13. Did the teacher offer immediate responses to learner's questions?	2 (66.6%)	1 (33.3%)	
14. Is there a clear organization of knowledge of content by the teacher?	2 (66.6%)	1 (33.3%)	

Teachers had the option of allowing the researcher to observe or not observe after completion of the perception survey. As a result, there were only three teachers who were considered depth of knowledge teachers; however, the common thread among the three depth of knowledge teachers was math.

The observer strongly agreed that all three math teachers had the students actively involved in the lesson they were teaching. The teachers were able to answer in depth questions provided by the students. There was some discrepancy with the location of the lesson plans. With each of the three teachers observed, the answers varied on whether or not the plans were in plain view; however, with all three math depth of knowledge teachers, the lesson plans matched the objective being taught in the classroom and the teachers maintained a clear sequence of events throughout the lessons. Two of the three teachers had a clear indication of differentiated learning although all three had some form of small group instruction. All three teachers did some form of informal assessment whether it was orally or written. One of the classrooms was not conducive to learning due to the size of the room. There were more students than should have been in a room that size, however, the teacher was still able to teach the objective. There was evidence that the teachers assessed students' attainment of the concepts covered during the lesson as well as evidence that the teachers utilized teachable moments by stopping when students had questions or expounding on a questions posed by the students instead of putting the question off until a later date or time. None of the teachers seemed distracted by the presence of the researcher. The overwhelming dynamic of the each classroom was that

there was a clear organization of knowledge presented by each teacher that was considered a depth of knowledge teacher in the area of mathematics.

The second research question was examined to determine what were the behaviors of teachers who were categorized as acquisition teachers identified through observation. Table 7 displays results of the observations of those teachers who were considered to be acquisition teachers due to the percentage of students who scored basic or minimal in the areas of language arts and math on the State Criterion Reference test.

Some of the lessons observed in the classes included students reading Accelerated Reader books, an online program from the Renaissance Learning Corporation which specializes in the enhancement of reading abilities and working at academic centers which incorporated engagement concepts such as reading a book on a rug. Some methods of engagement included teachers using overhead projectors for teaching the cardiovascular system while students were taking notes. In other observations of classrooms, the teachers were observed and categorized as acquisition teachers. The students were not actively engaged in learning and there seemed to be a disconnect between the teacher and students. Classroom management was unorganized and students were not engaged. Students were talking while the teachers was instructing. The teacher had to repeat instructions on several occasions. Some students had their backs turned from the teacher. The teacher repeatedly hollered at students to settle down and get quiet to no avail. The lesson consisted of the teacher using an overhead projector to write notes and dictate those notes to the students.

It is the conclusion of the researcher that in classrooms in which the teacher was categorized as an acquisition teacher, students were not engaged in the lesson attempted to be taught.

One depth of knowledge teacher observed by the researcher gave students an opportunity to look at examples of problem areas. The teacher showed students step-by-step instructions and directions and then allowed students to work the problems out. There was nothing significantly different about the lesson itself except the teacher had created a dialogue with students in which they actually understood. The teacher did not talk at the students but to the students. Students who were not participating in the lesson were redirected to focus on the lesson. There was an introduction to the lesson, and it was pointed out at the review portion of the lesson. The teacher clearly understood the content. As the students asked engaging questions, the teacher was able to answer those questions in a clear and consistent manner.

Table 7

Acquisition Teacher's Observation Instrument

Question	Strongly Observed	Observed	Not Observed
1. Students actively involved in lesson		15 (79.0%)	4 (21.0%)
2. Is the teacher able to answer in depth questions?	2 (10.5%)	13 (68.0%)	4 (21.0%)
3. Does the teacher differentiate instruction on an ongoing basis?		4 (21.0%)	15 (79.0%)
4. Does the teacher formatively assess on a daily basis?		9 (47.0%)	10 (52.0%)
5. Is the classroom setup conducive to a learning environment?	4 (21.0%)	9 (47.0%)	6 (31.5%)
6. Does the teacher relate learning to real world experiences?	4 (21.0%)	8 (42.0%)	7 (36.8%)
7. Does the teacher assess formally and informally on a daily basis?	2 (10.5%)	14 (73.6%)	3 (16.0%)
8. Does the teacher utilize teachable moments?	2 (10.5%)	8 (42.0%)	9 (47.0%)
9. Is the teacher distracted by the presence of an observer?	1 (5.26%)	1 (5.26%)	17 (89.0%)
10. Did the teacher offer immediate responses to learner's questions?	6 (31.5%)	6 (31.5%)	7 (37.0%)
11. Is there a clear organization of knowledge of content by the teacher?	5 (26.0%)	8 (42.0%)	6 (31.5%)

