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Examining The Relationship Between Standard Tests, Experiential Learning Strategies, Student-centered Teaching Attitudes, and Student Achievement in Communication Arts

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by

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Dissertation submitted to the Education Faculty of Lindenwood University in partial

fulfillment of the requirements for the degree of

Doctor of Education

School of Education

DECLARATION OF ORIGINALITY

I do hereby declare and attest to the fact that this is an original study based solely upon
my own scholarly work here at Lindenwood University and that I have not submitted it
for any other college or university course of degree here or elsewhere.

Legal Full Name: JoAnn Bester-Clay

Signature: *JoAnn Bester-Clay* Date: *May 17, 2010*

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This dissertation has been approved as partial fulfillment of the requirements for the

degree of

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Dr. William Emrick, Dissertation Chair   _May 17, 2010_
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Abstract

The purpose of this collaborative research study was to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student ac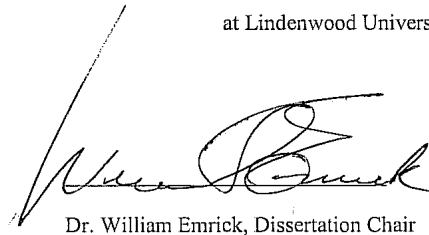hievement in Communication Arts. Each researcher took primary responsibility for the quantitative data (survey responses based on a Likert Scale and Missouri Assessment Program [MAP] and the qualitative data [open-ended questions, responses, and classroom observations of teachers]). This study was based on a collaborative effort in identifying the existence of teaching factors which could increase student achievement on the MAP test.

The MAP test is one of several educational reforms mandated by the No Child Left Behind Act (NCLB). For the purpose of this study, the MAP was administered to students in grades three through six in the targeted elementary schools. Students are expected to demonstrate an academic level of proficient or advanced in the area of Communication Arts as evidenced by the MAP Scale Score. The MAP Scale Scores are expressed by three digits, describing achievement on a continuum that spans from the range of 648, the lowest range, to 790, the highest range.

In this study, the top ten teachers in the study district, who had the greatest percentage of students with MAP Scale Scores in the area of proficient or advanced, were identified for the three study years, 2007-2009. The top ten teachers' MAP Scale Scores were compared to the MAP Scale Scores of forty-five randomly selected third-sixth grade students. The results indicated that the MAP Scale Scores of the students in the top teachers' classrooms were higher than the MAP Scale Scores of the randomly selected students during the three study years. The examination of classroom observations

revealed that teachers utilized standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement to increase academic performance on the MAP. The teachers' survey responses indicated the existence of the teaching behaviors identified in the study. The teachers' responses revealed that they understand how to ensure student understanding, know that their students are going to be successful, believe that all of their students can learn, and can achieve proficient or advanced MAP Scale Scores.

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Chapter One – Introduction

Background of the Study

The American educational system has been challenged for centuries with the question, "Why can't Johnny read?" In order to answer this question, each school year the Missouri Assessment Program (MAP), a standardized test for the state of Missouri, is administered to students in grades three through six in elementary schools. The MAP testing program is used to measure the effectiveness of Missouri Schools in meeting achievement goals mandated by the No Child Left Behind Act (NCLB) enacted in January, 2002. The primary focus of NCLB requires states and districts to establish and implement an accountability plan with well-defined standards to increase academic proficiency in Communication Arts.

The school district in this study, like many districts throughout the United States, is required to make Adequate Yearly Progress (AYP) which is a minimum academic target established annually by each state that identifies the percentage of students who are proficient or advanced in Communication Arts. States and school districts are faced with many challenges in making AYP. Each state and school district is required to increase the percentage of students whose academic performance on the state test shows that students are making progress towards the proficient or advanced levels every school year. This minimum target must be achieved and determined if the states and school districts have made improvements in Communication Arts to determine if AYP has been achieved. According to Wong and Nicotera (2007), "schools will have to make annual and steady gains in the percent of students who meet academic proficiency to determine if AYP has been achieved" (p. 146).

The purpose of this study was to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The collaborative study involved collaborators, JoAnn Clay and Suzette Simms. The collaborators believed that the need for this study was based on identifying the existence of teaching factors that could increase student achievement on the MAP test.

A twelve question survey that examined the relationship between standard classroom tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts, was administered to top performing teachers. The top ten teachers were identified in the study district and had a large percentage of students who achieved proficient or advanced in Communication Arts on the MAP (Emrick, 2008). The teachers who participated in the study were asked to rank their answers to the survey question using a Likert Scale ranging from the following responses: infrequently, some of the time, most of the time, and always. Each survey statement was followed by an open-ended question which required the participants to explain in writing their understanding of the question and their ranking of its presence in their teaching. Clay focused on the quantitative data that was obtained from the MAP test scores and the survey questions using the Likert Scale. Simms focused on the qualitative data (open-ended responses and classroom teacher observations). The collaborators focused on examining the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts.

Background of the Problem

The No Child Left Behind Act requires states and school districts to rely on data in Communication Arts to evaluate student achievement and teacher effectiveness in the classroom. Annually, each state is required to identify the state standards that are based on the state curriculum and the expectations of the academic performance of all students. The data provides educators with information on areas that shows little or no growth as evidenced on the MAP. The achievement in Communication Arts has shown that AYP is not being met and that a smaller percentage of students are not in the proficient or advanced range.

The Elementary and Secondary Act of 1965, A Nation At Risk of 1983, the Outstanding Schools Act of 1993, Improving America's Schools Act of 1994, the Koret Task Force, 1999, Goals 2000, No Child Left Behind Act (NCLB) of 2001 through the present, and A Nation Accountable, Twenty-Five Years Later of 2008, have revealed that our educational system is in need of educational reform (Missouri Department of Elementary and Secondary Education (MO DESE), 2006, p. 1). These legislations indicated that educators had not ensured that children will be academically successful, particularly in the area of Communication Arts. For example, the results of the state assessment test in Communication Arts identified the need for improving academic achievement. Each of these reports described failing academic performance and according to each report's conclusion, educators should develop an educational program to achieve better results. Educators should not ignore the fact that students are still at risk. Educators should plan to implement educational reforms that go well beyond current

efforts. Twenty-first century students require a better education than ever before to be successful. Based on these reports and the study district's data, there is enough knowledge to assist educators in helping students become academically successful.

Statement of the Problem

Some educators are still failing students and not ensuring that students reach a proficient or advanced level in Communication Arts. Based on the research of the collaborators in the study, there are top performing teachers of grades three through six for the three study years, 2007-2009. The top performing teachers have a large percentage of students whose MAP Scale Scores are in the proficient or advanced level for the study years. The MAP Scale Scores are expressed by three digits, describing achievement on a continuum that designates proficient or advanced levels and spans from 648, the lowest range, to 790, the highest range.

While there have been ten top teachers for each of the study years, there has been a range of 35 through 43 teachers during the study years who are not top performing teachers. Seventy nine to 81 percent of teachers of students in grades three, four, five, and six taught students that MAP Scale Scores were not in the proficient or advanced range during the study years. A requirement of NCLB is that schools and school districts focus on teacher accountability to ensure student achievement in Communication Arts.

Purpose of the Study

The purpose of this study was to examine the relationship between standard tests (common assessments), experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The collaborators believed that the need for this study was based on identifying teaching factors that could increase

student achievement in Communication Arts. Results of the top performing teachers'

MAP Scale Scores for the study years indicated that a large percentage of their students

were achieving in Communication Arts. This study could add to the body of research on

effective teaching factors that could increase student achievement.

Rationale of the Study

The superintendent of the study district identified the top ten teachers who taught

grades three through six for the three study years, 2007-2009. The collaborators were

interested in examining the teaching factors that increased the MAP Scale Scores of

students in the top teachers' classrooms. The study could provide a framework for

professional development practices focused on effective teaching factors for all teachers

to increase student achievement in Communication Arts.

Student achievement shows a direct correlation with high teacher expectations

and preparedness of the instructor. These teacher survey results may provide teachers

with teaching factors that increase student achievement in Communication Arts. The

study could provide instructional support to teachers who administer the MAP.

Expectations that promote student success in an academic setting include each of the

following:

- The need for teachers to identify low achieving students early

- The need for reading interventions for small groups of students who are at risk of
  failing reading

- Vertical curriculum-alignment of knowledge and skills taught at each grade level
  that connects across all grades

- The need to determine what students must understand and be able to do

- The need to organize student activities which focus on the desired end

- How important demonstrations are to learning in each lesson

- How and when the teacher should provide modeling of the expected skills

- The need to know what is most important to teachers about guided practice

- The need for teachers to understand the importance of ongoing feedback (assessment) in each lesson

- The need to ensure student understanding

- The need to move students into the proficient and advanced level in Communication Arts on the MAP assessment

- Why technology is important when teaching students to successfully learn

(W. Emrick, personal communication, October 10, 2008).

Hypotheses

Null Hypothesis #1*:* There is no difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Alternative Hypothesis #1: There is a difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Null Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are not the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching, and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to the teacher survey questions.

Alternative Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to the teacher survey questions.

Research Questions

The research questions were as follows:

1. What is the impact of standard classroom tests (common assessments) during instruction on improving student achievement in the Communication Arts section of the MAP?

2. What is the impact of experiential learning strategies on improving student achievement in the Communication Arts section of the MAP?

3. What is the impact of student-centered teaching attitudes on improving student achievement in the Communication Arts section of the MAP?

Independent Variables

- The use of standard classroom tests (common assessments) during Communication Arts instruction

- The use of experiential learning strategies during Communication Arts instruction

- The adoption by teachers and maintenance of student-centered teaching attitudes during classroom instruction

Dependent Variables

Dependent variables were improvements of student achievement in the Communication Arts section of the MAP as indicated by the MAP Scale Scores that are assigned according to achievement levels.

Limitations

History: The achievement scores of the MAP are gathered from students whose teachers used the district's prescribed reading series, common assessments and professional development. The teachers in the elementary schools may have used a variety of teaching strategies, instructional delivery styles and/or expectations.

Maturation: This study was limited by the effects of maturation of the population and classrooms within the district. An examination of data between teachers administering the MAP tests in grades three, four, five, and six occurred over a three-year time span. To minimize the effects of maturation, this study used data from the MAP test administered over three years (2006, 2007, and 2008) to identify teachers whose students consistently evidenced scores in the proficient and advanced ranges within the MAP.

Testing environment: The district set a mandatory testing window for students in grades three, four, five, and six to take the MAP assessment. Each teacher and proctor received the same instructions for administering the assessment. Multiple proctors were assisting classroom teachers on a daily basis in multiple settings. Environments within different schools were not controlled. Efforts were made to eliminate all outside and inside noise during the testing window.

Mortality: Inferences are made on the basis of participants from beginning to end and could not take into account transiency of student population thus affecting MAP scores during the course of the study.

Definition of Terms

Active Teaching Strategies – According to Kolb (1984), active strategies are also known as experiential strategies that include a variety of strategies: small-group discussions, projects, peer feedback, homework problems, the teacher behaving as a model of the profession, being left to judge one's work by ones self, and activities designed to apply skills to practical problems. (p. 200)

Adequate Yearly Progress (AYP) – According to Wong and Nicotera (2007), "AYP is a state developed minimum target for the percent of students proficient in Communication Arts." (p. 237)

Annual Proficiency Target – According to Wong and Nicotera (2007), "each state established its starting point for academic proficiency in Communication Arts and Mathematics and determined a monitoring approach for guaranteeing 100% proficiency in the twelve years before the 2014 deadline under NCLB." (p. 142)

Backward Design – According to Wiggins and McTighe (1998), "backward design means beginning with the end in mind. Teachers should start with the end, the desired results (goals or standards), analyze the learning (performances), and plan learning experiences and instruction." (p. 9)

Common Assessments/Standard Tests – According to Reeves (2007), "assessments that are collaboratively designed and administered by grade-level or course teams to all students during the quarter, semester, trimester, or school year and are

intentionally created to gauge student understanding of the most essential

standards." (p. 84)

Communication Arts Content Standards – These standards require students to acquire a

solid foundation that includes knowledge of and proficiency in speaking and

writing standard English, reading and evaluating fiction, poetry, drama, reading

and evaluating non-fiction works and materials; writing formally (such as story-

telling, debates, lectures, multi-media productions); participating in formal and

informal presentations and discussions of issues and ideas; and identifying and

evaluating relationships between language and culture. (MO DESE, 2006, p. 2)

Depth of Knowledge – A systematic approach that revolves around measurement,

content-related evidence of validity, which tells educators whether a test

accurately measured students' possession of the skills and knowledge embodied

in whatever curricular aims the test assesses. Webb's approach to assessment

alignment reflects a traditional way of thinking about whether a test measures

what it purports to measure. It is a well-intentioned procedure, and it satisfies

federal demands for such alignment evidence. (Popham, 2008, p. 80)

Elementary and Secondary Education Act of 1965 – According to President Lyndon B.

Johnson, this bill was the most sweeping education bill ever to come before

Congress. It represented a major new commitment of the Federal Government to

quality and equality in the schooling that is offered to our young people. Members

of both parties of Congress, who supported the enactment of this legislation, will

be remembered in history as men and women who began a new day of greatness

in American society. (Bahmer, 1966, pp. 414-415)

Experiential Learning Strategies – The experiential learning theory of development

focuses on the transaction between internal characteristics and external

circumstances, between personal knowledge and social knowledge. It is the

process of learning from experience that shapes and actualizes developmental

potentialities. This learning is a social process; and thus, the course of individual

development is shaped by the cultural system of social knowledge. (Kolb, 1984,

p. 133)

Likert Scale – According to Popham (2009), "Rensis Likert, an organizational

psychologist, devised attitudinal inventories almost 80 years ago and the

inventories presented a series of statements with which students or adults are

asked to respond to that involves a rating scale." (p. 85)

Missouri Assessment Program (MAP) – The MAP is one of several education reforms

mandated by The Outstanding Schools Act of 1993. As a result of this act, the

State Board of Education directed the Missouri Department of Elementary and

Secondary Education to identify knowledge, skills, and competencies that

Missouri students should acquire in grades three through six in elementary

schools. (MO DESE, 2006, p. 1)

MAP Scale Score – The MAP Scale Scores, expressed by three digits, describe

achievement on a continuum that, in most cases, span the range of grades three

through six in the study district's elementary schools. Below Basic MAP Scale

Score range is 455-591. The Basic MAP Scale Score range is 592-647. The

Proficient MAP Scale Score range is 648-672 and the Advanced MAP Scale

Score range is 673-790. (MO DESE, 2006, p. 4)

No Child Left Behind Act of 2001 (NCLB) – NCLB is primarily focused on the

academic achievement of all students, particularly low-performing students in

disadvantaged schools. NCLB has mandated that states establish and implement

an accountability plan with well-defined standards for academic proficiency. It

requires states to hire highly qualified teachers who are trained in their

instructional areas. Students are required to take annual tests in grades three

through six with results disaggregated by several subgroups. (Wong & Nicotera,

p. 2)

Rubric – According to Wong and Nicotera (2007), "a rubric is an instructional tool that

match state learning objectives and demonstrated performance characteristics with

predetermined levels of performance." (p. 245)

Student Engagement – According to Silberman (1996), "students are engaged when they

are involved in their work, search for answers to questions, request information to

solve problems, or search for ways to complete a task." (p. 4)

Title I – According to Wong & Nicotera (2007), "Title I is the largest federally funded

education program that provides additional funding to elementary and secondary

schools with high percentages of poverty and low-achieving students." (p. 247)

Zone of Proximal Development – The zone of proximal development, or ZPD, one of the

most well known of all Vygotsky's concepts, is the distance between the child's

actual developmental level as determined by independent problem-solving and

level of potential development as determined through problem solving under adult

guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 131)

Assumption

Whenever the words standard tests and common assessments are used, they are synonymous terms.

Chapter Two – Review of Literature

The review of literature in this chapter examined the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The collaborative study builds upon the body of research on teaching factors that could increase student achievement. This chapter includes a review of the pertinent research on the concepts of how children learn Marzano's instructional strategies, student-centered teaching attitudes, experiential learning strategies, standard tests, teacher efficacy, and the relationship between teacher expectations and student achievement.

How Children Learn

Dewey (Kuhlthau, 2007) described learning as an active individual process that takes place when students are given the opportunity to act and reflect on a series of consequences. Bruner (Kuhlthau) stated that students are more successful learners and can make sense of the world when they are actively engaged in their learning. Bruner's research indicated that students have an in-depth understanding of information when they are not passively gathering information. Bruner (as cited in Kuhlthau, p. 25) stated "it is not enough for students to merely gather information; they need to be involved in interpreting information for deep understanding to occur." The research of Kuhlthau focused on students involved in the process of learning information and creating minds that would provide the skills and concepts to continue learning throughout life.

According to Marzano (2007), students should be engaged in learning activities that provide opportunities to ask questions, test their hypotheses, collect the results, and describe their conclusions. An example was provided by a teacher that asked students in

Communication Arts to predict how the restriction of using conjunctions would affect their writing. The students were asked to predict the outcome and make a comparison of what actually happened to what they predicted. Marzano stated that "teachers should engage students in problem-solving tasks to generate and test their hypotheses" (p. 92). Marzano's research recognized the importance of providing opportunities for students to test their hypotheses, gather data, and discuss the conclusions that would improve student understanding and learning.

According to the research of Kuhlthau (2007), students' prior experiences determine how they will develop their understanding of new knowledge. Students' prior knowledge helps them form the basis for learning new knowledge. The central concept of Dewey, Bruner, Kelly, Vygotsky, and Piaget, major educational theorists and researchers, was that "connections to a child's present knowledge are essential for constructing new understandings" (p. 25). The researchers and theorists concurred that prior knowledge can affect students' understanding of new knowledge. The research showed the significance of teachers using students' prior knowledge to teach new knowledge.

According to Kuhlthau (2007), the guided inquiry process involves students' questioning conducted by the teacher. Kuhlthau stated that when students use what they already know to build a new perspective of the world, learning takes place. Kuhlthau believed that the guided inquiry process involves students having many sources of information and ideas to understand the lesson's objectives. Students are excited about learning, challenged to think about new ideas at a higher level, and develop into independent thinkers and problem-solvers. The guided inquiry process requires students to become actively engaged in the learning process and involves students understanding

the connection between the world and the curriculum. Kuhlthau concluded that

"continuity between the curriculum within the school and the child's experiences outside

the school promotes sustained, meaningful learning and therefore, the curriculum and the

student's world need to be closely aligned for deep personal learning to take place" (p.

26). Kulhthau's research demonstrated that students should be able to see the relevance of

learning in their world.

As cited by Kutlthau (2007), Vygotsky's idea of the zone of proximal

development helped educators think about how and when to support student learning.

Vygotsky defined the zone of proximal development as the area between what students

can learn and the area of possible development of what they can learn with the support of

a teacher or a more capable peer. According to Kuhlthau, students can learn when

interacting with peers. Students construct their meaning and understanding of the world

from more capable peers as well as teachers. Kuhlthau's research revealed that the

students' social circle includes their peers, parents, teachers, acquaintances, and

strangers. As cited by Kuhlthau, "Piaget described children as progressing through stages

of cognitive development and educators should assist children with asking questions,

seeking answers, and sharing their discoveries with others" (p. 28).

