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The effect of literature mapping of basal vocabulary on word knowledge and comprehension

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THE EFFECT OF LITERATURE MAPPING
OF BASAL VOCABULARY ON
WORD KNOWLEDGE AND COMPREHENSION

By

Andrea Lynn Morris, B.S., M.Ed.

A Dissertation Presented in Partial
Fulfillment of the Requirements for the Degree
Doctor of Education

COLLEGE OF EDUCATION
LOUISIANA TECH UNIVERSITY

May 2005

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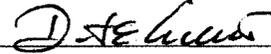
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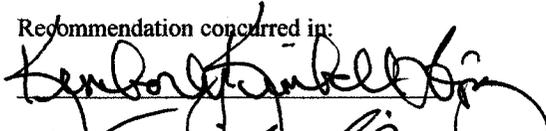


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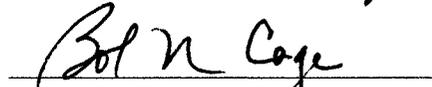
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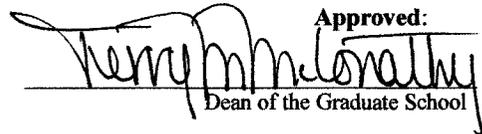




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ABSTRACT

The purpose of this study was to ascertain whether two instructional interventions in reading that utilize literature mapping within a story element frame, T-CaPS MaP via transparency mapping, or computer-designed mapping via Inspiration, would affect reading ability of leveled sixth grade groups. T-CaPS MaP, designed by the researcher, is a combination of well-known story grammars that was used to expand and enhance basal vocabulary instruction. *T* represents the title of the story, *C* represents characters in the story; *a* represents and; *P* represents point of view of the author; *S* represents setting of the story; *M* represents the mood of the story; *a* represents and; and *P* represents plot/theme. Fifth grade scores on the *Iowa Test of Basic Skills (ITBS)* were used to determine a high group, at or above the 60th percentile, and a low group, at or below the 40th percentile. A quasi-experimental design utilizing the nonequivalent control-group design was used with six individual ANCOVAs to compare group mean test scores with the high and low groups among the three treatments: traditional, transparency, and Inspiration. Three schools with similar characteristics were randomly assigned to experimental and control conditions using the randomized, pretest-posttest control group design. The control school used traditional instruction as defined by the instructional practices of the classroom teacher. Six individual analyses of covariance were used to compare the three groups using pretest scores as a statistical means to remove preexisting academic elements. The level of statistical significance was set at $p < .05$. Five of the six ANCOVAs showed that Reading Level had a significant

main effect on the dependent variable scores. A relationship between reading levels and methods of instruction was determined using student scores on the *Gates-MacGinitie Reading Test*, used to evaluate general vocabulary and comprehension, and the *Harcourt Reading Skills Assessment*, used to evaluate specific vocabulary and comprehension taught from the Harcourt Reading Series. The critical comparison was between the experimental and control groups on pretests and posttests evaluating the dependent variables of vocabulary and reading comprehension. There was one interaction effect with the instructional method of Inspiration, a computer software program that produces semantic maps, between the high and low groups measuring general comprehension skills on the *Gates MacGinitie Reading Test*. Students in the high group, those with scores at or above the 60th percentile, scored higher on the general comprehension posttest than the other tests, and students in the low group, those with scores at or below the 40th percentile, scored lower on the general comprehension posttest than the other tests. This unexpected interaction could imply that classroom teachers should be aware of the effect of various teaching styles in the area of reading and their impact on student achievement.

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Lyman M. Davis

Date

May 18, 2005

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CHAPTER ONE

Introduction

When some children pick up a book to read, they experience a wonderful anticipation like gazing out an open window on a clear, sunny day. However, for approximately 60% of the children who live in America, that window is closed, and lack of reading skills causes fear instead of anticipation. For at least 20-30% of this group of children, reading is one of the most complex tasks they will have to conquer in school (Honig, Diamond, & Gutlohn, 2000). Reading is the complex operation that encompasses the interaction between perceptual processes, cognitive skills, and metacognitive knowledge (Myers & Paris, 1978).