There were nineteen teachers who were considered acquisition teachers observed by the researcher. The results of the observations showed that there are common traits among those teachers who were considered acquisition teachers by the researcher; the teachers had more than 10% of their students scoring in the basic or minimal range on the State Criterion Reference Test.

None of the acquisition teachers were strongly considered by the researcher to have the students actively engaged in their lessons; however, the researcher did observe that 15 (78.9%) of the 19 teachers observed had some engagement by their students. Only 21% of those teachers lacked engagement of their students as an entire class or throughout the entire lesson. The researcher agreed that 78.5% of those acquisition teachers observed were able to answer to some degree in depth questions posed by their students; however, the researcher only agreed that 26% (five participants) were able to answer those in depth questions to a high degree. Fifteen (78.0%) of the acquisition teachers had their objectives in plain view of the observer; however, the researcher only strongly agreed that 16% of the acquisition teachers had objectives that truly matched the instruction. The researcher agreed that 52.0% of the teachers had some consistency in the objectives posted and the lessons being taught. The researcher noted that 74.0% of the acquisition teachers had a clear sequence of events throughout the instruction although only 21% of the teachers differentiated instruction for their learners. The majority of the lessons were taught in a group setting. The researcher is uncertain as to whether or not there was adequate evidence that the acquisition teachers informally assessed their students on an ongoing basis. Since most classrooms were teacher centered, the students spoke very little and the students were seldom asked to record while the teacher

instructed. Only 31.5% of the acquisition teacher's classrooms were not conducive to learning. Of the 31.5% observed, the most common factor was the desk arrangement. The teachers had the students lined in rows or the classroom was not inviting with wall décor for instructional use. Twelve (63.0%) of the acquisition teachers related their lessons to real world experiences. Only 52.5% of the acquisition teachers utilized teachable moments meaning when students asked the teacher questions during discussion, the teacher offered immediate responses and allowed the discussion to deter from the objective to deepen the lesson; however, the teachers did offer immediate responses to questions without allowing the discussion to take off into a different direction. The observer noted that a third party in the room did not distract 89.0% of the acquisition teachers. The observer noted that there was clear organization of knowledge as it pertains to content delivery by the acquisition teachers.

The third research question examined if there were differences between the two groups of teachers' instructional strategies? The data collected from the observation portion of this study was inadequate to answer this research question because there were not enough participants who were considered depth of knowledge to make a statistically significant observation. However, a study was conducted to determine the observation versus the acquisition teachers' responses to determine if there was a correlation. The cross tab results are found in Table 8. Although not listed in the initial research questions, a two way contingency table analysis was used using crosstabs. Congruency existed between perceptions vs. observations using the fourteen observation questions used by the researcher for acquisition teachers only.

Classroom observation instrument included a question that examined if the lesson observed was efficient, effective, and relevant. While observing one acquisition teacher based upon the criteria, the teacher did not use any type of individualized instruction. The teacher simply discussed questions and then told students what they needed to finish in their packets and turn in their packets. The teacher would then review each writing packet. The class discussion was unorganized as if the teacher was not prepared to instruct the class. The objective of the lesson was presented as persuasive writing which could have been turned into a very real world experience for students, yet the teacher did not utilize the opportunity to engage students and gave students busy work to complete to master the objectives of the lesson.

The researcher observed some teachers attempting to be depth of knowledge teachers. On a visit to a fifth grade self contained class, it was observed that the teacher was attempting to teach students how to multiply fractions. The objective was written on the board and the teacher followed the steps to teach the lesson; however, there were several distractions in the classroom. There were at least four adults in the classroom assisting students, some students seemed helpless and constantly questioned the teacher about the process without raising their hands. Students screamed responses across the room and interacted with other students. It was evident that the teacher understood how to lead the lesson she did not, however, have conceptualized an orderly classroom structure. The teacher had an idea of how her students should behave, but her students were not demonstrating that behavior, and the adults in the room were not providing her with the respect a successful teacher requires.