According to Davies (2007), students make progress in their learning when

teachers state the objectives and goals of the lesson. Davies' research indicated that

students understand what they are expected to do and achieve when the goals and

objectives are clearly stated and defined. Teachers identify the learner outcomes and

provide students with language they can understand making it possible for students to

monitor their own learning. Davies believed teachers' decisions should be effective and

that students involved as an educational partner enhanced the students' ability to perform a successful learning task. Davies (in Reeves, 2007) concluded that "when teachers informed students of the focus for learning, students could become engaged in their own learning, bring prior knowledge to their learning, feel a sense of ownership, and become effective partners in the learning-assessment process" (p. 37). The research of Davies suggested that the role of students in their engagement with learning and bringing prior knowledge to the learning process is critical to their success in learning and acquiring new knowledge.

Marzano's Instructional Strategies

The researchers from Mid-continent Research for Education and Learning (McRel) (in Marzano, Pickering & Pollock, 2001) stated that their primary goal was to identify effective instructional strategies to increase student achievement for all students in every subject or content area. The McRel researchers found that there are nine effective instructional strategies that have enhanced student achievement. They noted that educators who used these strategies in grades kindergarten through grade twelve experienced successes in student achievement. The following table lists the categories of instructional strategies that the McREL researchers found would enhance student achievement, the average affect size, and the percentile gain for Marzano's nine instructional strategies:

Table 1

Categories of Instructional Strategies that Affect Student Achievement

_____

Category	Avg. Effect Size	Percentile Gain
Identifying similarities and differences	1.61	45
Summarizing and note taking	1.00	34
Reinforcing effort and providing recognition	.80	29
Homework and practice	.77	28
Nonlinguistic representations	.75	27
Cooperative learning	.73	27
Setting objectives and providing feedback	.61	23
Generating and testing hypotheses	.61	23
Questions, cues, and advance organizers	.59	22

Note. Adapted from *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement* by Marzano, Pickering and Pollock, p. 7.

Marzano, Pickering, and Pollock (2001) used a meta-analysis design which they stated involved determining the results of a number of studies to find the average effect size that is reported in Table 1. These results are reported as an effect size because according to the researchers the effect size can be reported as an increase or decrease in student achievement. They found that "the effect size can easily translate to percentile gain, thus allowing the researchers to interpret the results more effectively and identify the benefits of each instructional strategy" (p. 4). Marzano et al. reported the significance of the effect size so that teachers could relate to and identify a beneficial instructional strategy. Marzano et al. stated that the research team, McREL, is still asking questions

and trying to determine if one instructional strategy is more effective than others in different subject areas, grade levels, and in addressing students from different backgrounds and with different abilities.

Identifying similarities and differences. Marzano et al. arrived at four conclusions which involved:

- presenting students with explicit guidance in identifying similarities and differences enhances students' understanding of and ability to use knowledge;

- asking students to independently identify similarities and differences enhances students' understanding of and ability to use knowledge;

- representing similarities and differences in graphic or symbolic form enhances students' understanding of and ability to use knowledge; and

- identifying similarities and differences in a variety of ways enhances students' understanding of and ability to use knowledge. (Marzano et al., 2001, pp. 15-16)

Marzano et al. (2001) found that classroom teachers have to teach students to compare effectively before teaching the concept of similarities and differences. They suggested that teachers should begin to introduce the concept of comparison by providing a variety of structured comparison activities. Marzano et al. found that "some comparison tasks could be student-directed; graphic organizers, such as the Venn diagram and the comparison matrix; teacher and student-directed classifying; student and teacher directed analogies; and teacher and student-directed metaphors" (p. 23). The research of Marzano et al. suggested that students should learn how to compare prior to learning to understand similarities and differences.

Summarizing and note taking. Based on the work of Kintsch and van Dijk (in Marzano, et al., 2001), a reader does not take in all of what is read and substitute one idea while retaining some of the ideas. Kintsch and van Dijk stated that students must comprehend what has been read. Brown, Campione, and Day (in Marzano et al.) developed a strategy to help students comprehend and summarize what they read. They referred to it as a rule-based summary that taught students to exclude minute or repetitive details in the summary, and to substitute a super ordinate term for lists. The research of Brown et al. (as cited in Marzano et al.) concluded that "teachers could utilize summary frames which are a series of questions teachers provide for students to summarize information" (p. 32). According to Beecher (in Marzano et al.), notes taken word by word is not an effective strategy and summaries of notes should be used to study for tests. Kintsch and van Dijk (in Marzano et al.) concurred that summarizing is important in helping students comprehend what has been read and note taking is beneficial as a study guide for tests. The researchers concluded that summarizing and note taking are essential skills to support student learning and increase student achievement.

Reinforcing effort and providing recognition. According to Weiner, Covington, and Harter (in Marzano et al.), students' effort helped to increase student achievement. Covington and Harter (in Marzano et al.) concurred with Weiner in their research, that effort impacts the achievement of students. In the research of Weiner et al., (in Marzano et al.) when students had the opportunity to monitor their effort and use a rubric to chart their effort, student achievement improved. Brophy (in Marzano et al.) found that when teachers acknowledged the efforts of students, they understood that the harder they worked and tried, the more successful they became. The findings from Brophy's research

indicated that rewards do not affect motivation of students in a negative way. Rewards

are beneficial when they depend on some performance and giving symbolic recognition is

more effective than tangible rewards. According to Brophy, "providing recognition for

attainment of specific goals not only enhances achievement, but it stimulates motivation"

(p. 59).

Homework and practice. Cooper (in Marzano et al., 2001) noted that homework

amounts should be different for elementary and high school students. Cooper's research

indicated that students' homework and practice in elementary schools should be different.

The amount of homework given in the primary grades (students in kindergarten and

grades one, two, and three) should be different from students in the intermediate grades

(students in grades three, four, five, and six). Cooper stated that the amount of homework

should vary in elementary school, middle school, and high school. Cooper further stated

that parental involvement in homework should be minimal because homework is the

practice of what students mastered during the day. Cooper (as cited in Marzano et al., p.

63) concluded that "homework should include only the skills and activities that students

understand and that homework should be introduced, taught, and assessed for

understanding." The research of Cooper noted that homework and practice is important

but varies from each grade level and parents should be minimally involved because the

students are expected to practice what they have been taught.

Nonlinguistic representations. The research of Marzano et al. (2001) stated that

teachers should provide a variety of activities to help students understand nonlinguistic

representations. According to Marzano et al., activities should include opportunities for

students to see visual images of what is being taught. They stated that "various activities

include graphic organizers, physical models, generating mental pictures, drawing pictures and pictographs, and engaging in kinesthetic activities" (p. 73). The research of Marzano et al. concluded that nonlinguistic representations included in a variety of activities, enhanced student learning.

Cooperative learning. According to Marzano et al. (2001), grouping students began in St. Louis, Missouri in 1867 when an educator, Harris, began to promote students based on ability in early grades. Around 1900, Kulik and Kulik implemented a version of Harris' ability grouping. Thousands of American schools use this model for homogeneous grouping. Marzano et al. found that when students were grouped by ability, there was a small effect size and it appeared that all students were not taught effectively and low ability groups did not meet expectations for achievement. Oakes (in Marzano et al.) found a significant gap between low ability grouping, middle ability grouping, and high ability grouping. Therefore the researchers found that ability grouping was not an effective strategy for increasing student achievement.

Johnson and Johnson (in Marzano et al., 2001), leaders in cooperative learning research, advanced the following five principles of cooperative learning:

- positive interdependence – students should agree to perform the task and either sink or swim together;
- face-to-face supportive interaction – students should learn to support each other and give accolades throughout the process for efforts and success;
- individual and group accountability – each is responsible for his or her contributions and works towards achieving the goals of the group;

- interpersonal and small group skills – building a rapport with the group is vital in developing leadership skills, problem-solving, trust, and decision-making; and

- group processing – working and functioning together as a team to complete the tasks.(p. 86)

Setting objectives and providing feedback. According to the research of Marzano et al., (2001), instructional goals identify their specific focus. The instructional goals should be flexible to allow students the opportunity to meet with the teacher to plan their goals. They believed that "goals should be set by the teacher, the goals should be flexible, and general enough for students to understand" (p. 94). Further, contracts should be written by the teacher so students can understand their instructional goals. The research of Marzano et al. found that students can understand what they need to learn through instructional goals. Hattie (in Marzano et al.) found that an effective instructional strategy is to give students corrective feedback that is specific to the criteria. He stated that students have an opportunity to provide their own feedback. The research of Hattie and Marzano et al. indicated that students should have an opportunity to meet with the teacher to develop flexible and easily understood goals and that feedback can contribute to students' understanding.

Generating and testing hypotheses. Hansell (in Marzano et al., 2001) found that in order for students to develop and test their hypotheses, they must understand how to apply knowledge. According to Marzano et al., when students generate their hypotheses, their approach can be deductive or inductive. Johnson-Laird (in Marzano et al.) found that deductive thinking is using a general rule to predict what will take place. Holland (in Marzano et al.) found that inductive thinking involves the process of drawing conclusions

when information is presented. Lavoie (in Marzano et al.) believed that teachers need to have students explain specifically their hypotheses and their conclusions. Lavoie found that teachers should provide various activities to help students with problem-solving, investigations, and experimental inquiries. Hansell, Marzano et al., Johnson-Laird, Holland, and Lavoie concurred that "teachers should make sure students can explain their hypotheses and their conclusions by providing, for example, templates for reporting; providing sentence stems; and developing teacher and/or student-directed rubrics" (p. 110).

Questions, cues, and advance organizers. Alexander (in Marzano et al., 2001) found that questions and cues should focus on important ideas. According to Alexander, questions should be designed so that students can attain an in-depth understanding of the content. Fillippone (in Marzano et al.) found that when teachers asked higher-level questions, students had a deeper level of understanding as opposed to their level of understanding when teachers asked lower level questions. Further research from Tobin (in Marzano et al.) suggested that providing wait time allowed students time to generate deeper level questions. When teachers used questioning, students had an opportunity to create a visual image that increased their understanding of the skill. Hamaker (in Marzano et al.) stated that "higher-level questions can produce deeper levels of learning" (p. 114).

Ausubel (in Marzano et al., 2001) developed graphic advancers as a strategy to help students organize prior knowledge to learn new information. His research focused on students accessing information through visual images. Ausubel (as cited in Marzano et al., p. 118) concluded that "advance organizers should produce deeper learning and focus

on what is important." Ausubel's research on advanced graphic organizers emphasized the importance of teachers using advanced graphic organizers as a strategy to assist students in analyzing information and to produce a higher level of cognition.

Student-centered Teaching Attitudes

According to Marzano (2009), "interactive whiteboards have become an effective instructional tool in the classroom and they are connected to a computer and projector for the purpose of providing technological instruction that engages students in learning" (p. 80). Marzano supported the use of interactive whiteboards in the classroom as an effective strategy to involve students in interacting through technology. The research of Marzano concluded that students who were involved and interacted with technology during instruction increased their achievement. Students were able to interact with instruction through technology and there was a 16 percentile increase in their achievement. Marzano's research established that teachers should use interactive whiteboards to gain more student participation and increase student achievement.

The research of Bonwell and Eison (1991) focused on the goals of cooperative learning. They found that "cooperative learning can be structured to enhance student achievement and emphasized small groups of students working together in a structured process to solve an academic task" (p. 43). The structure of cooperative learning is critical to improving student achievement. The researchers focused on the goals of cooperative learning to include learning social skills and to increase student learning. Bonwell and Eison's cooperative learning research showed the significance of cooperative learning and its relationship to an increase in student achievement.

Crawford, Saul, Mathews, and Makinster (2005) stated that "cooperative learning promotes higher-order thinking and students are challenged to interpret and problem solve" (p. 48). Crawford et al. found that cooperative learning can motivate, increase morale, and develop improved academic understanding within the group. The research of Crawford et al. emphasized the significance of cooperative learning, provided opportunities for students to develop high-level thinking skills, and allowed students problem-solving time to develop cognitive skills that enhance student learning.

Gregory (2003) defined differentiation as "a philosophy that enables teachers to plan strategically to teach diverse learners in classrooms today and differentiation was a belief that teachers should provide individual instructional strategies to meet the needs of all students" (p. 27). Gregory believed that the learners' needs, student achievement, and ongoing team collaborative efforts are the focus of effective instruction. The school should focus on school achievement and everything about school should be centered on students acquiring knowledge and proficient skills to increase student achievement.

According to Wormeli (2007), educators should do whatever it takes to increase student achievement and realize that all students do not learn at the same rate and at the same time. Wormeli's studies showed that whole classroom instruction and a belief that one approach for everyone in the classroom is effective do not meet the needs of every student. Wormeli's research concluded that "relying on a one-size-fits-all is the whole-class method of instruction and prepares students to handle anything in their current and future lives is not differentiated instruction and all students do not learn" (p. 9).

DuFour, Eaker, and DuFour (2005) stated that "when educators embrace learning as the fundamental purpose of their school, they begin to recognize that some students

will require additional time and support in order to be successful" (p. 15). DuFour et al. believed that all students do not learn at the same time. They concluded that there should be a systematic process of providing scaffolds or learning goals as benchmarks on the road to assisting students in mastering skills and concepts.

According to Nordlund (2003), it is the responsibility of classroom teachers to help students stay organized, demonstrate effective strategies to promote learning, and provide the explicit steps in learning each task. Teachers and staff must work collaboratively to ensure that students receive effective instruction throughout the school day. Nordlund stated that "as specific learning strategies are taught through direct instruction, frequent opportunities to practice and use these strategies are essential" (p. 43). Nordlund's research concluded that organization of curriculum, teaching effective strategies, and teaching specific steps to attain learning are essential to students' progress.

According to Saphier (2005), "there are particular arenas of school life that involve interactive teaching behaviors: patterns of calling on students, responses to students' answers, giving help, dealing with errors, giving tasks and assignments, offering feedback, and displaying tenacity" (p. 90). Saphier's research stated that teachers should develop a system of calling on each student the same amount of times and should not lower expectations for any student. Wait time should be provided to give students who might not understand immediately an opportunity to think about the question. He emphasized that teachers should develop a systematic approach when students do not immediately respond to cueing, rephrasing the question, seeking more information, and validating any portion of the answer that is incorrect. Saphier also emphasized that when

teachers know that students are having difficulty, they should employ the interactive

teaching behaviors that support student learning.

Saphier (2005) centered on structures and procedures of grading and assessing

student performance based on the standards and the teachers' beliefs that students can

attain proficiency. Saphier stated that "classroom structures and procedures involves a

grading system that conveys to students that the school and teachers believe that the

standards matter and that students are capable of attaining high levels of achievement" (p.

94). The grading of students involved teachers using re-teaching opportunities as a

strategy to identify students that had not mastered essential skills. Saphier (2005) stated

that "students should have opportunities to revise their papers after feedback and to

retake tests to not only raise grades but to develop a better understanding of what they

need to learn" (p. 94). Saphier's research emphasized the importance of teachers

designing structures and procedures to evaluate student performance and to provide

opportunities to retake assessments not only to improve grades, but to learn what was not

learned initially.

Saphier (2005) found that "teachers must explicitly and directly teach students

how to manage time, how to focus themselves, how and where to go when they are stuck,

and how to use feedback" (p. 99). Students must have an explicit understanding of the

goals and instructional objectives. Teachers should ensure that the performance images

are clear and specifically identify the expectations of the students as they perform any

tasks. Modeling the expectations and performance standards provide students with an

explicit and clear understanding of what they need to know to increase student

achievement. The research of Saphier advanced his belief that teachers should explicitly

teach strategies and skills to improve student learning. It showed the significance of direct and explicit teaching to enhance the academic achievement of all students.

According to DuFour (2005), "the powerful collaboration that characterizes Professional Learning Communities (PLCs) is a systematic process that engages teachers in an ongoing cycle of questions that promotes team learning that analyzes and improves classroom practice which leads to higher student achievement" (p. 36). DuFour's research showed evidence that the professional learning community model is based on the staff's mission to ensure that students are taught and that students learn. DuFour believed that when the staff members envision success for all students and promise to commit to ensuring the success of all students, positive results take place. His research emphasized PLCs as significant professional models that focused on students' results, collaboration of team members, and strategies to increase the performance of all students. In fact PLCs provide teachers an opportunity to continuously identify student achievement, establish a goal to achieve at a higher level, collaborate to reach the goal, and provide data to check evidence of reaching the goal. DuFour's research focused on teachers improving their instruction, analyzing data to change their current instructional practices, and PLCs to promote collaboration, focus on results, and a commitment to the success of all students to increase academic performance.

Kelly (1985) noted that "teacher input is critical, adopting a student-centered approach to teaching is by no means a way of abandoning teacher responsibility, and it is important that teachers encourage children to become responsible for their learning" (p. 9). His research emphasized that while teachers' instruction is essential to student learning, a student-centered approach would allow students an opportunity to increase

their participation and become responsible for their own learning. Kelly's research indicated that teachers should structure student-centered activities carefully to raise the academic achievement of all students.

Experiential Learning Strategies

The research of Kolb (1984) centered on experiential learning that provides opportunities for students to connect instruction to their real life experiences. He defined experiential learning "as the act of learning through reflection of doing and as it relates solely to the meaning making process of the individual's direct experience" (p. 1). Kolb's research focused on the experiential learning strategies that support student learning and relate to their prior knowledge and experiences. Kolb emphasized the impact experiential learning strategies have on student learning and enhancement of student learning when it is connected to their real life experiences.

According to DuFour, DuFour, Eaker, and Many (2006), "our profession attests to the importance and power of learning by doing when it comes to educating our students and we want students to be actively engaged in hands-on authentic exercises that promote experiential learning" (p. 1). Their research emphasized that students learn best when they are involved in the learning process through hands-on activities which tend to promote active learning. Students are actively engaged in learning and teachers provide opportunities for students to explore relevant and meaningful concepts. The research of DuFour et al. found that experiential learning strategies involve students who are not just sitting and listening to teachers lecturing, rather they promote the utilization of non-traditional methods of teaching. Their research showed the significance of experiential learning strategies that promote teachers utilizing non-traditional methods which cause

student engagement in guided inquiry, the attainment of benchmarks which are incremental steps to learning, and provision of support and resources from the school community. Appendix A shows the major characteristics of experiential learning strategies.

The research of Blankstein (2007) focused on the need for teachers to allow students to construct their own understanding and actively engage in real-life experiences. He found that students had a better understanding of what they learned when actively engaged in experiential learning activities and that they retained the information that was learned. His belief was that students did not retain the knowledge when they just sat, listened, and did not actively engage in the learning process. Blankstein stated that "teachers provide many opportunities for students to construct their own learning, actively engage in authentic experiences, and students tend to understand and retain the knowledge rather than listening and not becoming active in the learning process" (p. 9). Blankstein's research provided evidence that experiential learning activities can enhance student learning and increase student achievement.