Lyon (1998), Chief of the Child Development and Behavior Branch of the National Institute of Child Health and Human Development (NICHD) at the National Institutes of Health (NIH), stated in numerous speeches to congressional committees that the organization he represents considers “reading failure to reflect not only an educational problem but a significant public health problem as well” (p. 1). On April 28, 1998, Lyon stated the following to the Senate Committee on Labor and Human Resources:

The NICHD considers reading failure to reflect not only an educational problem but a significant public health problem as well. Research has shown that if children do not learn how to use language to communicate ideas and perspective, to read and write, to calculate and reason mathematically, and to solve problems,

their opportunities for fulfilling and rewarding life are seriously compromised. Specifically, in our NICHD longitudinal studies, we have learned that school failure had devastating consequences with respect to self-esteem, social development, and opportunities for advanced education and meaningful employment. (p.1)

National Reading Panel Study

Legislation passed by Congress in 1997 directed a branch of the National Institutes of Health (NIH) to work with the U. S. Department of Education in order to create a panel that would identify research-based evidence about the best way to teach children to read. After a formal process that nominated and considered more than 300 candidates, 14 members representing researchers, teachers, and administrators, psychologists, child development experts, and parents were appointed to the panel (National Institute of Child Health and Human Development, 2000).

The National Reading Panel used three methods for gathering data for its study:

- a. reviewed a variety of databases to determine what research had already been conducted on how children learn to read,
- b. gathered information from the public about their needs and their understanding of reading research, and
- c. identified issues to be researched. (National Institute of Child Health and Human Development, 2000, p. 1-7)

In the review of these databases, the panel used a methodology containing a set of guidelines that defined high quality, credible, scientific research. Only experimental and quasi-experimental studies that included adequate and useful ample size, well-

defined procedures, and a comparison of reading performance between groups that received a specific type of reading instruction versus a control group were used (National Institute of Child Health and Human Development, 2000).

After two years, the National Reading Panel reviewed research-based knowledge in reading instruction in order to identify the topics and the effectiveness of different approaches used to teach children to read. This major report in the field of reading identified seven topics from approximately 30 areas suggested by parents, teachers, educators, and other persons interested in reading to research and investigate.

This study focused on two of the seven topics reflected in the following questions: “What impact does vocabulary instruction have on reading?” and “What impact does comprehension strategy instruction have on reading?” (National Institute of Child Health and Human Development, 2000, pp. 4-15, 4-39).

Purpose of the Study

The purpose of this study was to ascertain whether two instructional interventions in reading that utilize literature mapping within a story element frame via (a) transparency mapping or (b) computer-designed mapping, called Inspiration, affect reading ability of leveled sixth grade reading groups as measured by the *Gates-MacGinitie Reading Test* and the *Harcourt Reading Skills Assessment*. Both the transparency mapping and the Inspiration mapping utilized the same template designed by the teachers in this study during training for this experimental design.

A relationship between reading levels and methods of instruction was determined using student scores on the *Gates-MacGinitie Reading Test, Level 6, Form S*

and *T* and the *Harcourt Reading Skills Assessment*. Student scores on the *Iowa Test of Basic Skills (ITBS)* were used to determine reading levels of high, at or above the 60th percentile, and low, at or below the 40th percentile.

The following conceptual hypothesis was examined: sixth grade students, regardless of reading level, who are taught basal vocabulary using literature mapping will perform significantly better in reading comprehension than students who are taught using the traditional approach. The traditional approach is defined by reading instructional methods used by the sixth grade teacher in the control group.

Justification of the Study

The 2002 National Assessment of Educational Progress (NAEP), an assessment of the achievement of selected samples of American students in private and public schools in grades 4, 8, and 12, revealed that 36% of fourth-grade students, 25% of eighth-grade, and 36% of twelfth-grade students were reading below the basic level of achievement (United States Department of Education, 2004). No significant change in fourth-grade reading scores has been detected since 1992. Across the United States, therefore, a considerable number of students do not possess the knowledge or skills essential to complete learning activities at the appropriate grade level.