In the acquisition classrooms were students sitting in rows at their desk listening to the teacher provide information on topics. The science topic included the Pulley System where the teacher attempted to explain how the Pulley System worked. The teacher told the students their muscles were like the Pulley System. The teacher attempted to explain to the students why the lesson was relevant and why she was giving them notes on the topic. Nevertheless, the students were unresponsive to the teacher. They talked amongst themselves as the teacher lectured and were not engaged in the lesson. Whether the students were listening to a science lecture on units of measure or a math lesson on fractions, the students seemed very disinterested. As in the Expectancy Value Theory (Fishbien & Aizen, 1972), the expectation of attaining a goal is related to the importance the individual attaches to that goal. The researcher is not fully convinced the expectancy value was evident in the classrooms observed. If teachers think that students can achieve then they will create work that is meaningful and requires them to achieve. According to the Expectancy-Value Theory (Fishbien & Aizen, 1972), behavior is a function of the expectancies one has and the value of the goal toward which one is working. The students had no reason to work because they found the lessons uninteresting and as a result they were not engaged in learning.

The researcher also observed several classes where the teacher seemed very organized and the students seemed receptive to learning, however, the main venue for learning concepts was using paper and pencil for note taking and teachers continued to lecture in lieu of providing students with meaningful work (Schelechty, 2002). Teachers were still trying to work on students instead of working on designing meaningful work. In one classroom, students were studying the Underground Railroad and seemed very

engaged in the lesson. The teacher used visuals in the lecture, showed students pictures of the Big Dipper, and explained its significance. The students were also given a copy of the song "Follow the Drinking Gourd." The students discussed the significance of the lyrics of the song; however, this teacher was still considered an acquisition teacher according to the student achievement scores. This can be seen as a prime example of disconnect between the multiple choice formatted test and real world experiences. The teacher had obviously planned an in-depth lesson and the students were on task, however, transfer of knowledge was not evident. This is a prime example of a teacher not beginning with the end in mind. Although she may have begun with a clear beginning she did not begin with the end in mind. The importance of starting with a clear understanding of a destination has been stated by Wiggins and McTighe, (2005).

Although the cross tabulation of acquisition teacher observation and perception results was not originally considered, this analysis was conducted as a result of the inability of the researcher to obtain an adequate number of depth of knowledge teachers. Data found in table 8 addresses the percentage of responses that were similar in nature between acquisition teachers' perception survey responses and researcher observations. All responses fell below 50% with the exception of the question "Did the teacher offer immediate responses to learners' questions?" Overall although this item indicated a 50% rate, it was not possible to determine the depth of the response provided by the teacher. The category with the least amount of congruency is the lesson plans matching the instruction. This could have been the result of the teachers not updating their lesson plans and simply teaching new content without recording it, or it could have been a result of the teachers re-teaching an objective not understood by the learners in a previous lesson.

Overall, the findings in this table yielded some very distinctive instructional practices of acquisition teachers.

Table 8

Cross Tabulation of Acquisition Teacher's Perception and Observation

Question	Response
1. Students actively involved in lesson	47.3
2. Is the teacher able to answer in depth questions	36.8
3. Lessons plans are in-depth and in plain view	38.9
4. Lesson plans and objectives match instruction	15.8
5. Does the teacher maintain a daily instruction routine (clear sequence of events)	31.6
6. Does the teacher differentiate instruction on an ongoing basis?	26.4
7. Does the teacher formatively assess on a daily basis?	31.6
8. Is the classroom setup conducive to a learning environment?	29.4
9. Does the teacher relate learning to real world experiences?	36.9
10. Does the teacher assess formally and informally on a daily basis?	44.5
11. Does the teacher utilize teachable moments?	21.1
12. Is the teacher distracted by the presence of an observer?	23.5
13. Did the teacher offer immediate responses to learners' questions?	50.0
14. Is there a clear organization of knowledge of content by the teacher?	38.9

Hypotheses

The following hypothesis was intended to be considered in the study:

H_1: There will be a significant relationship between the dependent variables of teacher instructional strategies and the independent variable student achievement as determined by state accountability measures.