Standard Tests (Common Assessments)

The research of standard tests (common assessments) focuses on assessment as an instructional tool to improve teacher instruction and student learning. The researchers concurred that the results of assessment will provide feedback to teachers on students' progress: what students have learned and what students need to learn. According to Guskey (2007), "assessments are vital components in our effort to reform and improve education" (p. 27). In this review of literature, the researchers provide research on five types of assessments that are pertinent to this study: performance events, the bell curve,

the j-curve, and the mountain curve, formative assessments, common assessments, and depth of knowledge.

Performance events. The MAP test in Communication Arts is administered to students in grades three, four, five, and six in elementary schools. The assessment includes three types of questions: "selected-response, constructed-response, and performance events" (MO DESE, 2006, p. 1). Students are required to demonstrate their knowledge of skills and concepts by working through complex items and more than one approach can be used to obtain the right answer. The performance events provide insight into the students' ability to analyze and apply their knowledge to real-life problems. According to the Show-Me Content Standards/Grade Level Expectations (GLEs) required by the Missouri Department of Elementary and Secondary Education, students in Missouri public schools are expected to acquire a solid foundation that includes knowledge of and proficiency in

- speaking and writing Standard English;

- reading and evaluating fiction, poetry, and drama;

- reading and evaluating nonfiction works and material;

- writing formally;

- comprehending and evaluating the content and artistic aspects of oral and visual presentations;

- participating in formal and informal presentations, discussions of issues and ideas; and

- identifying and evaluating relationships between language and culture. (p. 2)

The Show-Me Process Standards are identified by the following goals. Goal one gather, analyze, and apply information; Goal two –communicate effectively; Goal three – recognize and solve problems; and Goal four – Take social responsibility. (MO DESE, 2006, p. 3) According to the research of Wiggins (1998), a performance standard defines the desirable and the expected level of achievement that students must know to demonstrate their understanding of the performance standard. Wiggins stated that if educators understand the expectations of the performance standards, they will set high expectations for their students, not lower their performance standards, and know that the standards are essential for increasing student achievement to ensure success for student learning. Wiggins concluded that "there are three kinds of essential standards: Content-what should students know and be able to do? Performance: How well must students do their work? Task (work-design) standards: What is worthy and rigorous work?" (p. 106). Wiggins' research provided educators with an understanding of standards and how essential these standards are in increasing achievement for all students.

The work of Wiggins (1998) centered on convincing teachers that reliance on test items was not the primary way to assess student understanding. Rather, Wiggins promoted the use of tasks for students to perform, which could become more complex as they gained understanding of these tasks. In fact, scaffolds or benchmarks could be used to reach a complexity that resulted in students using thinking skills to master whole performances based on successfully reaching benchmark goals associated with each task. The foundation behind Wiggins' research was the use of performance standards which were based on determining what students must understand and be able to do before designing lesson activities. According to Wiggins, "tests should teach, not just measure;

teachers must anchor their assessments in worthy, authentic performance problems tasks, and projects that point toward achievement" (p. 139). Wiggins' research showed the importance of performance tasks that would cause students to prove they understand.

The research of Wiggins and McTighe (1998) focused on backward design. Backward design calls for teachers to design lessons backward based on the end result desired (see Figure 1). Wiggins and McTighe found that teachers should have knowledge of the curriculum and standards for each grade level they taught. They maintained that "teachers using backward design would increase student learning" (p. 9). Wiggins' and McTighe's research showed that teachers have more success increasing student achievement when they know what students should know at the end of each lesson.

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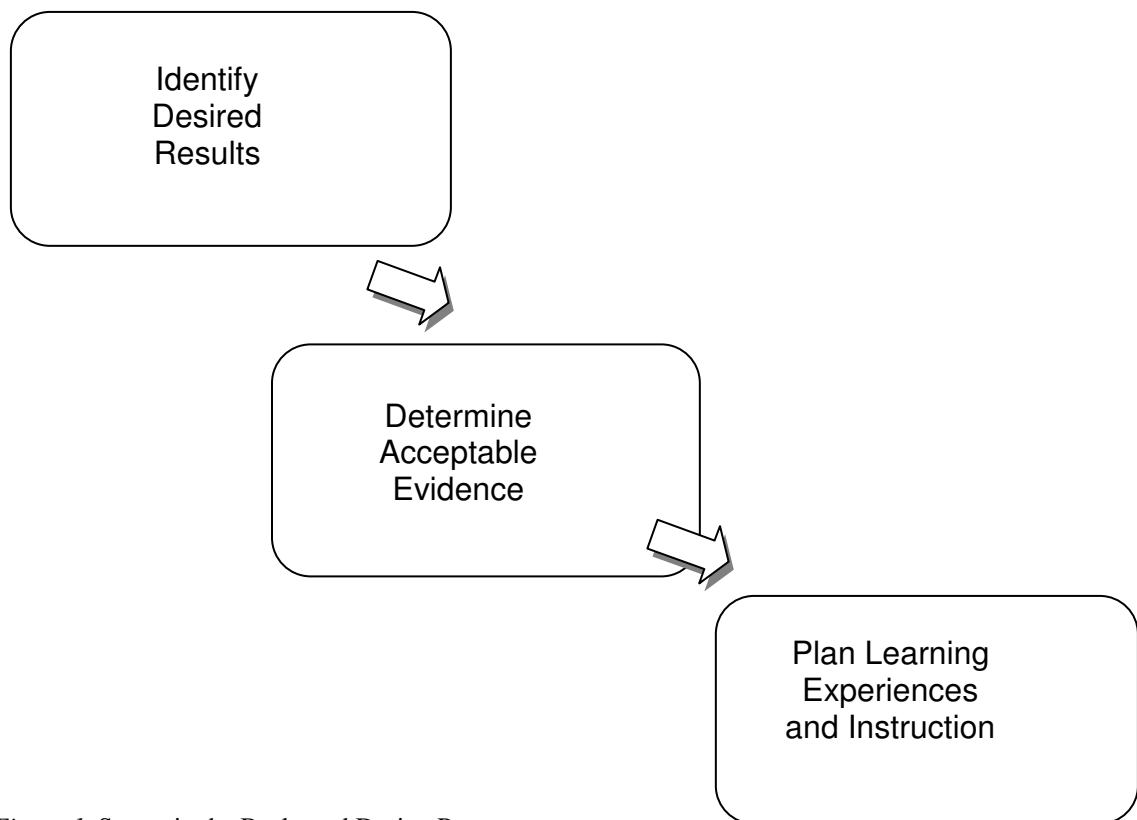
Figure 1. Stages in the Backward Design Process

According to Wiggins and McTighe (1998), the stages of the backward design process involve teachers first identifying the results they expect, then determining

acceptable evidence, and finally planning learning experiences and instruction. Wiggins

and McTighe suggested that teachers select the standards and determine the mastery level

expected. They stated that teachers write lesson plans to give opportunities for students to

master the standard. Their research focused on teachers designing tests to determine

students' mastery of the standards. The research of Wiggins and McTighe has provided

teachers with the knowledge and understanding of designing lessons with the end in mind

to ensure mastery learning.

The research of Ainsworth (2003) focused on teachers' understanding of the

standards and identifying the expected concepts and skills students should understand and

be able to do. Ainsworth stated that teachers should have knowledge of grade-specific

standards and have the knowledge to identify the big ideas and essential questions.

Teachers' knowledge of standards provides a focus for instruction and assessment.

Ainsworth and Viegut (2006) found that "teachers should identify the power standards,

check the state assessment data and state requirements to make necessary changes in

instruction" (p. 25). The research of Ainsworth and Viegut examined the relevance of

teachers' understanding of standards and how important standards are in measuring

student achievement.

The Bell Curve, the J-Curve, and the Mountain Curve. The research of Reeves

(2007) focused on schools and school districts not understanding the real purpose of

assessment. Reeves' research identified the purpose of assessment, effective instruction,

and decision-making by a leadership team. According to Reeves, "educators should look

at assessment, achievement, and equity in a different way and should understand that

providing knowledge is only one component of teaching" (p. 2). He concluded that the

purpose of assessment is to inform instructional decisions to improve student

achievement.
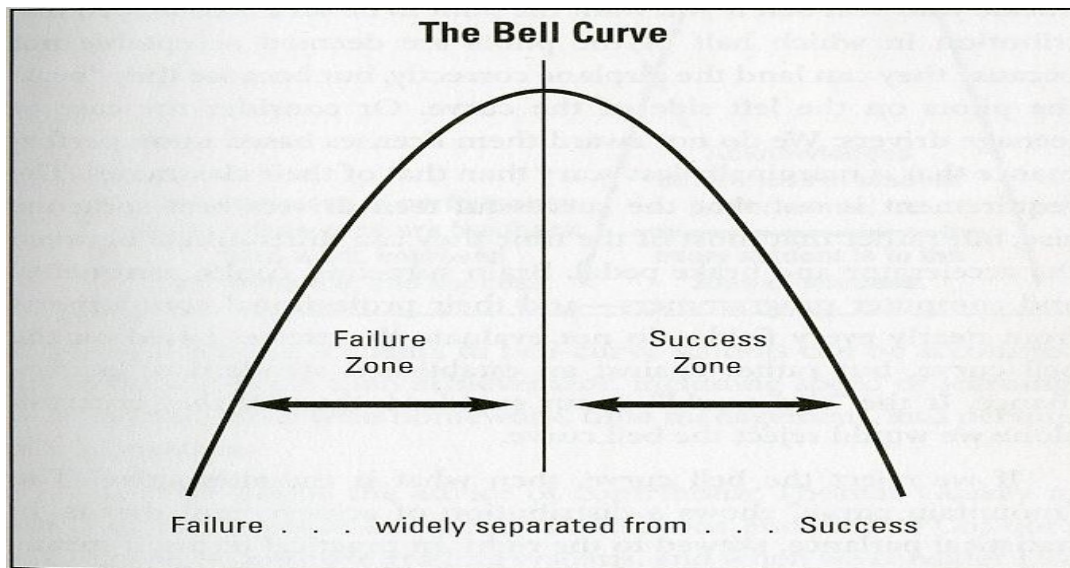
Figure 2. The Bell Curve.
Note. From Reeves, D. (2007). *Ahead of the curve*. Bloomington, IN: Solution Tree.

According to Reeves (2007), the bell curve (see Figure 2) evidences a wide

separation between success and failure of students on each side of the curve. Reeves

found that acknowledging a curve which is shaped like a mountain located exclusively on

the 'success' side of the figure allows all students to be on the same side of that curve

thus experiencing the same zone of success due to teachers focusing on teaching to

accomplish the specific standards (goals for learning) accompanied by ongoing

assessment feedback. The bell curve or normal curve distribution does have a place in

statistical analysis but the bell curve should not be the sole objective for classroom

management. The fundamental purpose of assessment is not to rate, rank, sort, and

humiliate students, but rather to provide meaningful feedback that leads to improved

performance. Reeves disagreed with the rationale of the bell curve and concluded "that

this is an ineffective assessment model that fails to acknowledge good performance, gives

unearned accolades to poor performance, and sits in stark contrast to the very essence of standards-based education" (p. 3).

Wiliam and Stiggins(2007) concurred with Reeves that "we do not need to use classroom assessment to sort and select students and conform to the bell curve" (p. 5). Wiliam and Stiggins found that the bell curve compares the performance of students to other students and does not compare students to a performance standard. In fact, they agreed that the purpose of assessment is for learning and not to compare performance.
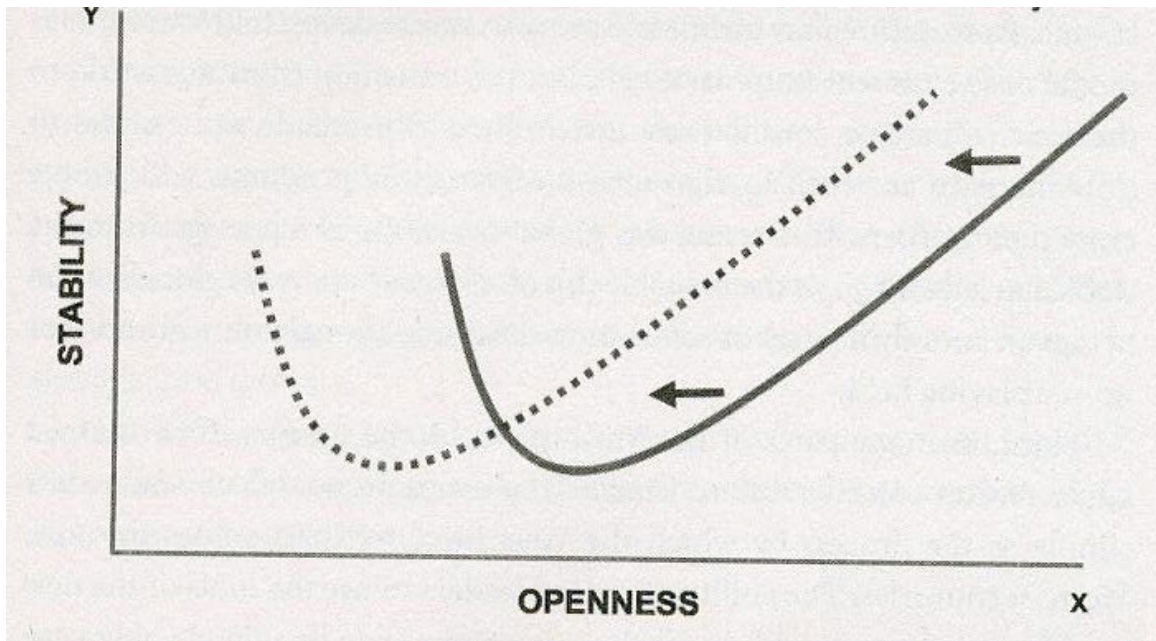
Figure 3. The J Curve.
Note. Reeves, D. (2007). *Ahead of the curve*. Bloomington, IN: Solution Tree.

In the research of Reeves, the 'J Curve' mentality is based on the philosophy that most students succeed. The J Curve makes a statement that achievement for all takes time, students should be helped until they are achieving, and all students can learn (see Figure 3). Reeves' research highlighted the Bell Curve as representative of a vast division of achievement in students which results in divisions within the school based on

determined ability through standardized testing. He maintained that the J-Curve can be

attained as a direct opposite result to the Bell Curve.
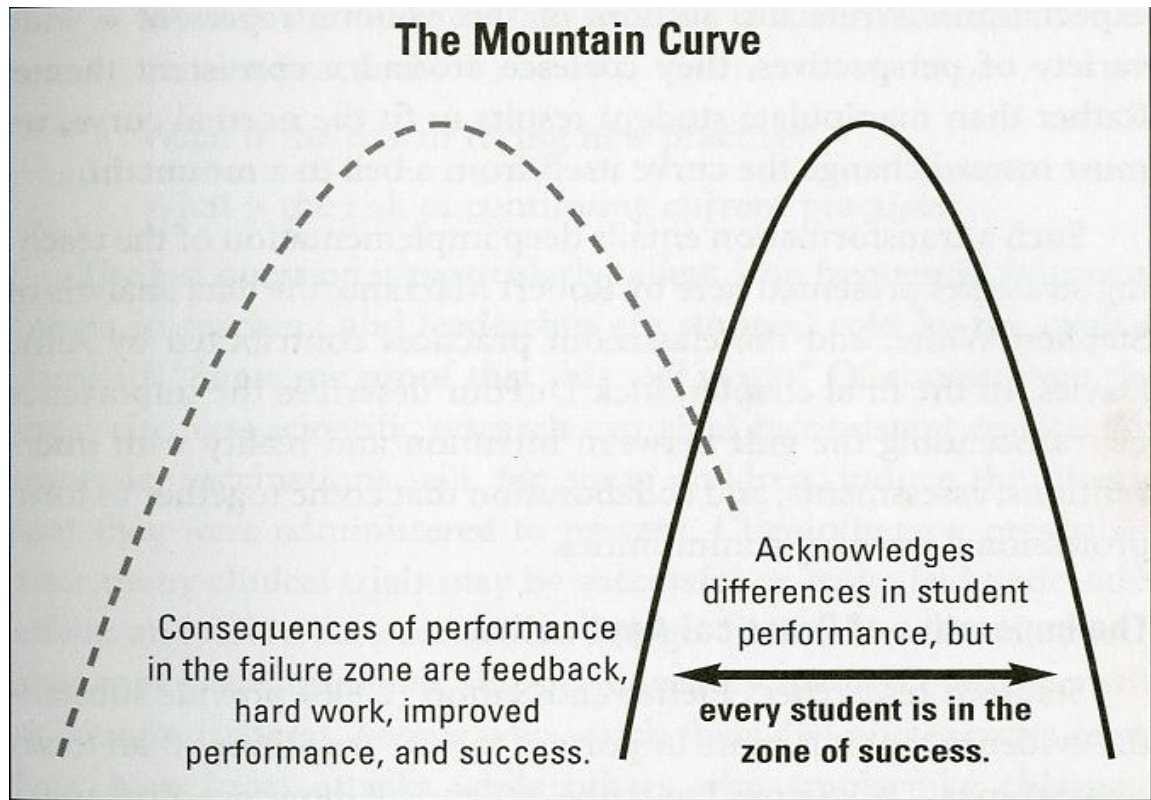
Figure 4. The Mountain Curve.
Note. Reeves, D. (2007). *Ahead of the curve*. Bloomington, IN: Solution Tree.

According to Guskey (2007), the most effective assessments are quizzes, tests,

and additional assignments that are given on a frequent schedule in the classroom.

Guskey stated that these assessments assist in monitoring improvements in instruction

and student learning. It was his position that the data collected from the assessments

informs instruction for the teacher to meet the instructional needs of all students.

Reeves (2007) focused on the mountain curve as an alternative assessment to the

bell curve that divides students mainly on the right and the left (see Figure 4). Reeves

found that while the bell curve divides students on the right and the left sides, the

mountain curve identifies student achievement and analyzes the differences only in their

areas of success. The mountain curve is centered on achievement while the bell curve simply represents the right and left sides of student performance. Reeves maintained that the mountain curve begins on the right side of the bell curve and it indicates that achievement is skewed to the right which means students are not divided into winners and losers, rather all students are to be acknowledged to be in a zone of achievement. Reeves stated that "we will find a growing number of student performances that are "ahead of the curve" and better described by the mountain than the bell" (p. 5). Reeves' research concluded that while the bell curve shows a division of students on both sides of the curve, the mountain curve shows a distribution of achievement which acknowledges student success, not failure.

Formative assessments. The research of Natriello (in Reeves 2007), focused on the effects classroom formative assessment has on raising student achievement. According to Natriello, "the regular use of classroom formative assessment would raise student achievement by 0.4 to 0.7 standard deviations-enough to raise the United States into the top five countries in the international rankings" (p. 189). Bangert-Drowns, Kulik, and Kulik (1991) found that assessing students frequently related to an increase in student achievement. They found that there is a positive relationship between the frequency of assessments and percentile points; the more assessments that are given indicated that the percentile points increased in student achievement. Their research indicated that teachers who administer ongoing classroom assessments can expect their students to gain percentile points which will show an increase in student achievement. Bangert-Drowns et al. supported the use of assessments on a frequent basis and reported that administering at least two assessments weekly or even more frequently can increase student achievement.