Student scores in Louisiana rank lower than the national average. According to the 2000-2001 Louisiana State Educational Progress Report, 22.2% of the second graders and 24.5% of the third grade students in Louisiana were reading below grade level as evidenced by their performance on the *Directed Reading Assessment*, a state test of reading comprehension. On the English Language Arts portion of the *Louisiana Education Assessment Program 21 (LEAP 21)*, a state-designed assessment of reading

comprehension, 40.5% of the students in the fourth grade and 48.3% of the students in the eighth grade scored below the basic level, the level that identifies only the fundamental knowledge skills needed for the next level of schooling. These low scores indicate there are a number of students in north Louisiana who are not comprehending or constructing meaning from written tests (Louisiana State Department of Education, 2001).

The 1999-2000 District Composite Reports of Louisiana data showed that 68.8% of the schools in north Louisiana school districts scored academically below the state average during the 1998-1999 school years. This statistic is further evidence that students are struggling with reading on the local as well as the national level (Louisiana State Department of Education, 2000).

Further justification for this study is a comparison of two researched-based articles: (a) the report from *The Reading Teacher*, the journal published by the International Reading Association titled, "Literacy Research and Practice: What's Hot, What's Not, and Why" written by Cassidy and Wenrich (1999) and (b) the report, *Teaching Children to Read*, issued by The National Reading Panel, the panel created by the U. S. Department of Education to identify research-based evidence on the best methods to teach children to read. Cassidy and Wenrich stated that word knowledge/vocabulary was a focus of attention in the mid-1980s but at least 75% of the literacy leaders in the nine regions of the world agree that word knowledge/vocabulary is not a hot topic in 1997.

Rupley, Logan, and Nichols (1999) determined that vocabulary instruction is not a focus of professional writing and discussion. They reported that during 1998

The Reading Teacher did not publish any articles devoted to vocabulary instruction. Even in 1997, only 2% of all manuscript submissions to *The Reading Teacher* addressed instruction in vocabulary. This article further substantiates that vocabulary is not a focus of research.

However, the extensive report from The National Panel, *Teaching Children to Read*, stated that

The need in vocabulary instruction research is great. Existing knowledge of vocabulary acquisition exceeds current knowledge of pedagogy. There is a great need for the conduct of research on these topics in authentic school contexts, with real teachers, under real conditions. (National Institute of Child Health and Human Development, 2000, p. 4-17)

Under the Reading First Act part of the No Child Left Behind legislation based on research compiled by The National Reading Panel, the federal government supported the need for improved reading achievement by allotting approximately \$994 million to be distributed to schools in 2003. President Bush and Congress acknowledged that “teaching young children to read is the most critical educational priority facing this country” (U. S. Department of Education, 2002, p. 1). Through the accountability challenge, students in grades 3-8 will be tested annually in reading to monitor consistently the students’ reading abilities (United States Department of Education, 2004).

The justification for this study is the following: (a) students nationally, state-wide, and locally are not reading at the appropriate grade level; (b) adequate research could be enhanced in the area of vocabulary instruction and comprehension; and (c) the

federal government is recommending the conduct of word knowledge/vocabulary and comprehension research.

Theoretical Framework

Constructivism, an approach to teaching and learning based on the premise that cognition (learning) is the result of mental construction, is the foundation of the theoretical framework of this study. Mental construction is the building process in which students fit new information together with what they already know and have experienced. The constructivist approach to teaching and learning is based on a combination of subsets of research within cognitive psychology and social psychology. The theories in these subsets are the building blocks of the theoretical framework of this study. Ausubel, Bruner, Piaget, and Bartlett are considered the main theorists among the cognitive constructionists while Vygotsky is the major theorist among the social constructionists (Huitt, 2003).

Ausubel (1963) dealt with the nature of meaning and believed that the external world gains meaning only as it is changed into the consciousness by the learner. Meaning is created through a form of representation between language and mental context. The incorporation of new information into one's cognitive structures is the subsumption theory. Bruner (1966) held similar views about the hierarchical nature of knowledge, but Bruner leaned strongly toward discovery processes while Ausubel gave more emphasis to the verbal learning methods of speech, reading, and writing. Piaget's (1965) ideas about cognitive development in children influenced Bruner's development of his four theories of instruction: (a) predisposition to learn, (b) structure of knowledge, (c) effective sequencing, and (d) form and pacing of reinforcement.