The hypothesis could not be tested due to an inadequate number of individuals willing to participate in the observation portion of the study. When developing the criteria for this study, the researcher decided that in order to allow the participants a choice in the self perception survey, the stipulation would be optional to participate in the observational portion of the study. There were N=67 participants in the perception survey; however, there were only N=22 who participated in the observation portion of the study. Of the participants in the observation portion of the study, only N=3 were considered depth of knowledge teachers.

CHAPTER V

SUMMARY AND CONCLUSION

Introduction

The purpose of this study was to determine whether there was a statistically significant relationship between teachers' instructional practices, their perception of their instructional practices, and the academic achievement of the students with whom they teach. The goal of this investigation was to provide educators with research evidence that supports the effective use of instructional strategies in classrooms that are advantageous to student achievement, and examine if teachers' perception of those goals were actually what was being produced in the classroom. The purpose of this chapter was to present an analysis of data collected from this investigation and to make suggestions for future studies.

In this study, the researcher attempted to address the hypothesis: H_1: There will be a significant relationship between teachers' dissemination of instructional strategies and student achievement as determined by state accountability measures. The hypothesis could not be tested due to lack of teachers that were categorized as depth of knowledge teachers and the insufficient number of teachings who would allow the observer to visit their classrooms. This study consisted of three research questions:

1. What were the behaviors of teachers who taught for depth as identified through observation?

2. What were the behaviors of teachers who taught for acquisition of knowledge as identified through observation?

3. What were the differences if any between the two groups of teachers' instructional strategies?

Summary of Major Findings

In this study, the researcher examined how teachers perceived their classroom behaviors as opposed to their observed behaviors. These observations were made by the researcher utilizing research-based literature and drawing upon expertise in the field of curriculum and instruction. Questions were addressed to determine if teachers were actually accomplishing their teaching goals that they set out to achieve in their lesson plans, which in most cases was related to student achievement.

The researcher found that there was a significant relationship between student perceptions of classroom social climates and academic self-concept. All instructions require that there is a teacher who can adequately use and relay the information in a manner that students understand. This is not the case in all classes. None of the middle grade classrooms observed with the exception of one for approximately fifteen minutes, allowed the students to socialize while completing objectives yet research states that middle grades students need that socialization time in order to master student achievement. Again, in each of the classroom, students were in rows receiving information from the teacher and not talking with one another. If the research is not used or reflected upon, how can teachers truly create classrooms where student achievement is the focus and not teacher achievement? The classrooms were very teacher centered and not student friendly. Based on the data presented in chapter IV, there are more similarities in acquisition and depth of knowledge teachers than differences, but some of the most common differences include the concept of a teacher-centered classroom as opposed to a

student-centered classroom. Since there were far more acquisition teachers than depth of knowledge teachers, a true analysis of differences could not be determined.

The researcher was able to observe several behaviors of teachers who were considered depth of knowledge teachers; however, the researcher found that according to the criteria set for this study, there were not many teachers who fit the category of a depth of knowledge teacher. After conducting the study, some teachers were considered depth of knowledge in one content area (Math) but not in another content area (Language Arts). Based on researcher observations of the two categories of teachers, depth of knowledge and acquisition, distinct differences between the two types of teachers were found although the hypothesis could not be tested due to the lack of participation.

Discussion

The intent of the review of literature for this research project was to develop a foundation for research of teacher's depth of knowledge through their instructional strategies to determine their effectiveness on student achievement in the middle grades. The review went in depth into various aspects of effective teacher instructional strategies and this research also assisted the researcher with the development of a rationale as to why accountability is so important for educators today.

The school district used in this study engages in the decisions that impact student success based on the data provided through district testing and state testing as well as making available tools for teachers to use in their classroom to make informed decisions about their individual student's learning. Whether or not the teachers used this information remains unclear because the research instrument did not assess the level of depth as to what constitutes a formal or informal assessment.