Bangert-Drowns et al. (1991) reviewed findings from 40 studies relative to classroom assessment and found that just telling students they were correct or incorrect was not beneficial and negatively impacted student learning. Their meta-analysis research revealed that if the teachers explained the correct answer and helped students to revise their answers, there was a 20 percentile point gain in their achievement. Fuchs and Fuchs (1986) found that when students' scores were posted there was a percentile gain and if a rubric, a scoring guide, was utilized student achievement increased. The researchers found that explaining correct answers, posting students' scores, and utilizing a rubric increased student learning.

Gregg (2007) focused on ongoing assessment that provided an opportunity for teachers to readjust their instruction to ensure that all students are learning. They stated that effective assessment should be daily and included in the classroom activities and teachers could use results to make well-informed decisions to increase student achievement. According to and Gregg, assessment should be an essential component of daily classroom lessons and activities. The research of and Gregg concluded that effective assessment should be included in instruction and the results of assessing student performance should assist teachers in making effective decisions to promote student learning.

Reeves (2006) stated that "assessment without analysis is like a pathologist conducting an autopsy on the same body over and over again, with the clueless physician wondering why the patient is not responding" (p. x). Reeves believed that assessments would identify students who need support and scaffolds to acquire knowledge and skills. Reeves' research showed that formative assessments without analysis does not impact

student achievement and is not formative assessment that teachers can use to improve instruction to increase student achievement.

Ainsworth (2003) focused on the main purpose of assessment as a strategy to assist teachers in adjusting their instruction to ensure that all students achieve. Teachers are expected to allow time to design ongoing assessment to consistently monitor student progress. Ainsworth and Viegut (2006) found that "teachers should administer formative assessments, over time, in small segments and the true value of assessment is its ability to help educators make accurate and timely inferences about student progress so they can modify instruction accordingly" (p. 83). The results from formative assessment show evidence of students' progress and can provide an indication as to how students will perform on summative assessments (end of course assessments). The research of Ainsworth and Viegut showed the significance of teachers measuring students' progress on an ongoing basis, making changes in their instruction when appropriate, and providing effective instruction to help students gain proficiency when formative and summative assessments are administered to assess student learning.

The research of Stiggins, Arter, Chappuis, and Chappuis (in Reeves 2007) focused on teachers assessing appropriately and utilizing assessments to make well-informed decisions to impact student achievement. Stiggins et al. found that "teachers could create quality assessments when starting with a clear purpose for assessment, a clear achievement target, and assessment that reflects and meets the purpose while results are communicated effectively" (p. 167). The research of Stiggins et al. emphasized formative assessments should show what students know and do not know so that both

teachers and students have the data to collaborate and make decisions that contribute to student achievement.

According to White (2007), teachers should work collaboratively to develop and design common, ongoing, and effective assessments. These assessments should include agreed-upon knowledge and skills to assist in student learning. He stated that formative assessments should be ongoing to assist teachers in identifying students who have mastered the skills and students who need additional instruction. White maintained that the power of assessment is to not just measure the progress of students, but rather the assessment should be embedded in the instruction throughout the process of learning. He found that effective assessments help the teachers to identify students who need further instruction and they create a relationship between curriculum, standards, instructions, and assessment. White concluded that "common assessments promote on-going collaboration opportunities for grade level, course, and department educators to meet regularly to discuss and share instructional practices that they can implement immediately in their classrooms to promote student achievement" (p. 95). White's research focused on the relevance of effective common assessments and the relationship of common assessments to curriculum, standards, and instruction in providing opportunities for students to achieve.

Marzano (2007) determined that "effective classroom assessment had the potential to enhance student achievement" (p. 103). He described four research-based findings to support effective classroom assessments:

- classroom assessment feedback should provide students with a clear picture of their progress on learning goals and how they might improve;

- feedback from classroom assessments should encourage students to improve;

- classroom assessments should be formative; and

- formative classroom assessment should be frequent. (Marzano, 2006, pp. 103-106)

Marzano's research examined the research-based findings to support effective classroom management as a strategy to enhance student achievement. Assessment feedback clarifies for the students what they are expected to learn and be able to do. Feedback motivates students to enhance their learning and classroom assessment must be formative to assist teachers in redesigning instruction as needed. Formative classroom assessments should be ongoing to ensure that students are learning what they need to know.

The research of Thompson and William (in Reeves 2007) centered on teachers administering formative assessments and using the results to drive instruction. Thompson and William (2007) stated that "teachers' instruction should be adjusted to the student's learning and assessment should meet the needs of the students" (p. 191). According to Thomas and William the results would provide teachers with the essential information so their instruction could be readjusted to enhance the academic progress of students.

Davies (2007) showed that students engaged in the assessment process are more encouraged to learn, they understand what they need to know,, and increase their student achievement level. Davies (2007) stated that "it is essential teachers increase the amount and quality of formative assessment in classrooms if teachers are to promote deep student involvement" (p. 36). Davies concluded that student engagement in the process of

assessments promotes learning and when teachers use effective quality assessment practices in the classroom, more students learn and more students achieve.

The research of Gregg (2007) focused on involving students in assessing their own learning by creating a rubric, a scoring guide to assess, and monitoring their own learning. A rubric could be created by students to use on a daily basis to ensure their progress. Gregg found that students should be given a sample of quality work to use as a guide to demonstrate what is expected of them. Gregg (2007) stated that "when introducing a new concept such as a rubric or scoring guide to students, teachers should base instruction on samples and materials at the student's ability level" (p. 171). Gregg's research focused on the importance of a rubric to engage students in learning to monitor and evaluate their own learning.

Common assessments. Stiggins (2007), found that "common assessments provide data for classroom teachers to analyze the progress of students and opportunities for teachers to motivate students allowing teachers additional time for educational booster shots" (p. 5). Teachers should analyze assessment data to determine if students have mastered the skills or concepts. If student mastery has not occurred, teachers can make time to provide additional instruction to ensure student mastery and ensure that students do not miss the target. The research of Stiggins showed the relevance of teachers assessing to be sure that all students have learned the skills or concepts and that teachers have time to provide additional instruction as needed.

Research conducted by Ainsworth (2006) discussed two characteristics of common formative assessments.

- common formative assessments are collaboratively designed and given by course or grade-level teams to all students throughout the school year; typically quarterly, semester, trimester, or the end of the school year.

- common formative assessments are created purposely to check the understanding of essential (power) standards. Common formative assessments include a mixture of question types: multiple-choice, selected response, constructed response for example. (p. 85)

Ainsworth and Viegut (2006) stated that "common formative assessments are designed to give students specific feedback on the clear target to be achieved, along with suggestions on how to reach that target on subsequent assessments" (p. 89). Ainsworth and Viegut defined assessment as a strategy that provided information to teachers about their students' performance and to assist them in making accurate instructional decisions about improving their performance. The research of Ainsworth and Viegut emphasized the significance of assessments as an instructional strategy to improve the proficiency of their students.

The research of Shepherd (2006) focused on the use of assessment as an ongoing strategy throughout the learning process. Shepherd found that the character and content of assessments needed to be improved and that the results from assessments must be the focus of ongoing learning. Shepherd's research emphasized a change in assessments to reflect it as a strategy to improve instruction and that assessment must be related to instruction to see an improvement in student progress.

Reeves (2002) proposed that "teachers should score common formative assessment collaboratively at least four times a year, once a quarter, if they want to see an

increase in student achievement" (p. 25). His research showed that common formative assessments given periodically throughout the year enhanced student achievement. Reeves' research concluded that teachers who adjust to this schedule of administering assessments on a timely basis yield positive data to assist teachers in making effective instructional decisions.

The research of Ainsworth and Viegut (2006) centered on teachers using common formative assessments as opposed to using large-scale assessments that were found to be ineffective unless aligned to standards. They advanced their belief that common formative assessments are effective when designed by grade level or department level teams collaboratively and administered at a designated time throughout the school year. They asked the purpose for educators assessing and found that teachers want to know if their students are making progress and learning what they are expected to learn. Ainsworth and Viegut stated that "common formative assessment results can provide immediate feedback to both teachers and students regarding current levels of student understanding" (p. 12). Ainsworth and Viegut believed that teachers should work together to grade the assessments, analyze the data, and identify strategies to improve student learning. Although Ainsworth and Viegut found that common formative assessments are new to the nation's educators due to the work of teachers in isolation, teachers are finding that working collaboratively to design, score, and analyze common assessments has increased student achievement.

According to Marzano (2006), "one of the strongest findings from the research is that the frequency of assessments is related to student academic success" (p. 9). Marzano found that assessment is an important in tool in assessing student progress. He found that

common formative assessments are essential in identifying strategies for improving academic performance. Marzano's research emphasized that common formative assessments can assist in identifying assessment strategies that will improve student performance.

The research of Eaker, DuFour, and DuFour (2002) focused on Professional Learning Communities (PLCs). One objective of PLCs was to support the structure of common assessments that gives teachers the autonomy to provide a variety of teaching methods in the classroom to inform instruction. Eaker et al. stated that "the variation in teaching styles is an asset to the school and teachers can learn to integrate different instructional techniques and styles" (p. 67).The members of PLCs can determine which techniques have been most effective after educators analyze the data. Eaker et al. asked one team to "develop common skeleton lesson plans and pacing guides for each unit because teachers agreed to teach the same concepts and skills, at the same time, and use common assessments to monitor students' mastery of those concepts and skills" (p. 67). The results were positive, showed that students were making progress, and using common assessment was effective in monitoring student achievement. Eaker et al. found that teachers could exercise autonomy in their instructional delivery of the skills and concepts. Common formative assessments provide teachers an opportunity to collaborate with team members and focus on test results. Eaker et al. concluded that "a significant school tool to build a PLC includes the process of clarifying essential outcomes, building common assessments, reaching consensus on the teachers' criteria to judge students' work, and working together to analyze data to improve results" (p. 22). The research of Eaker et al. examined the objectives of PLCs and found that they include teachers

reaching a consensus about the evaluation of students' work, identifying common assessments to be administered on a timely basis throughout the school year, understanding essential performance expectations, and collaborating to analyze assessment data to improve instruction and increase student achievement.

The research of DuFour, Eaker, and DuFour (2005) focused on the classroom teachers' use of individual teacher assessments and common assessments. Individual teacher's assessments should be included because good teachers assess daily to check for their students' understanding. DuFour et al. found that if teachers can understand the effectiveness of common assessments, individual classroom teachers' assessments should be included to monitor on a consistent basis. They stated that "not one, single assessment strategy gives teachers essential information needed to analyze the assessment" (p. 25). DuFour's research supported using more than one assessment to monitor students' learning to provide important information and data to effectively analyze student performance.

According to Guskey (2007), students should not be surprised by meaningful and relevant classroom assessments. Guskey found that the assessments should be aligned to the instructional activities that have been taught. Guskey stated that "the concepts and skills the teacher emphasized in class, along with the criteria the teacher provided for how he or she would judge student performance" (p. 18). Guskey further stated that classroom assessments should be designed to provide feedback to allow teachers an opportunity to reinforce instruction for students needing additional support and to improve the quality of their instruction. Guskey concluded that "assessments provide

teachers with specific guidance in their efforts to improve the quality of their teaching by helping identify what they taught well and what needs work" (p. 18).

Ainsworth (2007) found that assessment can be designed by teachers when they understand what students need to know, what they should be able to do, and can identify how well students understand the tasks, skills, and concepts. Common formative assessments provide grade level and department level teams opportunities to collaborate on an ongoing basis as they discuss and share effective strategies to incorporate into their lesson plans. Ainsworth stated that "persuasive, empirical evidence shows that properly formulated common assessments are used by teachers to improve both teaching and learning" (p. 99). The research of Ainsworth supports common formative assessment as an important factor in improving student performance.

According to the research of Ainsworth and Viegut (2006), the focus of common formative assessments is to provide clear feedback to students about expected achievement, ideas, and strategies to reach the expected level of achievement. They stated that teachers should inform students that a grade will not be given but the feedback will allow teachers to design a lesson that will meet the academic needs of students. Common formative assessments are utilized as pre-assessments to provide teachers with what students already know and what they need to need to learn. They found that pre and post designs of common formative assessments, the same test or an alternate form of the test, are frequently administered to students at the beginning of the school year and again at the end of the school year. Ainsworth and Viegut stated that "when individual classroom teachers align classroom performance assessments to common formative post-assessments that they have collaboratively planned and administered with their grade

level or department colleagues, increased student success on the post-assessments becomes a strong probability" (p. 51). Their research showed the significance of educators using pre and post common formative assessments, planning and collaborating with their grade level teams providing essential feedback to students about performance expectations and standards, creating opportunities for teachers to monitor student learning, and to make adjustments in instructional practices to increase student achievement.

The research of Ainsworth and Viegut (2006) centered on the recommendation that teachers should attend professional development activities to acquire skills in developing appropriate assessments in Communication Arts. The recommendation is based on their research that teachers are not prepared to effectively assess literacy and assessment of literacy should be aligned to the Communication Arts standards. They found that teachers need to understand that there are multiple assessments with multiple purposes and the most appropriate assessment should be selected to meet specific goals. Accordingly "learning how to design a variety of effective assessments, rather than over-relying on one particular type, educators become more inclined to utilize 'multiple measures' of student achievement" (p. 54). Their research examined the need for teachers to understand how to design multiple assessments for specific objectives to accurately assess students' performance and the relevance of teachers becoming more knowledgeable and confident in using multiple assessments to measure academic achievement. Appendix B shows the major types of assessments.

The research of Ainsworth and Viegut (2006) focused on teachers meeting collaboratively to discuss their students' test results from common assessments

administered periodically during the school year in each course. Ainsworth and Viegut found that common assessments are a valuable strategy in monitoring student progress to ensure consistency in the delivery of the curriculum. "If all the teachers in a particular grade level or department are teaching the same standards in their instructional programs, why not encourage teachers to cooperatively plan common assessments" (p. 39). Ainsworth and Viegut examined the importance of teachers administering common assessments periodically during the school year, monitoring to ensure student progress, and collaborating to review assessment data, thus ensuring an increase in student achievement.

The work of Wong and Nicotera (2007) centered on the relevance of using assessments to analyze student understanding and to ensure that teachers are using performance standards to improve student learning. Their research suggested that while there is significance in analyzing the data and making comparisons between students and schools, the main purpose of assessment is to improve teaching and student learning. The foundation behind their research was whether the assessment was from the state or teacher developed. If the assessments were aligned to the performance standards, teachers were able to help students improve their academic performance. "On-going evaluations in the classroom or the school, allowed educators the opportunity to identify student needs and make adjustments to instructional practices on a more regular basis" (p. 118). The research of Wong and Nicotera supported assessment as an important component of improving teachers' alignment of instruction to the performance standards and the improvement of student learning.

The research of DuFour, Eaker, and DuFour et al. (2006) focused on the value of common assessments in increasing student achievement. "By administering common assessments at the end of each unit teacher teams were able to identify students who need additional time and support for learning" (p. 265). Their research showed teachers who administer common assessments at the end of units are afforded an opportunity to identify students who need additional support to increase student achievement.

The research of Bloom (in Anderson & Sosniak, 1994) examined the use of assessment as an instructional tool to provide additional strategies and give essential feedback to improve student learning. The feedback informs teachers of instructional choices to make to effectively enhance student learning and helps students master the skill they did not learn.
Bloom developed a system known as mastery learning that entailed the following philosophy.

- learning is best conceived as a process;

- the learner must possess and use analytical skills to conceptualize the experience;

- the process of learning requires the resolution of conflicts;

- learning is a holistic process of adaptation to the world;

- learning involves transactions between the person and the environment; and

- learning is the process of creating knowledge. (in Anderson and Sosniak)

Depth of Knowledge. Webb's (2007) Depth of Knowledge (DOK) is a model adapted by Webb, University of Wisconsin, to align standards with assessments. It has been used by more than ten states for assessment alignment. "DOK consistency measures

the degree to which the knowledge elicited from students on the assessment is as complex

within the context area as what students are expected to know and do as stated in the

curriculum/Grade Level Expectations/Show-Me Standards" (p. 4). He listed the four

levels as level one recall, level two as skill/concept, level three as strategic thinking, and

level four as extended thinking. Webb defined DOK as a "systematic approach that

revolves around measurement, content-related evidence of validity which tells educators

whether a test accurately measures students' possession of the skills and knowledge

embodied in whatever curricular aims the test assesses" (p. 81). The Missouri Assessment

Program (MAP) is administered to grades three through six in the elementary schools.

When the MAP is scored, there is a DOK score for each test item. Each test item is

identified as level one, two, three, or four. This information is useful for teachers to

analyze each student's depth and knowledge and to assist teachers in identifying their

instructional focus.

Table 2

Benjamin Bloom's Taxonomy and Norman Webb's Depth of Knowledge

Bloom's Taxonomy	Webb's DOK
Knowledge	Recall
"The recall of specifics and universals, involving little more than bringing in mind the appropriate material"	Recall of a fact, information, or procedure (e.g., What are three critical skill cues for the overhand throw?)
Comprehension	
"Ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without a verbatim repetition."	
Application	Skill/Concept
"The use of abstractions in concrete situations."	Use of information, conceptual knowledge, procedure, two or more steps, etc.
Analysis	Strategic Thinking
"The breakdown of a situation into its component parts."	Requires reasoning, developing a plan or sequence of steps; has some complexity, more than one possible answer
Synthesis and Evaluation	Extended Thinking
"Putting together elements and parts to form a whole and making value judgments about the method."	Requires an investigation; time to think and process multiple conditions of the problem or task.

The research of Webb (2007) focused on DOK, the role it plays in instruction in the classroom, and the difficulty and complexity of assessment items. If students do not have the ability or the skill to answer difficult assessment items, this becomes their level of difficulty. According to Webb, difficult items are challenging and require effort to understand and solve. Webb explained that more difficult items indicate the expectation of the item and the process involved in reaching a solution. Webb further explained that students answering more difficult items indicate a higher level of achievement on the MAP. Webb's research concluded that when a DOK level is assigned, teachers should consider what the students are expected to know and should analyze the complexity of the item, versus the difficulty of the item, since the MAP Scale Scores increase based on the complex test items answered proficiently.

According to Bloom (in Anderson and Sosniak, 1994), "the taxonomy is now organized into six major classes: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation" (p. 15). The taxonomy was developed to help teachers organize their level of instruction from lower level instruction to higher level questions motivate students to activate their mental capabilities on a higher level. Bloom's research emphasized to teachers promotion of the acquisition of knowledge on a higher level rather than memorizing information.

Anderson and Sosniak (1994) stated that "Bloom's handbook, The Taxonomy of Education Objectives, Handbook 1: Cognitive Domain was first introduced at an informal meeting with college and university examiners developed to assist college and university examiners and became a basic reference for all educators" (p. 1). Anderson and Sosniak found that Bloom's Taxonomy was used by educators to systemically categorize and

evaluate student learning. Their research showed that too much focus was on the lowest level of the Taxonomy-Knowledge. At least 90 percent of teachers' instructional level is at this level and little or no time was spent at the higher cognitive levels that will help students process at a higher level. The research of Anderson and Sosniak showed most teachers had been beaming instruction on a lower level but that in recent years the focal point of instruction was gradually moving to a higher level.

Good and Brophy (1991) centered on teachers using higher level questions to help students focus more on essential ideas and concepts. "Teachers who want to teach for understanding and higher-order applications of subject-matter content have to limit what they try by focusing on important ideas and structuring what they do teach around important ideas" (p. 451). The research of Good and Brophy emphasized that higher-level questions should be used to encourage students to evaluate information, problem-solve, analyze information, and make applications as strategies to increase their academic learning.

Teacher Efficacy

According to Jeff Howard (1992), founder and President of the Efficacy Institute getting smarter and learning new material is developmental. His research suggested that intelligence is not something we are born with and that socioeconomic status should not determine the achievement level of students. Howard's belief was that all students could learn and he shared this belief with all teachers during training at the Efficacy Institute. The Efficacy Institute provided in-depth training and methods for teachers to apply in the classroom throughout American schools in the 1980's. According to Howard, Efficacy training instills in educators the belief that all children can learn and that they possess the

ability to achieve at high levels through their own efforts. It focuses on the low

achievement of poor children in urban schools while implementing strategies to motivate

all students and change the beliefs of teachers who set low expectations for students. It

helps teachers provide strategies to motivate children to become responsible for their

learning. The Model has been instrumental in raising the achievement level of students

who are perceived to be low achievers. Howard's research data counters the statements

made by teachers who do not believe that all children can learn.

During the twenty-first century, the work of Howard and the Efficacy Institute is

still prevalent in education. The Institute advocates national proficiency and strives to

help school districts meet the goal of No Child Left Behind: all students should be

proficient in Communication Arts by 2014. Diane Jackson (in Howard, 1992), an

Efficacy coordinator for a public school system, assisted in training teachers and parents

in the model and maintains that all students can learn. She believes that student

achievement will increase if teachers set high expectations for all students. According to

Jackson (in Howard) "building the confidence level of students inspires them to exert the

necessary effort that lead to high academic development, increase confidence level, and

student success" (p. 2). Teachers' and parents' beliefs about students can increase student

achievement despite factors believed to interfere with learning.

Gibson and Dembo (1984) focused on teachers' beliefs in instructional efficacy

and how their beliefs affect student achievement. They stated that "classroom atmosphere

is determined by teachers' beliefs in their instructional efficacy and their knowledge of

creating mastery experiences for their students" (p. 579). They focused on teachers who

created mastery learning experiences based on their belief that all students in their classroom can learn.

The research of Distad and Brownstein (2004) focused on efficacy and defined efficacy as the teachers' expectation and belief that all students who enter any classroom can learn. They discovered that teachers with high efficacy believe that they can teach the essential concepts and skills to promote student success. Teachers with a sense of efficacy are confident, believe that they can teach because they are convinced they have a variety of effective teaching skills, and continue to teach even when they don't feel successful the first time. Their research supported that teachers with a sense of efficacy use a variety of instructional strategies to promote student success and do not give up when at first they might not succeed. The researchers concluded that "teachers with a strong sense of efficacy believe they are skilled at managing and organizing a classroom and organization and classroom management should not be left to chance" (p. 8).

The research of Jerald (2007) determined that teachers with a high sense of efficacy are highly organized, more flexible in trying new ideas and instructional strategies, and willing to take additional chances when the strategies or ideas do not work initially. "Teachers with a strong sense of efficacy demonstrate high levels of planning and organization, are more open to ideas, are risk takers, more resilient, and persistent when there are times when ideas don't go exactly right the first time" (p. 24). Jerald's research showed that teachers with high efficacy plan well, are organized, flexible, and consistent and are willing to take risks to ensure that student learning takes place.

Von Frank (2009) found that efficacy could overcome classroom barriers and that a staff beliefs in all students can increase student achievement (p. 6). He reported that a

26-year veteran of a high achieving school noted that teachers believed that their students could achieve and their discussions centered on high student achievement for all students and this became a part of their mission. When teachers believe that all students can reach their highest potential regardless of any factors, they do make a difference in the academic achievement of their students.

The work of Bandura (1995) focused on the beliefs of teachers with a sense of efficacy. The teachers believe that all their students could learn and that they are responsible for increasing their cognitive development. Bandura believed the atmosphere in the classroom is determined by a teacher's self-efficacy. Bandura stated that "the task of creating environments conducive to learning rests heavily on the talents and self-efficacy of teachers" (p. 19). Bandura further stated that the collective self-efficacy of the staff could predict the academic performance of the school at the end of the school year. Bandura concluded that "with staffs who firmly believe that students are easily motivated and teachable, schools heavily populated with poor and minority students achieve high levels on standardized measures of academic competencies" (p. 21). Bandura's research showed the relevance of all staff working collaboratively to ensure the success of every student regardless of any circumstances.

The Relationship between Teacher Expectations and Student Achievement

Teacher Expectations and Student Achievement (TESA), inspired by studies conducted by Good and Brophy (in R. Green, 2005), is based on expectation theory. The program is a well-known staff development program that trains teachers to focus more on low achieving students. It focuses on the theory that high achievers receive more attention due to their willingness to volunteer correct answers. Good and Brophy

discovered that teachers do not want to call on all students, particularly the students they perceive do not know, and fear the students will be embarrassed because they do not know the answer. Thus TESA focuses on setting high expectations for all students. Their research examined the relationship between teachers' expectations and student achievement. "Teachers formed expectations based on gender, race, body size, socioeconomics, surnames, and other criteria they believed were indicators of an academically challenged student and if the label was negative, that could affect teachers' expectations" (p. 27). TESA affirms that all students should be expected to achieve and that with teachers' instructional support and high expectations for all students, all should achieve.

Merton (1948), a sociologist, first coined the word 'self-fulfilling prophecy' that leads teachers to set positive or negative expectations of students at the onset of the course. Merton found that if teachers set high or low expectations, this affects students' academic performance. Merton promoted a five-step process to explain the self-fulfilling prophecy (In Appendix C).

Rosenthal and Jacobson (1968) found that what teachers expect of students has a great impact on students and the researchers termed this the Pygmalion effect, the Rosenthal effect, or self-fulfilling prophecy. They conducted a study in the 1960's and described their findings in the book, *Pygmalion in the Classroom.* They examined how teachers' beliefs affect student performance. Their research revealed that when teachers perceive that their students are bright students, they treat them in a positive way, provide effective instruction, and increase student achievement. The research of Rosenthal and Jacobson generated significant implications for teachers and principals: "what teachers

and principals believe about their students tended to happen and if teachers and principals

expect much from students, they will achieve much, and if little is expected, they will

achieve little" (p. 91). Their research showed that setting high expectations can increase

student achievement.

The research of Beez (in Green, 2005) and Ashton (1984) centered on the

teachers' expectations of their students and how students will not achieve if teachers set

low expectations and will achieve if high expectations are set. Students are not given

opportunities to achieve and learn new information once teachers set low expectations.

The work of Beez emphasized that once teachers set high expectations, students are

provided opportunities to learn new information. Ashton , in her research, "stated two

assumptions about teacher expectations: teachers who believed that students could learn

the material to complete their academic assignments and teachers who believed that

students could learn with his or her support" (p. 26). The research of Beez and Ashton

showed the significance of teachers setting high expectations for all students who could

learn the material independently or with their support to increase student achievement.

According to Brehm and Kassin (1996), there are teachers who seem to

understand the Pygmalion effect that students will achieve if high expectations are set by

the teacher. Teachers understand that the self-fulfilling prophecy can motivate students to

work harder to improve student learning. When teachers set high expectations for

students, the students try to live up to those expectations by working harder to increase

student achievement. However, Brehm and Kassin found that not many educators

understand how to set and attain high expectations for students. Tauber (1998) stated that

"teachers form expectations on the first day of school and some students are at a definite

advantage, while still others are at a definite disadvantage" (p. 3). Their research

concluded that teachers should set high expectations for all students to promote student

improvement.

The research of Gonder (1991) showed that when teachers set low expectations

for their students, their students do not achieve. He found that students with low self-

esteem and lack of motivation do not try to achieve when teachers have low expectations

of their ability to acquire knowledge. Gonder's research revealed that low expectations

can be a self-fulfilling prophecy; when teachers present a lower level curriculum it is not

motivating, and students do not increase their learning. Asa Hilliard III (1991) stated that

"teachers' expectations are often low based on their negative perception of students'

socioeconomic status, gender, race, and other societal issues" (p. 49).

Jussim and Eccles (1992) conducted a longitudinal study which concluded that

setting high expectations is a self-fulfilling prophecy. Students live up to what teachers

expect them to know and learn. They stated that "teachers who effectively used the self-

fulfilling prophecy in a positive manner, helped students set high expectations for their

learning to improve student achievement" (p. 947).

Bamburg (1994) found that setting high expectations for all students can have a

positive impact on student achievement. His research did establish that an essential part

of student success in the classroom is the teachers' expectations of high academic

performance. Bamburg concluded that setting high expectations for all students can

impact student achievement.

Effective teachers set high expectations for all students and maintain the same

attitudes towards students regardless of race, gender, socioeconomic level, and ethnicity.

According to Omotani and Omotani (1996), effective teachers should provide effective instruction to enhance academic progress without lowering expectations. They concluded that effective teachers should provide instruction that will enhance student achievement for all students.

Ferguson (in Green, 2005) found in his research that teacher expectations existed from a variety of sources. Teachers set low expectations based on factors that should not stifle their commitment to meet the academic needs of all students. Ferguson stated that "student history, physical attractiveness, handwriting and apprehension about writing, communication and speech patterns, and participation in extracurricular activities were found to be sources that affected teachers' expectations" (p. 28). Ferguson determined that teachers' expectations aren't based on academic expectations, but on factors they perceive are negative influences on student achievement.

The research of Schilling and Schilling (1999) focused on teachers setting high expectations for all students. They found that a tone of high expectations is essential for the success of students and enhances students' learning. When students are told that they are expected to achieve at high levels, they work harder and their performance is at a higher level as opposed to teachers having lower expectations that could affect achievement negatively.

Green (2005) found that an effective, high performing, academically successful school sets high expectations for students. Green's research and experiences showed that academic achievement is at a high level, the staff has a genuine belief that all students can achieve, teachers set high expectations, and teachers go above and beyond to provide a successful education for all students. Green's belief was that high expectations can

increase student achievement. Boyd (in Ainsworth and Viegut, 2006) stated that "no one rises to low expectations" (p. 111). Green's research concluded that high expectations are essential to the success of students and enhanced student learning.

Summary

The review of literature included research on the concepts of how children learn, Marzano's instructional strategies, student-centered teaching attitudes, experiential learning strategies, standard tests, teacher efficacy, and the relationship between teacher expectations and student achievement. Each of the concepts related to examining the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The researchers identified teaching factors that could increase student achievement in Communication Arts.

Chapter Three focuses on the quantitative data, MAP data for the past three years and responses from the Likert Scale open-ended questions, perceptions of the research participants, the research questions, sampling procedure, instrumentation, research design and research perspective on the qualitative summary that included the analysis of the open-ended responses from the survey "*What Makes Your Classroom Work?"*

Chapter Three – Methodology

The purpose of this collaborative study was to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The collaborators believed that the need for this study was to identify the existence of teaching factors that could increase student achievement on a standardized test, the MAP, administered by the state of Missouri. The study could add to the body of research on effective teaching to increase student achievement and provide a framework for professional development practices based on the specific questions addressed on the teacher survey. The study included research on how children learn, Marzano's instructional strategies, student-centered teaching attitudes, experiential learning strategies, standard tests and common assessments, teacher efficacy, and the relationship between teacher expectations and student achievement.

The collaborators believed that the need for this study was based on identifying the existence of teaching factors that top performing teachers of students in grades three through six utilized to increase student achievement in Communication Arts. The superintendent of the study district identified the top performing teachers with a large percentage of students who scored in the advanced or proficient range in Communication Arts during the three study years. The study district, like many school districts, is faced with making Adequate Yearly Progress (AYP) under the No Child Left Behind (NCLB) mandate of 2002. This new legislation placed an emphasis on a teachers' accountability plan that would focus on increasing student achievement in Communication Arts. School districts are expected to reach the achievement target set for 2014 with 100% of students in grades three through six proficient or advanced in Communication Arts.

The hypotheses were as follows:

Null Hypothesis #1: There is no difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Alternative Hypothesis #1: There is a difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Null Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are not the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching, and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to the teacher survey questions.

Alternative Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching, and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to the teacher survey questions.

The research questions were as follows:

1. What is the impact of standard classroom tests (common assessments) during instruction on improving student achievement in the Communication Arts section of the MAP?

2. What is the impact of experiential learning strategies on improving student achievement in the Communication Arts section of the MAP?

3. What is the impact of student-centered teaching attitudes on improving student achievement in the Communication Arts section of the MAP?

Subjects

Participants in the study were identified by determining those teachers whose students consistently achieved, over a three-year period, proficient or advanced scores on the Communication Arts section of the MAP. The Director of Research and Evaluation in the study district disaggregated the MAP data to identify teachers in grades three through six whose students scored in the proficient or advanced range (648-790). The superintendent discussed and shared the list with administrators including the collaborators in the study district. The collaborators used the list to identify the third through sixth grade teachers whose students achieved proficient or advanced MAP Scale Scores during the study years, 2007-2009.

Study District

Table 3 represents the number of elementary, middle, high, and alternative schools in the study district.

Table 3

Number of Schools i*n the Study District*

Elementary	Middle	High School	Alternative
17	3	3	1

Note: Study District's Research and Evaluation Department

Table 4 represents the number of teachers of students in grades three, four, five, and six in the study district during the 2007, 2008, and 2009 school years.

Table 4

Number of Teachers of Grades Three, Four, Five, and Six in the Study District

	2006-2007 School Year	2007-2008 School Year	2008-2009 School Year
Grade 3	53	51	46
Grade 4	49	47	47
Grade 5	48	49	46
Grade 6	52	48	45

Note: Study District's Research and Evaluation Department

Table 5 represents the enrollment of students in grades three, four, five, and six in the study district during the 2007, 2008, and 2009 school years.

Table 5

Enrollment of Students in Grades Three, Four, Five, and Six in the Study District

	2006-2007 School Year	2007-2008 School Year	2008-2009 School Year
Grade 3	856	871	876
Grade 4	844	867	889
Grade 5	832	832	859
Grade 6	948	830	831

Note: Study District's Research and Evaluation Department

Table 6 represents the number of students by ethnicity in grades three, four, five, and six in the study district the 2007, 2008, and 2009 school years.

Table 6

Enrollment of Students in Grades Three, Four, Five, and Six in the Study District by Ethnicity

Ethnicity	2006-2007 School Year					2007-2008 School Year					2008-2009 School Year				
	Alaska Native	Islander	Hispanic)	Hispanic Hispanic	Hispanic) Hispanic	Alaska Native	Islander	Hispanic)	Hispanic Hispanic	Hispanic) Hispanic	Alaska Native	Islander	Hispanic)	Hispanic Hispanic	Hispanic) Hispanic
Grade	0	10	660	13	173	0	12	668	9	182	1	6	708	13	148
Grade	0	11	644	9	180	0	10	690	13	154	0	12	696	8	173
Grade	1	10	649	8	164	0	9	657	8	158	0	8	684	17	150
Grade	0	8	741	14	185	1	8	656	12	153	0	10	654	6	161

Note: Study District's Research and Evaluation Department

Table 7 represents the gender report for students in grades three, four, five, and six in the study district during the 2007, 2008, and 2009 school years.

Table 7

Gender Report 2006-2009

	2006-2007 School		2007-2008 School Year		2008-2009 School Year	
	Female	Male	Female	Male	Female	Male
Grade 3	402	454	438	433	439	437
Grade 4	406	438	417	450	434	455
Grade 5	386	446	399	433	420	439
Grade 6	433	515	380	450	400	431

Note: Study District's Research and Evaluation Department

Table 8 represents the number of individualized education plans and non-individualized education plans for each gender in grades three, four, five, and six in the study district during the 2007, 2008, and 2009 school years.

Table 8

Number of Individualized Education Plans and Non-Individualized Education Plans for 2006-2009

IEP/Non	2006-2007 School		2007-2008 School Year		2008-2009 School Year	
	IEP	Non IEP	IEP	Non IEP	IEP	Non IEP
Grade 3	145	711	118	753	127	749
Grade 4	146	698	144	723	124	765
Grade 5	140	692	143	689	147	712
Grade 6	167	781	138	692	126	705

Note: Study District's Research and Evaluation Department

Table 9 represents the free and reduced lunch student count for students in grades three,

four, five, and six in the study district during the 2007, 2008, and 2009 school years.

Table 9

Free and Reduced Lunch Student Count for Students in Grades Three, Four, Five, and Six

	2006-2007 School Year		2007-2008 School Year		2008-2009 School Year	
FRL/Non	FRL	Non FRL	FRL	Non FRL	FRL	Non FRL
Grade 3	548	308	589	282	614	262
Grade 4	539	305	584	283	607	282
Grade 5	539	293	554	278	586	273
Grade 6	600	348	548	282	559	272

Note: Study District's Research and Evaluation Department

Sampling Procedure

The collaborative study examined the relationship of standard tests, experiential

learning strategies, student-centered teaching attitudes, and student achievement in

Communication Arts. The collaborators, Clay and Simms, contacted the principals of the

top performing teachers. With the support of the elementary school principals, the

collaborators met with 35 top performing teachers of students who taught grades three,

four, five, and six to discuss the study. The collaborators informed the teachers that the

district's superintendent had granted permission to conduct the study to examine the

relationship of the teaching factors that could increase student achievement in

Communication Arts. The consent form granting permission from the study district's

superintendent is in Appendix D. Each collaborator is currently serving in the capacity of

school principal or served as a principal in the past. Each collaborator worked within her

school to explain and administer the survey. The "What Makes Your Classroom?" survey

is included in Appendix E. The collaborators met with teachers to explain the purpose

and content of the survey. The collaborators reviewed the directions and the surveys were

given to the teachers to use the Likert Scale to reply to the statements and to answer the

accompanying open-ended questions. The collaborators asked teachers to sign an

"informed consent for participation" letter to acknowledge their participation in the study.

The Informed Consent for Participation in Research Study form is included in Appendix

F. The teachers were informed that this study was voluntary, all answers were

anonymous, and they could opt out of the process at any time. Teachers completed the

surveys, responded to 11 statements using the Likert Scale and answered the open-ended

question after each statement. The teacher survey was returned to the collaborators. The

collaborators retained and secured the surveys in a locked file cabinet.

Research Setting

The research setting was the various schools in which the participants worked.

The researchers met with each participant to explain and administer the survey and open-

ended question component. The collaborators received the 35 surveys from the

participants at the various schools.

Instrumentation

The researchers conducted their study with a survey containing 12 statements

with accompanying open-ended questions. The statements and open-ended questions

examined the relationship between standard tests, experiential learning strategies,

student-centered teaching attitudes, and student achievement in Communication Arts.

Participants ranked their answers to the survey questions using a Likert Scale consisting of the following responses:

1. Infrequently

2. Some of the time

3. Most of the time

4. Always

Each survey question was followed by an open-ended question that required the participants to explain in writing their understanding of the question and their ranking of its presence in their teaching.

What Makes Your Classroom Work? The 'What Makes Your Classroom Work?' survey was developed by Emrick, and is contained in Appendix E, to assist the researchers in gathering the following feedback as evaluated by the use of a Likert Scale. Each survey statement was followed by an open-ended question as shown.