As with Total Quality Management (Demings, 1986), steps to effective instruction include planning, doing, studying, and acting. The few teachers who were considered depth of knowledge teachers through the data and observations unknowingly used this model for instruction. One of the research questions on the research instrument addressed Madeline Hunter's teaching model (Hunter, 1993) which somewhat resembles the Total Quality Management model (Demings, 1986). Planning and doing resembles the planning and modeling of the lesson, the practice or informal assessment resembled the studying after the students had completed assessments, and the acting was where teachers developed a plan to execute strategies for the difficult areas of the student's learning.

In the review of literature, James Stronge (2002) defined an effective teacher as one who knows the importance of instruction, allocates time properly, has high expectations for her students, and consciously and consistently plans for instruction. It was evident that teachers who were considered acquisition teachers did not fall under the above definition. They lacked one or more of the important components of the definition of an effective teacher such as allocating time properly. It was also noted that a lot of time was spent on the teacher giving students information rather than the students responding to pertinent information. The classroom environment was teacher driven and not student friendly. The majority of the participants innately felt that they had high expectations for their learners; however, through observation this was not always evident. Some participants still gave students worksheets to complete that lacked the depth of knowledge level's learning objectives addressed by each grade level. The teachers were not consistently planning for instruction as designated by the lack of congruency in the

delivery of lessons. Some of the questions that were posed by students were answered by the participants but were surface answers. There were several opportunities to go in depth and expand on the lesson, but the assumed time constraints or the lack of expertise in the specified content areas were the culprit for not allowing students to discover learning.

The review of literature revealed that effective teachers use specific questioning techniques, and they understand that student engagement is essential to learning. The participants in this study that were considered depth of knowledge understood this concept as evident through their delivery of the lesson. Those teachers who were considered acquisition teachers were those whose classrooms were very teacher-centered and lacked the level of engagement described by Phil Schelechty (2002) in the Working on the Work model. The issue lies in the fact that most teachers perceive to be providing instruction to be an effective teacher however, when observed by a third party, the type of instruction needed are not evident. It is difficult to explain to someone that they should be doing something that they think they are already doing. Therefore, there is a need for an evaluation process or tool to assist teachers in becoming more effective teachers. The results of this study also revealed that although the school district used in this study is classified as very successful, according to the criteria set forth by the researcher, there were many teachers who were categorized as acquisition teachers. In Marzano's 2001 work "Classroom Instruction That Works," there are certain strategies that are proven through extensive research that work to improve student learning. One of these is comparing and contrasting. There was very limited use of compare and contrasts when observing participants in this study that were deemed acquisition teachers. Students were not summarizing and note taking consistently and were semi-tentatively listening to their

teacher tell them information instead of critically deciphering what was relevant and what was not. The classrooms were very teacher-centered; therefore, there was little room for praise and recognition because the students were not the ones doing the talking. Homework was not addressed in this study, but no teacher mentioned homework while the research was being conducted. Nonlinguistic representations or mental models were mentioned in the review of literature under Marzano's et al.work (2001) few of the participants, including the depth of knowledge teachers, used nonlinguistic representation consistently. Moreover, teachers did use Thinking Maps or graphic organizers to help student establish some concepts. In very few of the classrooms, was cooperative grouping evident; student were in whole group settings, which was conducive to a lack of student engagement. There were learning goals presented in the classroom, however, the goals were not student-centered goals. There was no relevance to the student's learning as evident through the lack of student engagement throughout the lesson.

Turner & Bissett (1999) in the review of literature indicated that the way in which teachers differentiate for individual learners made a huge impact on the cognitive knowledge and student achievement. Unfortunately, differentiated instruction was not evident in any of the acquisition teacher's classroom, which is evident that individual student needs were not being addressed during the time of the observations.

Schelechty (2002) focused on student engagement and ten designed qualities used to enhance student learning. Some of the design qualities must be present such as content and substance, protection from initial failure, product focus, and clear and compelling product standards. In most of the participants' classroom these four elements were evident to some degree, however, clear and compelling products was the one element that

was most inconsistent by the participants. Again, because the classrooms were so teacher–centered, students were not aware of what they should be learning about the learning objectives, which suggested that nothing was clear and compelling about the product standard. As far as engagement, several of the students were in the retreatism stage of Schlelchty engagement model (Schelechty, 2002).