- I know when my students need help in my classroom.

- How soon do you know when your students need help?

- I design my lessons based exactly on what I want my students to understand and be able to do.

- How do you determine what students must understand and be able to do?

- My lesson activities are focused on the expected end result of the lesson.

- How do you organize student activities which focus on the desired end?

- I provide demonstrations of the expected learning outcome for my students.

- How important are demonstrations to learning in your lessons?

- I model the expected skills that my students are to learn in my lessons.

- How and when do you provide modeling of the expected skills?

- I provide continuous guided practice during my lesson.

- What is most important to you about guided practice?

- I give my students ongoing feedback based on their attainment of benchmarks (learning goals) throughout each lesson leading toward the expected performances.

- Why is ongoing feedback (assessment) important to you in your lessons?

- I design my lessons to ensure student understanding.

- How do you ensure student understanding?

- I use available technology in my classroom to enhance student learning.

- Why is technology important to you in teaching students to successfully learn?

- I believe that all my students can learn.

- What must a teacher do to make the statement/belief true?

- When I give a test I already know how my students are going to be successful.

- How do you know?

- Which (list three) teaching/learning strategies do you find to be the most effective for you in teaching students to learn?

Communication Arts Content Standards

The Outstanding Schools Act of 1993 motivated master teachers, parents, and policy-makers from the state of Missouri to develop academic standards to include students building skills and knowledge to problem-solve, become effective decision-makers, and utilize these skills throughout life. These academic standards were established so that students would not just learn material to pass tests, but would be able

to develop lifelong skills. School districts use these standards to develop challenging curriculum so that students can achieve on an advanced or proficient level. School districts can structure their own curriculum and decide on the best delivery of instructional methods. There was a collaborative effort from teachers across the state in developing a framework in the content areas to integrate and teach Communication Arts across the curriculum. The academic standards are grouped around the following four goals.

- Goal one- Students in Missouri public schools will acquire the knowledge and skills to gather, analyze, and apply information and ideas.

- Goal two-Students in Missouri public schools will acquire the knowledge and skills to communicate effectively within and beyond the classroom.

- Goal three-Students in Missouri public schools will acquire the knowledge and skills to recognize and solve problems.

- Goal four-Students in Missouri public schools will acquire the knowledge and skills to make decisions and act as responsible members of society (MO DESE, 2006, p. 4). "All Communication Arts content may be assessed at the level where it appears. Teachers are responsible for content up to and including that which appears at the grade level they teach" (State Standards Newsletter, 2008, p. 2). Teachers should have a clear understanding of the performance standards that should be taught at their grade level.

Research Perspective

This study began in December, 2008 and concluded in December, 2009. The study involved one suburban school district in St. Louis County. The study was a mixed qualitative and quantitative study. Fraenkel and Wallen (2006) stated that "qualitative and

quantitative approaches can be used together and that there is no best method" (p. 442). Fraenkal and Wallen found that the approach used depends on the study and what the researchers would like to find out. The research of Fraenkal and Wallen showed the relevance of mixed-methods studies to complete the picture of the study and both aspects to enhance the significance of the study.

Clay, a collaborator, took primary responsibility for organizing all of the quantitative data (survey responses and MAP scores) from the various research sites (schools). Simms, a collaborator, took primary responsibility for organizing all of the qualitative data (open-ended questions, responses, and classroom observations of teachers) from the research sites (schools). Both collaborators took primary responsibility for observations of teachers in the various sites to verify use of standard tests (common assessments), experiential learning strategies, and student-centered teaching attitudes evidenced in the survey and responses to open-ended questions. Simms will report the analysis of the classroom observations in her dissertation.

The collaborators utilized the MAP Scale Scores from the three study years, 2007-2009. They studied teaching factors designed to increase student achievement in the Communication Arts. The survey included specific statements followed by questions administered to participants. Survey results served as a connection between participants' practices and the measurable standardized testing outcomes.

Summary

This collaborative research study involved utilizing two methodologies, quantitative and qualitative, to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student

achievement in Communication Arts. Clay focused on quantitative data that included the

study district's MAP Scale Scores for three years and the teachers' responses that utilized

the Likert Scale from the research survey entitled *What Makes Your Classroom Work*?

Simms focused on qualitative data from the study district that included open-ended

responses and teachers' classroom observations.

Chapter Four includes the results of quantitative and qualitative data. Clay

reported on quantitative data (analysis of the survey results based on the Likert Scale and

MAP test scores) and Simms reported on qualitative data (analysis of open-ended

responses from the survey and classroom observations).

Chapter Four – Results

The purpose of this collaborative study was to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. The study included 35 teachers of grades three, four, five, and six who were identified as the top ten highest performing teachers in the district. The top performing teachers had a large percentage of students who achieved MAP Scale Scores at the proficient or advanced level in Communication Arts for three study years. A teacher survey was administered to the top performing teachers in the study district. Jo Ann Clay, a collaborator, focused on the quantitative data, and analyzed the results of the questions and statements that utilized the Likert Scale, and the MAP Scale Scores of students who consistently achieved proficient or advanced scores on the Communication Arts. A summary of the open-ended responses to the teacher survey is included in chapter four. Suzette Simms, a collaborator in this study, analyzed the responses to the open-ended questions and classroom observations to examine the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts. Simms' results are reported and analyzed in her dissertation.

The study was conducted in a large suburban school district located in North St. Louis County. The elementary schools within the study district provided the data for the study. The teachers included in the study have been teaching in the district for at least three years. The students were the products of teachers who used standard classroom assessments, experiential learning strategies, and exhibited student-centered teaching attitudes during instruction of all students capable of learning.

The Communication Arts section of the MAP test was administered to all students in grades three through six and the resulting score is the dependent variable. The students' MAP Scale Scores are included in the quantitative data in this chapter. Thirty five survey results based on the Likert Scale of the top ten performing teachers within the study district are included in the quantitative analysis of research. The Likert Scale for the survey titled "What Makes Your Classroom Work?" (Emrick, 2008) included the following responses: Infrequently, Some of the time, Most of the time, and Always. The collaborators administered the survey to the classroom teachers who responded to 11 statements using a Likert Scale and twelve 12 open-ended questions. The open-ended questions yielded qualitative data which, along with the quantitative data from the Likert Scale, are included in chapter four.

The MAP Scale Scores were analyzed through the Department of Elementary and Secondary Education for all public schools in the metropolitan St. Louis area. The Director of Research and Evaluation for the district disaggregated the MAP Scale Scores of the top ten teachers, and the MAP Scale Scores of the randomly selected students. The data were ranked according to the top teachers' percentage of students' MAP Scale Scores in the proficient and advanced range for the three study years.

The hypotheses were as follows:

Null Hypothesis #1: There is no difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Alternative Hypothesis #1: There is a difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Null Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are not the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching, and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to the teacher survey questions.

Alternative Hypothesis #2: Students who achieve proficient or advanced scores on the Communication Arts section of the MAP test are the products of teachers who consistently use standard tests (common assessments), experiential learning strategies in teaching, and who exhibit student-centered teaching attitudes towards all students capable of learning as measured by teacher responses to teacher survey questions.

The research questions were as follows:

1. What is the impact of standard classroom tests (common assessments) during instruction on improving student achievement in the Communication Arts section of the MAP?

2. What is the impact of experiential learning strategies on improving student achievement in the Communication Arts section of the MAP?

3. What is the impact of student-centered teaching attitudes on improving student achievement in the Communication Arts section of the MAP?

Table 10

Survey Results of Top Ten Performing Classroom Teachers on the MAP-Grades Three, Four, Five, and Six

		Infrequently	Some of the time	Most of the time	Always
1.	I know when my students need help in my classroom.			23	12
2.	I design my lesson based exactly on what I want my students to understand and be able to do.			21	14
3.	My lessons/activities are focused on the expected end result of the lesson.		1	12	22
4.	I provide demonstrations of the expected learning outcomes for my students.			12	23
5.	I model the expected skills that my students are to learn in my lessons.		1	10	24
6.	I provide continuous guided practice during my lesson.		4	8	23
7.	I give my students ongoing feedback based on their attainment of benchmarks (learning goals) throughout each lesson leading toward the expected performances.	1		14	20
8.	I design my lessons to ensure student understanding.	1		7	27
9.	I use available technology in my classroom to enhance student learning.	3	8	15	9
10.	I believe that all my students can learn.			2	33
11.	When I give a test, I already know how my students are going to be successful.		8	22	5

Survey Results

The survey results summarized in Table 10 indicates that 35 teachers took the survey and responded "Most of the time" and "Always" to statements one, two, three, four, five, eight, and ten. See Appendix G for the complete data set.

In survey statement six, which asked teachers to respond to: "I provide continuous guided practice during my lesson," 11 percent of the teachers responded that they provide continuous guided practice during their lesson "some of the time." Eighty-nine percent of the teachers responded that they provide continuous guided practice during the lesson 89 percent of the time.

In survey statement nine, which asked teachers to respond to "I use available technology in my classroom to enhance student learning" nine percent responded "infrequently," 23 percent stated "some of the time," and 68 percent responded "most of the time" and "always."

Survey statement 11, which stated that "when I give a test, I already know how my students are going to be successful," 23 percent stated "some of the time," and 77 percent stated "most of the time" and "always."
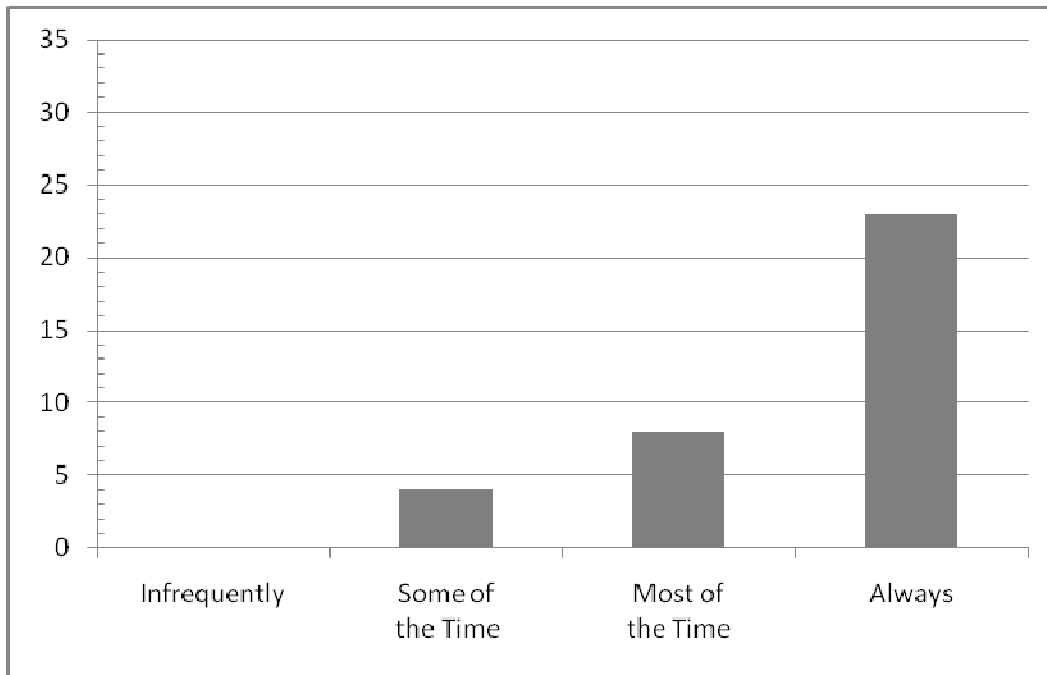
Figure 5. "What Makes Your Classroom Work?" Survey Question Six, I provide continuous guided practice during my lesson.
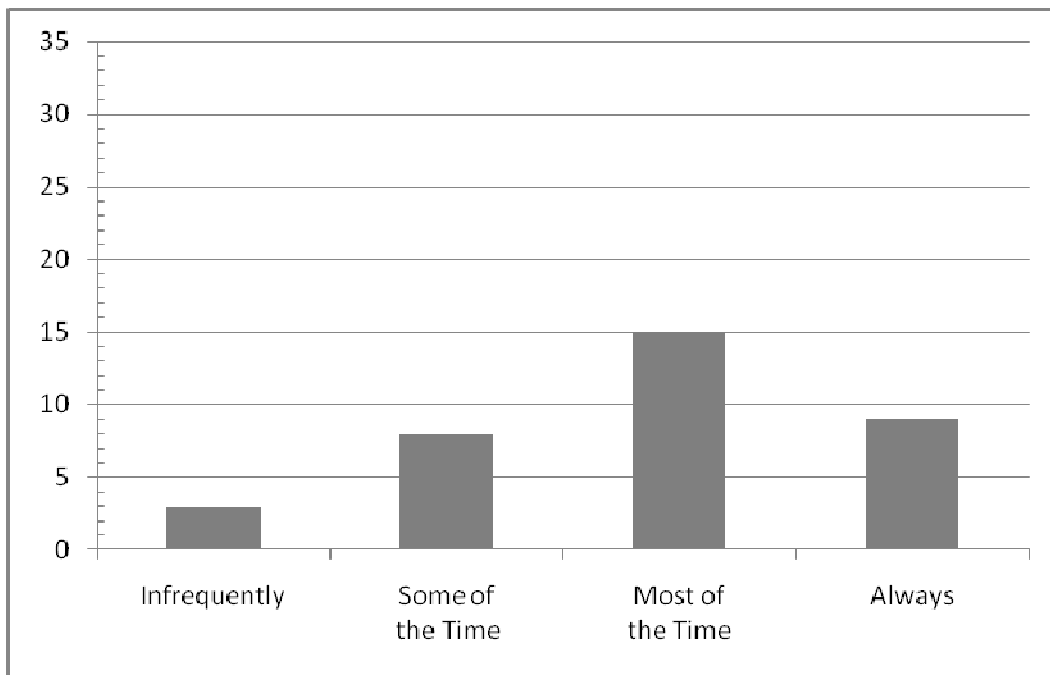

Figure 6. "What Makes Your Classroom Work?" Survey Question Nine, I use available technology in my classroom to enhance student learning.
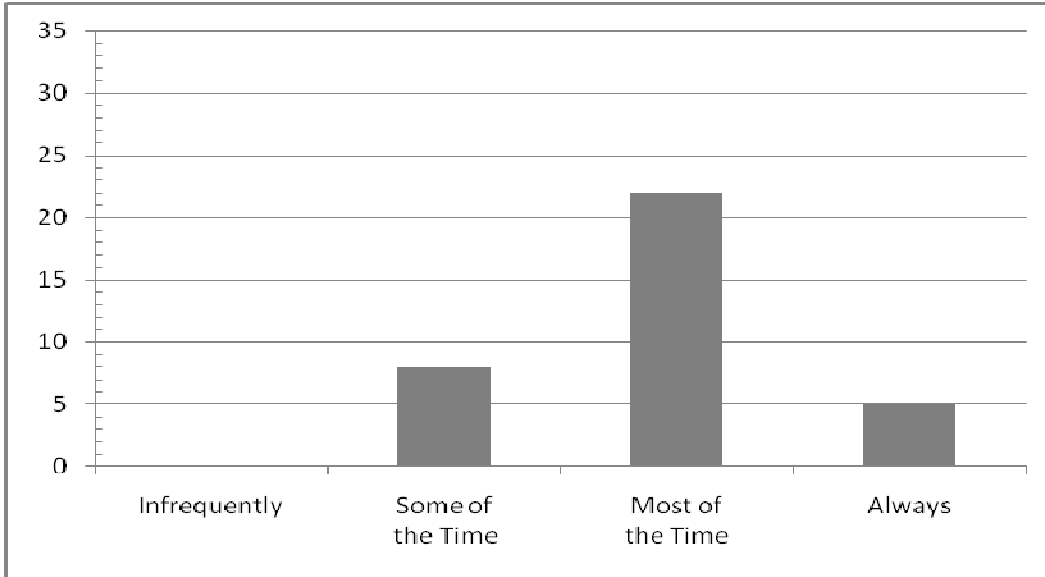
Figure. 7. *"What Makes Your Classroom Work?"* Survey Question 11, When I give a test, I already know how my students are going to be successful.

Table 11

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	1.272727	16.27273
Variance	5.82684	63.63636
Observations	22	22
Hypothesized Mean Difference	0	
Df	25	
t Stat	-8.44161	
P(T<=t) one-tail	4.35E-09	
t Critical one-tail	1.708141	
P(T<=t) two-tail	8.7E-09	
t Critical two-tail	2.059539	

Table 11 summarizes the applied t-test that was used to check for the difference between the number of desirable and the number of undesirable survey responses. Variable 1 represents the undesirable results. The teacher would have responded 'infrequently' or 'some of the time'. Variable 2 represents the desirable results. The teacher would have responded 'always' or 'most of the time.'

The null hypothesis for the t-test was: There is no difference between the number of teachers responding with the undesired responses of 'infrequently' or 'some of the time' as compared to the number of teachers responding with the desired responses of 'always' or 'most of the time'.

The t-stat was -8.441 and the t Critical two-tail value of 2.059 indicated that the null hypothesis is rejected and there is a significant difference between the number of undesirable responses and the number of desirable responses.

Table 12

Summary of Teacher Responses

Stats	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
-2 δ	2.380	2.406	2.494	2.694	2.579	2.142	2.197	2.471	1.033	3.472	1.690
-1 δ	2.861	2.903	3.047	3.176	3.118	2.842	2.856	3.093	1.945	3.707	2.302
Mean	3.343	3.400	3.600	3.657	3.657	3.543	3.514	3.714	2.857	3.943	2.914
+1 δ	3.824	3.897	4.153	4.139	4.196	4.243	4.173	4.336	3.769	4.178	3.526
+2 δ	4.306	4.394	4.706	4.620	4.736	4.944	4.831	4.958	4.681	4.414	4.139

(continued)

STD Cnt	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
# of Teachers	35	35	35	35	35	35	35	35	35	35	35
-2 δ cnt	0	0	13	12	11	4	1	8	3	2	8
-1 δ cnt	23	21	0	0	0	8	14	0	8	0	0
+1 δ cnt	0	0	22	23	24	23	20	27	15	33	22
+2 δ cnt	12	14	0	0	0	0	0	0	9	0	5
-2 δ pct	0%	0%	37%	34%	31%	11%	3%	23%	9%	6%	23%
-1 δ pct	66%	60%	0%	0%	0%	23%	40%	0%	23%	0%	0%
+1 δ pct	0%	0%	63%	66%	69%	66%	57%	77%	43%	94%	63%
+2 δ pct	34%	40%	0%	0%	0%	0%	0%	0%	26%	0%	14%

Response Cnt	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
# of Teachers	35	35	35	35	35	35	35	35	35	35	35
Count 1's	0	0	0	0	0	0	1	1	3	0	0
Count 2's	0	0	1	0	1	4	0	0	8	0	8
Count 3's	23	21	12	12	10	8	14	7	15	2	22
Count 4's	12	14	22	23	24	23	20	27	9	33	5
% 1's	0%	0%	0%	0%	0%	0%	3%	3%	9%	0%	0%
% 2's	0%	0%	3%	0%	3%	11%	0%	0%	23%	0%	23%
% 3's	66%	60%	34%	34%	29%	23%	40%	20%	43%	6%	63%
% 4's	34%	40%	63%	66%	69%	66%	57%	77%	26%	94%	14%

Note: Results from "What makes your classroom work?"