Understanding by Design by Wiggins and McTighe (2005) was discussed in the review of literature as a way for effective teachers to begin planning with the end in mind. None of the participants whether acquisition or depth of knowledge showed evidence of beginning with the end in mind; however, the researcher only observed each class for approximately fifteen to twenty minutes, which could account for why the presence of beginning with the end in mind was not evident (Wiggins & McTighe, 2005).

All of the participants in this study were considered highly qualified to teach in one or more content areas; however, none of the elementary teachers were highly qualified in all the content areas they taught. Participants who taught fourth or fifth grades were considered generalist while they may have had a degree in one area; the teachers taught all subjects which meant they may not be highly qualified to instruct students in the content areas although they were considered highly qualified by state standards. As educators we may need to look at Shulman's 1986 study a little closer for the elementary grades that are considered middle grades. Shulman (1986) implied those individuals who know content and can use it are not typically those that try to teach procedures within the content. Teachers who are considered generalist usually do not have a true understanding of the content and consequently does the students a disservice. This thought process lends itself that in this day and age pedagogy is not enough

anymore. With the demand placed upon the education profession, teachers are forced to know and understand the content that they must teach and for elementary and middle school teachers this is a problem. Teachers of the middle grades are prepared to be generalist, but once in the classroom expected to perform as experts in their content areas. This is not possible without proper training. Shulman (1986) emphasized that both content and pedagogy is important and there must be a balance between the two in preparation programs and professional development beyond the higher education classroom. The participants in this study, in some cases, struggled with the content; which may be a reason as to why the classroom was so teacher-centered. Teachers that were considered depth of knowledge teachers mostly in math were most comfortable because they were certified in the content area.

In the review of literature, Turner-Bissett (1999) reported that there is a significant problem with the current regulations for new educator programs. Three themes were addressed that dealt with the knowledge bases of the expert teacher: subject knowledge base of teachers, the preparation programs at the institutes of higher learning, and the identification of specific competencies deemed necessary for teaching. The researcher found in this study that the knowledge base of acquisition teachers' were challenged due to the high demands placed upon generalists. The teachers, although required to be highly qualified, are sometimes granted certification through few courses and not extensive training. Therefore, one must question the validity of highly qualified status. The perception of teachers is that because they have obtained this high qualification status, they are ready to teach the content areas specified by their job description. Once teachers experience a lack of success in student achievement, it is

sometimes hard for them to accept that their qualification on paper is not shown through students' annual assessment results.

When the researcher began this study, the intent was to determine whether ethnicity, gender, and socioeconomic status of the students with whom the participants teach had a profound impact on the students' achievement levels. Nevertheless, after conducting the research, the researcher discovered that although the schools used in this study were significantly different in socioeconomic makeup and ethnicity the student achievement levels were fairly consistently. Therefore, the researcher decided the focus of the study should be the perception and actual achievement of the students in respect to the instructional effectiveness of the teachers with who instruct the students in question. The review of literature also contained some investigation of the employment status of students, but the study would need to be expanded over the span of approximately 10 to 15 years to determine this effect because the age of the students involved in this study ranged from 9 to 13 years.

<p style="text-align:center">Implications for Policy and Practice</p>

Based upon the review of literature and the findings of this study, there are several implications for policy and practice to consider. The review of literature, discussion, and the results of this study should be deemed as components of teacher effectiveness. School districts using the findings from this study could be more adept at identifying what is preferred in hiring effective teachers and modifying their hiring practices to fit the criteria set forth for depth of knowledge teachers. Beginning administrators have the daunting task of selecting teachers that will be effective for the students of their schools. This study gave insight into what teachers thought their

practices were and the actual research data that may have proved otherwise. Questions posed at teacher interviews could be modified to provide a glimpse of educator's forethoughts on educating youth. This measure would help eliminate a lot of turn over that some school may experience. Teachers could use this study to help them make better decisions for their students. Often, teachers unknowingly plan lessons that they are comfortable with implementing without taking into consideration their audience. This study reminds teachers that backward design (Wiggins & McTighe, 2004) should be at the forefront of all lesson planning. It would be advantageous for school districts as well as individual teachers to truly analyze the data presented and reflect upon the commonalities and differences presented in this study to those found in their classrooms and schools.

Limitations of the Study

There were several limitations in this study to consider:

1. There were not enough teachers who were considered depth of knowledge teachers; therefore, the comparison of the two types was not attainable.