Table 12 summarizes the statistical, standard count, and response from the 'What Makes Your Classroom Work?' (Emrick, 2008) survey.

Table 13

Top Ten Teachers' Grade Three Average Communication Arts MAP Scale Scores for 2007, 2008, and 2009 School Years

2007	2008	2009
1.828.6	805.6	800.0
2. 820.0	800.0	795.5
3. 807.1	794.7	790.5
4. 806.7	787.5	786.4
5. 800.0	781.0	768.4
6. 795.8	776.5	761.9
7. 795.0	771.4	759.1
8. 781.0	766.7	757.9
9.768.2	766.7	757.9
10.766.7	765.0	756.3

Note: Study District's Research and Evaluation Department

Table 13 represents the top ten teachers' average Communication Arts MAP Scale Scores for grade three for the three study years.

Table 14

Top Ten Teachers' Grade Four Average Communication Arts MAP Scale Scores for

2007, 2008, and 2009 School Years

2007	2008	2009
1. 827.8	825.0	784.0
2. 816.7	800.0	783.3
3. 811.8	788.5	780.8
4. 805.9	777.8	768.8
5. 794.5	777.8	766.7
6. 766.7	773.7	766.7
7. 766.7	764.0	766.7
8. 766.7	762.5	765.0
9. 763.6	757.9	763.6
10. 763.2	757.9	756.0

Note: Study District's Research and Evaluation Department

Table 14 represents the top ten teachers' average Communication Arts MAP

Scale Scores for grade four for the three study years.

Table 15

Top Ten Teachers' Grade Five Average Communication Arts MAP Scale Scores for 2007, 2008, and 2009 School Years

2007	2008	2009
1. 808.7	821.1	785.7
2. 795.8	817.6	778.6
3. 789.5	800.0	776.9
4. 788.9	787.0	776.0
5. 782.6	772.0	770.6
6. 780.8	765.0	769.6
7. 775.0	765.0	762.5
8. 769.2	763.6	756.5
9. 768.0	762.5	755.0
10. 764.3	761.1	750.0

Note: Study District's Research and Evaluation Department

Table 15 represents the top ten teachers' average Communication Arts MAP Scale Scores for grade five for the three study years.

Table 16

Top Ten Teachers' Grade Six Average Communication Arts MAP Scale Scores for 2007, 2008, and 2009 School Years

2007	2008	2009
1. 814.3	835.3	814.3
2. 796.3	793.3	808.3
3. 788.0	783.3	795.5
4. 786.7	782.6	795.0
5. 785.7	775.0	789.5
6. 768.8	775.0	776.5
7. 763.2	773.7	773.9
8. 761.5	766.7	768.4
9. 753.8	766.7	763.2
10. 753.6	763.2	762.5

Note: Study District's Research and Evaluation Department

Table 16 represents the top ten teachers' average Communication Arts MAP

Scale Scores for grade six for the three study years.

Table 17

Top Ten Teachers' Communication Arts MAP Scale Scores Average and Variance for Grades Three, Four, Five, and Six

		2007	2008	2009
Grade 3	Average	796.91	781.51	773.39
	Variance	419.51	218.99	310.23
Grade 4	Average	788.36	778.51	770.16
	Variance	656.33	451.50	87.26
Grade 5	Average	782.28	781.49	768.14
	Variance	192.26	552.91	137.05
Grade 6	Average	777.19	781.48	784.71
	Variance	404.21	439.60	342.62

Note: Study District's Research and Evaluation Department

Table 17 indicates the average Communication Arts MAP Scale Scores for students in grades three, four, five, and six for the three study years and the variance in Communication Arts MAP Scale Scores for students in grades three, four, five, and six for the study years.

Table 18

Random Selection of Students Whose teachers Were not in the Top 10
Communication Arts MAP Scale Scores

		2007	2008	2009
Grade 3	Average	651.71	629.96	624.0
	Variance	848.57	1429.45	1315.14
Grade 4	Average	641.22	653.08	643.82
	Variance	2876.45	941.72	1399.56
Grade 5	Average	661.04	663.8	665.04
	Variance	1816.23	1028.07	850.63
Grade 6	Average	663.82	657.84	671.02
	Variance	782.88	1362.50	1142.20

Note: Study District's Research and Evaluation Department

Table 18 represents the average Communication Arts MAP Scale Scores of a

random selection of 45 students in grades three, four, five, and six whose teachers were

not among the top ten teachers and the variance in Communication Arts MAP Scale

Scores of a random selection of 45 students in grades three, four, five, and six whose

teachers were not among the top ten teachers.

The null hypothesis for the z-test is: for students in grade three, four, five, and six,

there is no difference between top teachers' average Communication Arts MAP Scale

Scores and the average Communication Arts MAP Scale Scores of students who were not

in the top ten teachers' classroom.

Table 19

z-Test - Two Sample for Means: Grade Three 2007

	Variable 1	Variable 2
Mean	796.91	651.71
Known Variance	419.51	848.57
Observations	1	1
Hypothesized Mean Difference	0	
Z	4.077494	
P(Z<=z) one-tail	2.28E-05	
z Critical one-tail	1.644854	
P(Z<=z) two-tail	4.55E-05	
z Critical two-tail	1.959964	

Table 19 summarizes the 2007 z-test of students in grade three that indicated the

null hypothesis should be rejected because the z- value of 4.077 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

Table 20

z-Test - Two Sample for Means: Grade Three 2008

	Variable 1	Variable 2
Mean	781.51	629.96
Known Variance	218.99	1429.45
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.732668	
P(Z<=z) one-tail	9.47E-05	
z Critical one-tail	1.644854	
P(Z<=z) two-tail	0.000189	
z Critical two-tail	1.959964	

Table 20 summarizes the 2008 z-test of students in grade three that indicated the

null hypothesis should be rejected because the z-value 3.732 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

Table 21

z-Test - Two Sample for Means: Grade Three 2009

	Variable 1	Variable 2
Mean	773.39	624
Known Variance	310.23	1315.14
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.705487969	
P(Z<=z) one-tail	0.000105492	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.000210984	
z Critical two-tail	1.959963985	

Table 21 summarizes the 2009 z-test of students in grade three that indicated the

null hypothesis should be rejected because the z value 3.705 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

The null hypothesis for the z-test is: for students in grade three, there is no

difference between the top ten teachers' average Communication Arts MAP Scale Scores

and the average Communication Arts MAP Scale Scores of students who were not in the

top teachers' classrooms.

Table 22

z-Test - Two Sample for Means: Grade Four 2007

	Variable 1	Variable 2
Mean	788.36	641.22
Known Variance	656.33	2876.45
Observations	1	1
Hypothesized Mean Difference	0	
Z	2.475554291	
P(Z<=z) one-tail	0.006651477	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.013302953	
z Critical two-tail	1.959963985	

Table 22 summarizes the 2007 z-test of students in grade four that indicated the

null hypothesis should be rejected because the z value 2.475 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

Table 23

z-Test - Two Sample for Means: Grade Four 2008

	Variable 1	Variable 2
Mean	778.51	653.08
Known Variance	451.5	941.72
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.360404613	
P(Z<=z) one-tail	0.000389142	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.000778284	
z Critical two-tail	1.959963985	

Table 23 summarizes the 2008 z-test of students in grade four that indicated the

null hypothesis should be rejected because the z-value of 3.360 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

Table 24

z-Test - Two Sample for Means: Grade Four 2009

	Variable 1	*Variable 2*
Mean	770.16	643.82
Known Variance	87.26	1399.56
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.27651134	
P(Z<=z) one-tail	0.00052549	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.001050981	
	1.959963985	

Table 24 summarizes the 2009 z-test of students in grade four that indicated the

null hypothesis should be rejected because the z-value of 3.276 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

The null hypothesis for the z-test is: for students in grade four, there is no

difference between the top ten teachers' average Communication Arts MAP Scale Scores

and the average Communication Arts MAP Scale Scores of students who were not in the

top ten teachers' classrooms.

Table 25

z-Test - Two Sample for Means: Grade Five 2007

	Variable 1	Variable 2
Mean	782.28	661.04
Known Variance	192.26	1816.23
Observations	1	1
Hypothesized Mean Difference	0	
Z	2.705272955	
P(Z<=z) one-tail	0.003412414	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.006824828	
z Critical two-tail	1.959963985	

Table 25 summarizes the 2007 z-test of students in grade five that indicated the

null hypothesis should be rejected because the z-value 2.705 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

Table 26

z-Test - Two Sample for Means: Grade Five 2008

	Variable 1	Variable 2
Mean	781.49	663.8
Known Variance	552.91	1028.07
Observations	1	1
Hypothesized Mean Difference	0	
Z	2.959895476	
P(Z<=z) one-tail	0.001538717	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.003077434	
z Critical two-tail	1.959963985	

Table 26 summarizes the 2008 z-test of students in grade five that

indicated the null hypothesis should be rejected because the z-value of 2.959 is

larger than the critical value of 1.959. There is a difference in average scores

between the two groups of students.

Table 27

z-Test - Two Sample for Means: Grade Five 2009

	Variable 1	Variable 2
Mean	768.14	665.04
Known Variance	137.05	850.63
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.280579	
P(Z<=z) one-tail	0.000518	
z Critical one-tail	1.644854	
P(Z<=z) two-tail	0.001036	
z Critical two-tail	1.959964	

Table 27 summarizes the 2009 z-test of students in grade five that indicated the null hypothesis should be rejected because the z-value3.280 is larger than the critical value of 1.959. There is a difference in average scores between the two groups of students.

The null hypothesis for the z-test is: for students in grade five, there is no difference between the top ten teachers' average Communication Arts MAP Scale Scores and the average Communication Arts MAP Scale Scores of students who were not in the top ten teachers' classrooms.

Table 28

z-Test - Two Sample for Means: Grade Six 2007

	Variable 1	Variable 2
Mean	777.19	663.82
Known Variance	404.21	782.88
Observations	1	1
Hypothesized Mean Difference	0	
Z	3.290458	
P(Z<=z) one-tail	0.0005	
z Critical one-tail	1.644854	
P(Z<=z) two-tail	0.001	
z Critical two-tail	1.959964	

Table 28 summarizes the 2007 z-test of students in grade six that indicated the null hypothesis should be rejected because the z-value of 3.290 is larger than the critical value of 1.959. There is a difference in average scores between the two groups of students.

Table 29

z-Test - Two Sample for Means: Grade Six 2008

	Variable 1	*Variable 2*
Mean	781.48	657.84
Known Variance	439.6	1362.5
Observations	1	1
Hypothesized Mean Difference	0	
Z	2.91252427	
P(Z<=z) one-tail	0.001792602	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.003585203	
z Critical two-tail	1.959963985	

Table 29 summarizes the 2008 z-test of students in grade six that indicated the null hypothesis should be rejected because the z-value of 2.912 is larger than the critical value of 1.959. There is a difference in average scores between the two groups of students.

Table 30

z-Test - Two Sample for Means: Grade Six 2009

	Variable 1	Variable 2
Mean	784.71	671.02
Known Variance	342.62	1142.2
Observations	1	1
Hypothesized Mean Difference	0	
Z	2.950430318	
P(Z<=z) one-tail	0.001586658	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.003173316	
z Critical two-tail	1.959963985	

Table 30 summarizes the 2009 z-test of students in grade six that indicated the

null hypothesis should be rejected because the z-value of 2.950 is larger than the critical

value of 1.959. There is a difference in average scores between the two groups of

students.

The null hypothesis for the z-test is: for students in grade six, there is no

difference between the top ten teachers' average Communication Arts MAP Scale Scores

and the average Communication Arts MAP Scale Scores of students who were not in the

top teachers' classrooms.

Data Analysis

The z-test: Two Sample for Means was conducted for the MAP Scale Scores of

the top ten teachers and the 45 randomly selected students of teachers who were not in

the top ten teachers' classrooms. Variable 1 represented the mean of the top teachers'

MAP Scale Scores and Variable 2 represented the mean of the randomly selected

students. The known variance listed under Variable 1 represented the top ten teachers'

variance and the known variance listed under Variable 2 represented the variance of the

randomly selected students. Alpha .05 was used for each z-test.

The null hypothesis was rejected for students in grades three, four, five, and six for the 2007, 2008, and 2009 school years. The alternative hypothesis was accepted that the MAP Scale Scores of the students in the top ten teachers' classrooms were not equal to the MAP Scale Scores of the randomly selected students who were not in the top ten teachers' classrooms was accepted.

Suzette Simms, a collaborator in this study, assumed responsibility for organizing and analyzing qualitative data, responses to open-ended questions, and summary observations of teachers. Simms' dissertation contains a complete analysis. JoAnn Clay used Simms' data and analysis to summarize findings for each question. For each question from the "What Makes Your Classroom Work?" survey, the summary will follow.

Question one: How soon do you know when your students need help?

Overall, teacher participants stated that they relied on early actions of their students to determine their level of understanding. Pre-testing and continuous assessment of their students provided teachers with the best indication of their need for help.

Question two: How do you determine what students must understand and be able to do?

Teacher participants indicated heavy reliance on State Grade Level Expectations and District Curriculum guides. There was insufficient evidence to support a belief that teachers were determining the results expected before beginning the activities within the lessons and units they were teaching.

Question three: How do you organize student activities which focus on the desired end?

Some teachers focused on designing lessons backward from a desired end and they designed different tasks according to students' learning styles.

Question four: How important are demonstrations to learning in your lessons?

Based on teachers' responses, demonstrations were vital for visual learning, student applications to the real world, and independent practice.

Question five: How and when do you provide modeling of the expected skill or skills?

Participants agreed that modeling of the expected skills was essential before, during, and after a lesson. Particular emphasis was placed on providing models for students needing extra assistance in understanding the skill or skills.

Question six: What is most important to you about guided practice?

Overwhelmingly, teacher participants stated that guided practice was essential in providing immediate assessment feedback to students, thus developing greater student understanding of concepts and skills.

Question seven: Why is ongoing feedback (assessment) important to you in your lesson?

Teacher participants' responses to this question focused on three areas: 1) feedback is important to let students know how they are doing, 2) feedback provides the instructor with immediate knowledge of what is and is not understood, and 3) feedback provides the basis for changes the teacher can make in lessons.

Question eight: How do you ensure student understanding?

Assessment throughout instruction dominated the responses from teacher participants to this question. This assessment was defined further as formative since a main product of assessment was re-teaching.

Question nine: Why is technology important to you in teaching students to successfully learn?

The focus for answers to question 9 was on the engagement of students, thus involving and motivating them in their learning through the use of technology.

Question 10: I believe that all my students can learn. What must a teacher do to make that statement or belief true?

Teacher responses to this question centered on all students learning when teachers communicate high expectations, are cognizant of students' learning styles, and differentiate the ways in which students can reach the objectives/goals of each lesson.

Question 11: When I give a test I already know how my students are going to be successful. How do you know?

Abundant practice under teacher supervision and ongoing assessment were listed by teacher respondents as the determinants they used in knowing students would be successful with a test.

Question 12: Which (list three) teaching/learning strategies do you find to be the most effective for you teaching students to learn?

Teachers listed many different teaching/learning strategies as effective. Simms focused on analysis of the qualitative data and listed the teaching/learning strategies and their perceived effectiveness. Clay found a concentration on assessment, cooperative groups, and graphic organizers as most effective. The emerging trends of differentiating

instruction and ongoing assessment of student understanding were listed by teachers as essential and effective teaching practices.

Simms' analysis of the qualitative data contains classroom observations of teachers. The existence of the teaching behaviors was identified and included the use of standard test/common assessments, experiential learning strategies, and student-centered teaching attitudes during instruction to increase student achievement in the Communication Arts section of the MAP. The classroom observation form is included in Appendix H.

Overall, the teacher participants' responses indicated that they knew when their students needed help, what students must understand and be able to do, how to organize activities which focused on the desired end, the importance of demonstrations, modeling, assessment (feedback), guided practice, and technology. On an overall basis, the teachers' responses revealed that they understand how to ensure student understanding, know that their students are going to be successful, and believe that all of their students can learn.

Chapter Five – Discussion and Summary

As stated in chapter one, "No Child Left Behind has been the most recent authorization of federal education legislation intensified federal mandates for results-driven and high-stakes testing" (Wong & Nicotera, 2007, p. 8). The MAP test has been administered since the 2002-2003 school year. Since making Adequate Yearly Progress (AYP) has been a significant component of the No Child Left Behind Act (NCLB) districts and schools have been interested in strategies and best practices that increase student achievement.

This chapter includes the discussion, recommendations, implications, and future considerations focused on the relationship between standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts as measured by the Missouri Assessment Program (MAP). This study could add to a body of research on effective teaching practices which have been shown to increase student achievement and provide a framework for instituting professional development practices based on the specific statements and questions on the teacher survey. The review of literature included how children learn, Marzano's instructional strategies, student-centered teaching attitudes, experiential learning strategies, standard tests and common assessments, teacher efficacy, and the relationship between teacher expectations and student achievement.

The three research questions examined by the collaborators addressed 1) the impact of standard classroom tests (common assessments) during instruction on improving student achievement in the Communication Arts section of the MAP, 2) the impact of experiential learning strategies on improving student achievement in the

Communication Arts section of the MAP, and 3) the impact of student-centered teaching

attitudes on improving student achievement in the Communication Arts section of the

MAP.

  The researchers administered the 'What Makes Your Classroom Work' survey to

35 top performing classroom teachers in the study district. The survey included 11

statements that teachers responded to using a Likert scale and 12 open-ended questions.

The t-test: Two Sample Assuming Unequal Variances was conducted and revealed that

the t-stat was -8.44 and the t-critical two-tail value was 2.059 which indicated that there

was a significant difference in desirable answers for questions 6, 9, and 11.

  The collaborators looked at two different perspectives. Clay focused on

organizing the quantitative data (the surveys that utilized the Likert Scale and MAP Scale

Scores from the various research sites. Simms focused on organizing the qualitative data

(the open-ended questions, responses, and classroom observations of teachers from the

research sites).

Implications

  Based on classroom observations, the top performing teachers used standard tests,

experiential learning strategies, student-centered teaching attitudes, and student

achievement in Communication Arts. The study supported the hypothesis that the

students who consistently achieved proficient or advanced levels MAP Scale Scores are

the products of teachers who consistently used standard tests, experiential learning

strategies, student-centered teaching attitudes, and student achievement in

Communication Arts. The summary of the teachers' survey responses revealed that they

knew when their students needed help, what students must understand and be able to do,

how to organize activities that focused on the desired end, the importance of demonstrations, modeling, assessment, guided practice, and technology. Overall, the teachers' responses revealed that they understand how to ensure student understanding, know that their students are going to be successful, and believe that all of their students can learn.

One implication from this study could be that training teachers specifically in the use of experiential learning strategies and standard tests provides students with active learning experiences which are specifically focused on identified results accepted by all teachers. This will enhance the prospects for increased student achievement through cooperative efforts by teachers. Another implication arises from changing teacher attitudes toward their effect on improving student achievement. Teachers' attitudes toward student learning can be altered based on their understanding of designing curriculum experiences that are based on student achievement and measurable learning goals with continuing feedback, thus providing students understanding and support for correction when there may be misunderstanding.

The null hypothesis was rejected for students in grades three, four, five, and six for the 2007, 2008, and 2009 school years. The z-test concluded that the null hypothesis should be rejected because the z-value landed in the critical value area in each of the grade levels for each of the study years. The alternative hypothesis was accepted that the MAP Scale Scores of the students in the top ten teachers' classrooms were not equal to the MAP Scale Scores of the randomly selected students who were not in the top ten teachers' classrooms.

Recommendations

Recommendations can be based on implications from the study. Teachers who are performing at a high level and have a large percentage of students in their classrooms scoring at a high level on the MAP should have an opportunity to present strategies they have found to be effective to teachers who are not performing at a high level The top performing teachers could present the teaching factors that increased student achievement in Communication Arts during Orientation Week or during monthly in-service days. The study district has implemented Professional Learning Communities (PLCs) throughout the secondary level. These allow teachers to closely monitor student progress on an ongoing basis and to assist each other with teaching strategies to improve student success.

The school district implemented Professional Learning Communities on the elementary level during the 2009-2010 school year. The PLCs meet weekly to collaborate, discuss assessments, and share effective strategies. Top performing teachers could be an integral member of PLCs presenting how they analyzed data to inform instruction. This would assist teachers who could learn teaching factors from the top ten teachers in the study district. The study district could consider implementing a learning academy and the highest achieving teachers could be instructors during the summer or after school district grade level meetings to share best instructional practices in Communication Arts.

Future Considerations

The study district should consider replicating the study annually to continue to identify top performing teachers. This would be a valuable resource for teachers who could use assistance in increasing student achievement in Communication Arts. The top

performing teachers could conduct and facilitate district grade level meetings monthly to discuss standard tests, experiential learning strategies, student-centered teaching attitudes, and student achievement in Communication Arts.

The study district could consider publishing the standard tests, experiential learning strategies, and student-centered teaching attitudes to be disseminated throughout the district's teachers of students in grades three, four, five, and six and utilized throughout the entire school year. A checklist could be created to monitor the use of this valuable information and instructional leaders in the building could be responsible for collecting the data. A list of master teachers could be created to provide professional development and peer coaching on an ongoing basis. The master teachers could empower a cadre of additional master teachers to focus on effective teaching practices to enhance student achievement in Communication Arts. This could result in an increase in the number of students who score at a proficient or advanced level. This would help schools make Adequate Yearly Progress as mandated by the No Child Left Behind Act of 2002. The district could consider publishing a booklet, guide, or manual listing and explaining standard tests/common assessments, experiential learning strategies, and student-centered teaching attitudes.

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Appendix A

Experiential Learning Strategies

- Learning is real-world oriented and has value beyond the school setting.

- Learning is often interdisciplinary.

- Students use higher-order thinking skills and learn concepts as well as basic facts.

- The classroom is learner centered and allows for a variety of learning styles.

- Students have ownership of their learning.

- Instruction uses hands-on approaches and is accessible for all learners.

- Learning is active and student driven.

- Teachers act as coaches or learning facilitators. They are one of many resources students may turn to for learning. Parents, outside experts, and community members may all serve as sources for learning.

- Scaffolding allows students to receive help when they need it and allows them to work freely when they can accomplish tasks on their own.

- Learning uses real-time data, which students investigate and from which they draw conclusions.

- Students often work together and have opportunities for discussion as they work to solve the problem.

- Students produce a product that is directed toward a real audience. (Council for Exceptional Children, 2009, p. 8)

From *Experiential learning experience as the source of learning and development,* by. D. A. Kolb, (1984), Englewood Cliffs, NJ: Prentice-Hall.

Appendix B

Major Types of Assessments

- large-scale or external assessments-assessment developed outside of the school or school district; administered annually, summative only; results are received months later

- small-scale or internal assessment-assessment developed within the school or school district; criterion-referenced; formative or summative; and timely feedback

- norm-referenced assessment-assessment that include standardized tests, is typically a national sample, and students, schools, or districts are compared or rank-ordered in relation to norm group

- criterion-referenced assessment-state or district tests aligned to state and/or district standards, used to determine how well individual students and groups have acquired specific set of learning outcomes (standards), and students are scored according to identified levels of performance

- selected-response assessment-students are required to select one response; includes multiple-choice, true-false, matching, assesses student knowledge of factual information, main concepts, and basic skills; scoring of answers is quick, but these tests promote memorization of factual information rather than higher-level understanding

- constructed-response assessment-requires students to organize and use knowledge and skills to answer a question or complete a task, includes short-answer, open response, and extended response, more likely to reveal whether or not students understand, and can apply what they are learning.

- performance assessment-requires students to construct a response, create a

  product, or perform a demonstration/ rubrics or used to evaluate student

  performance, promotes critical thinking; offers multiple opportunities for students

  to revise work using scoring guide feedback.

From *Common formative assessments* (pp. 55-57), by L. Ainsworth and L. Viegut, (2006), Thousand Oaks, CA: Corwin Press.

Appendix C

Self-Fulfilling Prophecy: Five-step Process

1. The teacher forms expectations. The teacher forms expectations from a variety of preconceived ideas. Some ideas could include a student's prior grades and behavior; socioeconomic background, gender, parents, and other issues. If the preconceived ideas are positive, the teacher forms high expectations and if the preconceived ideas are negative, the teacher forms low expectations.

2. Based upon these expectations, the teacher acts in a differential manner. The teacher acts in a positive manner when the teacher's expectations are high and in a negative manner when the expectations are low.

3. The teacher's treatment tells each student (loud and clear) what behavior and what achievement the teacher expects. The teacher's attitude and behavior towards students tells students that the teacher expects them to achieve or doesn't expect them to achieve. Students can readily identify readily when the teacher expects them to learn and when they are not expected to learn.

4. If this treatment is consistent, it will tend to shape the student's behavior and achievement. Students tend to live up to the expectations of the teacher. If the treatment is consistently positive, the student will rise to those expectations and increase student achievement. If treatment is consistently negative thus indicating low expectations, this could adversely shape the student's behavior thus generating concerns about that behavior.

5. With time, the student's behavior and achievement will conform more and more closely to that expected of him or her. Students will live up to the expectations of

the teacher. If little is expected, the students will give little and if much is

expected, students will work harder and harder to increase achievement. (Antioch,

1948)

From The self-fulfilling prophecy, by R. K. Merton, (1948), *The Antioch Review,* pp.
193-210.

Appendix D

Consent Form

February 6, 2009

Dear Superintendent Jeffrey Spiegel,

We are requesting permission to conduct a research study with third thru sixth graders in the Ferguson-Florissant School District. This study will be conducted during the 2008-2009 school year. The data will be included at various stages of our project as analyze, make conclusions, and make our presentation to the Lindenwood Review Committee. Our projected date of completion is December, 2009 and at that time, we will discontinue our access to the data.

Title of the Research Study: The Impact of Standard Tests on Increasing Student Achievement in Communication Arts as Measured by the Missouri Assessment Program Jo Ann Clay, an employee of the Ferguson-Florissant School District will be supervising a research project entitled, "The Impact of Standard Tests on Increasing Student Achievement in Communication Arts as measured by the Missouri Assessment Program" The study will occur for one year with a focus on third thru sixth grade teachers and students. We will be analyzing students' data in our research to learn the effects of specific positive characteristics on the Missouri Assessment Program.

Information on the Research Project:

The purposes and the rationale of the proposed project are:

- The researchers believe that the need for this study is based on verifying the existence of teaching factors which may increase student achievement on a standardized test administered by the state of Missouri.

- The Communication Arts section of the MAP is administered to students at least three times from grade 3 through grade 11.

- Communication Arts encompasses teaching students to read, write, discuss and speak; skills which research shows are central to student success in all academic areas.

- Research also shows that standard tests, experiential learning strategies, and student-centered teaching attitudes have a positive impact on student academic success.

Observing the characteristics and strategies of positive teachers will have great potential for improving test scores for all students. Upon completion of our project, we will provide the district with additional support and research that will move us closer to increasing student achievement of all students. This is an exciting opportunity for us, as we are committed to the parents, students, and teachers in the Ferguson-Florissant School District and we are dedicated to high achievement for all students.

Thank you so much for your consideration and we look forward to working with you.
Sincerely,

JoAnn Clay

Principal

(Approved 2-8-09)

Appendix E

What Makes Your Classroom Work? (Teacher Survey)

Survey

1. I know when my students need help in my classroom.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

How soon do you know when your students need help?

2. I design my lesson based exactly on what I want my students to understand and be able to do.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

How do you determine what students must understand and be able to do?

3. My lesson activities are focused on the expected end result of the lesson.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

How do you organize student activities which focus on the desired end?

4. I provide demonstrations of the expected learning outcome for my students.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

How important are demonstrations to learning in your lessons?

5. I model the expected skills that my students are to learn in my lessons.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

How and when do you provide modeling of the expected skill(s)?

6. I provide continuous guided practice during my lesson.	Always	Most of the time	Some of the time	Infrequently
	☐	☐	☐	☐

What is most important to you about guided practice?

7. I give my students ongoing feedback based on their attainment of benchmarks (learning goals) throughout each lesson leading toward the expected performances.	Always ☐	Most of the time ☐	Some of the time ☐	Infrequently ☐

Why is ongoing feedback (assessment) important to you in your lessons?

8. I design my lessons to ensure student understanding.	Always ☐	Most of the time ☐	Some of the time ☐	Infrequently ☐

How do you ensure student understanding?

9. I use available technology in my classroom to enhance student learning.	Always ☐	Most of the time ☐	Some of the time ☐	Infrequently ☐

Why is technology important to you in teaching students to successfully learn?

10. I believe that all my students can learn.	Always ☐	Most of the time ☐	Some of the time ☐	Infrequently ☐

What must a teacher do to make that statement/belief true? `

11. When I give a test I already know how my students are going to be successful.	Always ☐	Most of the time ☐	Some of the time ☐	Infrequently ☐

How do you know?

12. Which (list three) teaching/learning strategies do you find to be the most effective for you in teaching students to learn?

From W. Emerick, (2008), personal communication.

Appendix F

Informed Consent for Participation in Research Study

Dear Colleagues,

We, JoAnn Clay and Suzette Simms, are doctoral students at Lindenwood University. We invite you to participate in our research projects:

The impact of standard tests on increasing student achievement in Communication Arts as measured by the Missouri Assessment Program (JoAnn Clay)

The impact of experiential learning strategies on increasing student achievement in Communication Arts as measured by the Missouri Assessment Program (Suzette Simms)

The impact of student-centered teaching attitudes on increasing student achievement on Communication Arts as measured by the Missouri Assessment Program (Jerona Washington)

The purposes (objectives) and rationale of the proposed project are:

The purpose of this study is to explore the effects of standard classroom tests, experiential learning strategies, and student-centered teaching attitudes on student achievement in the Communication Arts section of the Missouri Assessment Program (MAP) test. The researchers involved with this study believe that the effects determined on the Communication Arts section of the MAP can be extrapolated to all sections of the MAP

We believe that the need for this study is based on verifying the existence of teaching factors which may increase student achievement on a standardized test administered by the state of Missouri.

You will be involved in completing the survey and questionnaire. We will also have an opportunity to engage in dialogue. We estimate that the survey will take about 20-30 minutes and your responses will remain anonymous. These responses will not be used for evaluative purposes. Participation in the survey is strictly voluntary and if you decide not to participate, this will not affect you in any way.

Please feel free to contact either one of the researchers listed below by telephone or e-mail or you can contact our advisor, Dr. Cynthia Vitale, at 636-949-4315. The Review Board at Lindenwood University has approved this project.

JoAnn Clay, 314-831-2644, jaclay@fergflor.k12.mo.us

Suzette Simms, 314-524-0280, ssimms@fergflor.k12.mo.us

I agree to participate in the research project.

_____

Signature

Appendix G

Data Set for Teacher Surveys

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Teacher #1	3	3	3	4	4	4	4	4	4	4	3
Teacher # 2	4	4	4	3	3	3	4	4	3	4	3
Teacher # 3	4	3	4	3	4	4	4	4	4	4	3
Teacher # 4	3	3	3	3	3	3	3	3	1	4	3
Teacher # 5	4	3	3	4	3	2	3	3	2	4	3
Teacher # 6	3	3	4	3	3	3	3	3	1	4	3
Teacher # 7	3	3	4	3	3	3	3	3	3	4	2
Teacher # 8	3	4	4	4	4	4	3	4	2	4	3
Teacher # 9	4	4	4	4	4	4	4	4	4	4	4
Teacher # 10	4	4	4	3	3	4	4	4	3	4	4
Teacher # 11	3	4	4	4	4	4	4	4	4	4	4
Teacher # 12	3	3	3	4	4	2	4	4	2	4	3
Teacher # 13	3	3	3	4	4	2	4	4	3	4	2
Teacher # 14	3	3	4	4	4	2	3	4	3	4	3
Teacher # 15	3	4	4	3	3	4	3	4	2	4	3
Teacher # 16	3	4	4	3	4	4	3	4	3	4	3
Teacher # 17	3	3	3	4	4	4	3	3	3	4	2
Teacher # 18	3	3	3	3	4	3	4	3	3	3	3
Teacher # 19	4	4	3	4	4	3	4	4	3	4	3
Teacher # 20	4	4	4	4	4	4	4	4	4	4	4
Teacher # 21	3	3	4	4	4	4	4	4	2	4	3
Teacher # 22	3	3	3	3	4	3	4	4	2	4	2
Teacher # 23	3	4	4	4	3	4	4	4	3	4	3
Teacher # 24	4	4	4	4	4	4	4	4	3	4	3
Teacher # 25	3	3	4	4	4	4	3	4	3	4	3
Teacher # 26	4	3	4	4	3	4	4	4	1	4	3
Teacher # 27	3	3	4	4	4	4	4	4	4	4	4
Teacher # 28	3	4	4	3	4	3	4	4	3	4	3
Teacher # 29	4	4	3	4	4	4	4	3	4	4	3
Teacher # 30	4	3	3	4	2	4	3	4	3	4	2
Teacher # 31	3	4	2	4	4	4	3	4	2	4	2
Teacher # 32	3	3	4	4	4	4	1	1	2	4	3
Teacher # 33	4	3	4	4	4	4	4	4	4	4	2
Teacher # 34	3	3	4	4	4	4	3	4	3	4	2
Teacher # 35	3	3	3	3	3	4	3	4	4	3	3
Mean	3.343	3.400	3.600	3.657	3.657	3.543	3.514	3.714	2.857	3.943	2.914
STD	0.482	0.497	0.553	0.482	0.539	0.701	0.658	0.622	0.912	0.236	0.612

Appendix H

Classroom Observation Form

Classroom Observation

Building:	
Date / School Week:	⊙
Grade Level:	- Select One - ▾
Subject:	○ Comm. Arts ○ Math ○ Science ○ Social Studies ○ Fine Arts ○ Health/PE ○ Practical Arts ○ Special Ed. ○ Foreign Language
Group Size:	○ Small Group ○ Large Group ○ Individual Work
Teacher	
Textbooks	○ Yes ○ No ○ N/A
Teacher's Guide	○ Yes ○ No ○ N/A
Verification Sheets	○ Yes ○ No ○ N/A
District Curriculum	○ Yes ○ No ○ N/A
Supplemental Materials/Equipment	○ Yes ○ No ○ N/A
Instructional Strategies	
Teaching and Learning is culturally responsive	○ Extensive ○ Moderate ○ Slight
Identifying similarities and differences	○ Extensive ○ Moderate ○ Slight
Reinforcing effort and providing recognition	○ Extensive ○ Moderate ○ Slight
Nonlinguistic representations	○ Extensive ○ Moderate ○ Slight

Provides feedback	○ Extensive ○ Moderate ○ Slight
Differentiated instruction observed	○ Yes ○ No
Feedback drives instruction	○ Yes ○ No
Feedback brings about positive communications	○ Yes ○ No
Student engagement Level	○ High (Above 90%) ○ Moderate (75-89%) ○ Low (50-74%) ○ Disengaged (Below 50%)
Teacher engagement	○ Yes ○ No
Student work on display in classroom	○ Yes ○ No
Student work is displayed with a scoring guide	○ Yes ○ No

Instructional Delivery

The objective is verbally stated or posted.	○ Extensive ○ Moderate ○ Slight
The objective is on the verification sheets.	○ Extensive ○ Moderate ○ Slight
The topic/content is part of the curriculum.	○ Extensive ○ Moderate ○ Slight
The content vocabulary/concepts focused and stressed.	○ Extensive ○ Moderate ○ Slight
Instruction builds on students' cultural experiences.	○ Extensive ○ Moderate ○ Slight
The instruction is aligned with the objective.	○ Extensive ○ Moderate ○ Slight
Equity concerns are noted.	○ Extensive ○ Moderate ○ Slight
Standard English is used.	○ Extensive ○ Moderate ○ Slight
Class discussion	○ Extensive ○ Moderate ○ Slight
Distance learning	○ Extensive ○ Moderate ○ Slight

Distance learning	○ Extensive	○ Moderate	○ Slight
Group work	○ Extensive	○ Moderate	○ Slight
Hands-on/experiments/laboratory work	○ Extensive	○ Moderate	○ Slight
Learning centers	○ Extensive	○ Moderate	○ Slight
Peer evaluaton	○ Extensive	○ Moderate	○ Slight
Question and answer / cues	○ Extensive	○ Moderate	○ Slight
Seat work (e.g., worksheets, textbook readings)	○ Extensive	○ Moderate	○ Slight
Student presentations	○ Extensive	○ Moderate	○ Slight
Other	○ Extensive	○ Moderate	○ Slight
DOK Level Prevailing	○ 1 (Recall) ○ 2 (Skill/Concept) ○ 3 (Strategic Thinking) ○ 4 (Extended Thinking)		
DOK Level Highest Reached	○ 1 (Recall) ○ 2 (Skill/Concept) ○ 3 (Strategic Thinking) ○ 4 (Extended Thinking)		

Technology		
Was electronic technology used?	○ Yes ○ No	
If yes, indicate use level:	○ Level 1 (Literacy)	Centers on acquiring and practicing technical skill: technology is something to learn.
	○ Level 2 (Adaptive)	Automates traditional teacher and student roles: technology is optional.
	○ Level 3 (Transforming)	Expands role and/or products: technology is essential.

Classroom Learning Environment	
The physical climate is:	○ Is conducive to learning ○ Somewhat conducive to learning ○ Not conducive to learning
The instructional climate is:	○ Is conducive to learning ○ Somewhat conducive to learning ○ Not conducive to learning

Vitae

JoAnn Clay has been an educator in the Ferguson-Florissant School district in North St. Louis County. Educational experiences have included grades one-12, the training of teachers in Reading Recovery, and an elementary principal, grades K-6.

Educational studies have resulted in a Master's Degree from Webster University, Reading Certification from Harris University and Texas Women's University, Administrative Certification from Lindenwood University, and a Bachelor of Science Degree from Washington University.