2. The teachers had a choice of whether or not to participate in all aspects of the study; most chose not to be observed.

3. The study was also limited to one school district and most of the classroom observations were limited to three schools within that district.

Recommendations for Future Research

This study was initially conducted to identify the practices of acquisition and depth of knowledge teachers and to compare those practices to student achievement. Some of the recommendations for future research are as follows:

1. For future studies, the criteria should be lowered so that the percentage of students scoring in a particular area would allow more teachers to be considered depth of knowledge teachers. This does not mean lowering the standards, but it would take into account the fact that students are volunteers and teachers do not choose the students for whom they will teach. Annual assessments may have occurred on a bad day for particular students or other factors may have had an impact upon students' assessment scores.

2. So that there is a broader base, the researcher could expand research across regions instead of just one school district. This could also allow for more participants to take part and strengthen the results since the observation portion of the study is where most teachers failed to comply.

3. Student achievement could be considered across a wider time period of more than two years to determine whether or not students begin to decline in the middle grades or whether not their educational beginnings were a factor i.e. No head start or preschool.

4. Gender and race could be also be considered to determine whether or not teachers' perception is skewed for certain genders or races since race is a common denominator when determining academic achievement in some studies.

5. More research should also be conducted to consider attendance of students.

<div align="center">Summary</div>

Conducting this research study was both rewarding and enlightening. The opportunity afforded the researcher to observe teachers' classrooms and actually evaluate whether or not instructional strategies discussed and debated across the educational realm

are actually being implemented was a once in a lifetime opportunity. The research literature and results of the study indicate that implementing teachers' instructional strategies along with students' willingness to be taught are the cornerstone of academic growth. If teachers are not willing to reflect upon his or her methods of delivery and modify their lessons to meet the students' needs, then all is lost.

There are many factors that determine the success of failure of students, but the most prevalent factor is that of a strong instructional teacher. Students come in all shapes and sizes and teachers must first believe that students can achieve then set out on a journey to make that idea a reality. Prior to conducting this research, the researcher pondered the question of how she could best benefit the children of public education. As a student, she was a daydreamer being constantly reminded to pay attention. She thinks the biggest problem she faced as well as many students today was that her instructors did not address her individual needs because they felt they were already doing a great job. This research project afforded the researcher the opportunity to delve deep into the minds of teachers to determine if they are really doing what they perceive they are doing. Going into the research, she realized that each of the schools involved in the study were quite different just like the children that they serve. The researcher has very mixed verbal results but overwhelmingly each teacher eagerly participated in the perception portion of the study. Teacher, conversely, are not as receptive to allowing an outsider to actually observe them do their business.

While the purpose of this study was not to determine the one answer to student achievement, the goal was to delve into the core of education, the front line, and teachers' classrooms was accomplished. It is the hope of the researcher that future endeavors will

delve into the researcher even deeper to ultimately find out how students achieve and

make a conscious effort to accomplish what no child left behind has set out to accomplish

that all students are proficient learners and find true meaning in their learning experience.

July 12, 2008

Dear Mr. East,

I am currently working toward completion of my doctoral dissertation. In order to complete this process I need your help.

 I am soliciting permission to conduct research in the Gulfport School District. The research will initially consist of all middle grades teachers (teachers in grades 4-8) in the district. I am asking teachers to complete a self-perception survey that will take approximately five minutes to complete.

I am also asking permission to group teachers by categories of depth of knowledge and acquisition. I would like to use the average of the 2006-2007 MCT scores to devise the two categories. This information will not be shared with anyone: it is solely for the purpose of categorizing the two groups.

After I have compiled the two groups, I would like to conduct one fifteen to twenty minute observation of twenty-five teachers from the group that completed the self-perception survey. This information will then be analyzed to determine if there is a correlation between how teachers perceived their depth of knowledge as compared to what I observed.

This research should not hinder the learning process, as I will not interact with either the students or teacher during my visit.

Please help me in this endeavor. Your support will be greatly appreciated.

Thanks in advance for your support,

Tracy Jackson Ed. S.

Dear Tracy Jackson,

I, Glen East, the superintendent of the Gulfport School District, hereby give you permission to conduct research.

Signature: _Glen V. East_

Date: _6/29/10_

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

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HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee 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: 28080702
PROJECT TITLE: **Teacher Depth of Knowledge as a Predictor of Student Achievement**
PROPOSED PROJECT DATES: 09/01/08 tp 05/01/08
PROJECT TYPE: **Dissertation or Thesis**
PRINCIPAL INVESTIGATORS: **Tracy Evans Jackson**
COLLEGE/DIVISION: **College of Education & Psychology**
DEPARTMENT: **Educational Leadership & Research**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **11/24/08 to 11/23/09**

Lawrence A. Hosman   12-02-08
Lawrence A. Hosman, Ph.D.   Date
HSPRC Chair

APPENDIX C

TEACHER PERCEPTION SURVEY

Name (optional):_____Number of years teaching experience: ____

Highly Qualified Content Area; _____

Number of Years in Current Grade: _____ Number of Years at Current School: ____

Highest Degree Attained: bachelors   Masters   Specialist   Doctoral

Indicators of Depth of Knowledge	Strongly Agree	Agree	Disagree
My students are actively involved in my lessons (e.g., answering questions, offering opinions, conversing with peers on the topic).			
I am comfortable enough with all areas of my content that I able to answer in-depth questions as they relate to the topic of discussion.			
My plan for each day/week is in-depth and on display in my classroom.			
I take time to carefully plan and match all stated objectives for each lesson I teach.			
I have a daily instruction routine. (i.e., anticipatory set, modeling, teaching, practice).			
I differentiate Instruction for all learners in my class on an as-needed basis.			
I use some form of formative assessments that allows me to know whether my students understand the lesson and objectives on a daily basis.			
My classroom is organized in a manner that is conducive to learning.			
I relate my lessons or the topic of discussion to a real world experience.			
I assess my students daily either formally or informally.			
I utilize teachable moments.			
I am not distracted by the presence of an observer.			
I believe when my administrators walk into my room they can visually see that I am organized.			
If an observer walks into my room unannounced, the individual will be able to instantly understand the lesson and my objective for the lesson.			
I believe all of my students are capable of learning.			
I understand how to differentiate instruction for all learners.			
I consider myself an instructionally rigorous teacher.			
I consider myself a mentally organized person.			
I am aware of Madeline Hunter's teaching model.			

APPENDIX D

CLASSROOM OBSERVATION INSTRUMENT

School/Participant Number #_____   Grade Level: _____

Date: _____   Start Time: _____ End Time: _____

Indicators of Depth of Knowledge	Strongly Agree	Agre	Disagree	Notations
1. Are the students actively involved in the lesson? (e.g., answering questions, offering opinions, conversing with peers on the topic).				
2. Is the teacher able to answer in-depth questions as they relate to the topic of discussion? (Substance)				
3. Is an in-depth objective written in plain view?				
4. Is it evident that the objectives match the instruction throughout the discussion between the teachers and students?				
5. Is there a clear sequence of events throughout the class period (i.e., anticipatory set, modeling, teaching, practice)?				
6. Is there evidence that the teacher differentiates Instruction for all learners?				
7. Does the teacher check for in-depth understanding of the content?				
8. Is the teacher's classroom organized in a manner that is conducive to learning?				
9. Does the teacher relate the topic of discussion to the real world?				
10. Is there evidence of rigor in assessment practices both formally or informally?				
11. Did the teacher utilize teachable moments?				
12. Is the teacher distracted by the presence of an observer?				
13. Did the teacher offer immediate responses to the learner's question in an in-depth manner?				
14. Is there clear organization of knowledge of content by the teacher?				

Grouping: _____ Whole Group _____Cooperative Group _____Individualized Instruction
Point of Lesson: _____ Setting _____ Teaching to Objectives _____ Closure
Levels of Engagement: AE   RE   PC   RT   RE

Design Qualities: Content and Substance__ Product Focus: __ Affirmation of Performance:
Affiliation; __ Protection from Initial Failure: ___ Organization of Knowledge: __ Choice: __
Authenticity: __ Clear and Compelling Product Standards: __ Novelty and Variety: __
Is the lesson Relevant: Y or N Is the lesson Effective: Y or N is the lesson Efficient: Y or N

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