Vygotsky, the primary social constructivist, theorized that the social context in which learning occurs has a marked effect on learning outcomes and dramatic impact on cognitive development. He coined the term, *Zone of Proximal Development*, the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978). Vygotsky theorized that learning takes place when students are able to perform a certain task with assistance, but not alone (Vygotsky, 1978).

The constructivist classroom presents the student with opportunities to build on prior knowledge and awareness from authentic experience. Students are allowed to explore possibilities, create alternative solutions, revise their thinking, and then present the best solution. These instructional strategies were utilized in this study.

Research Question and Research Hypotheses

The following research questions and subsequent research hypotheses will be answered by this study:

Research Question: Does the method of instruction, through the use of literature mapping of basal vocabulary within a story element frame, differentiate reading achievement between students of high and low reading levels?

Research Hypothesis Set One: There will be significant main effects and interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Vocabulary) scores.

Research Hypothesis Set Two: There will be significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Comprehension) scores.

Research Hypothesis Set Three: There will be significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Total) scores.

Research Hypothesis Set Four: There will be significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T* (Vocabulary) scores.

Research Hypothesis Set Five: There will be significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T* (Comprehension) scores.

Research Hypothesis Set Six: There will be significant main effects and interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element

frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T* (Total) scores.

Limitations of the Study

This study was limited by the inability to obtain a random sample of subjects because of intact classes in the schools in which the data were gathered. The reading curriculum used in the experiment was limited to the Harcourt Reading Series adopted or mandated by the north Louisiana school district in which the study was conducted. The limitation of the time frame was due to the schedule designed by the school system for 50-minute lessons for a 6-week unit. There are limitations resulting from the non-peer reviewed published experimental procedures used in this study.

Definitions of Terms

Terminology used throughout this study is specifically defined according to prior research directly connected with reading, vocabulary, semantic mapping, and comprehension.

Advanced Organizers: Advanced organizers, the forerunner of semantic maps, are major organizational diagrams identifying main ideas and details (Ausubel, 1968).

Comprehension: Comprehension is intentional thinking during which meaning is constructed through interactions between text and reader (Pressley, 2000).

Constructivist Theory: Constructivist theory is instructional theory based on the theme that learning is an active process in which learners construct new ideas or concepts based upon their current and past knowledge (Bruner, 1966).

Direct Instruction: Direct instruction in comprehension means explaining the steps in a thought process that leads to comprehension (Anderson, 1985).

IOWA: Iowa Tests of Basic Skills, Forms K, L, and M, provide a comprehensive assessment of student progress in the basic skills (Brookhart & Cross, 1998).

Inspiration: Inspiration is a computer-based software program that creates semantic maps (Dabbagh, 2001).

LEAP 21: LEAP 21 is the testing program that measures student proficiency of content standards in Louisiana. It is administered to fourth and eighth grade students (Louisiana State Department of Education, 2003).

Literature Map: A literature map is a structured way to address the language of literature by applying literary terms or story grammar to a book or story (Yopp & Yopp, 2001).

National Institute of Child Health and Human Development (NICHD): The NICHD is an institute of the U. S. Department of Health & Human Services that oversees policies and information related to children's health in the United States (National Institute of Child Health and Human Development, 2000).

Reading: Reading is the complex operation that encompasses the interaction between perceptual processes, cognitive skills, and metacognitive knowledge (Myers & Paris, 1978).

Semantic Mapping: Semantic mapping is the categorization procedure that organizes words related to a core concept into meaningful clusters (Heimlich & Pittelman, 1986).

Story Grammar: The concept of story grammar is based on the way people retell narrative stories. Basically, the main character encounters a problem, tries to solve it,

and experiences resolution. There are many terms used in the concept of story grammar: characters, goals, obstacles, setting, outcome, theme, point of view, etc. (Stahl, 2000)

T-CaPS MaP: T-CaPS MaP is a story element frame designed by the researcher and used in this study. *T* represents the title of the story; *C* represents characters in the story; *a* represents and; *P* represents point of view of the author; *S* represents setting of the story; *M* represents the mood of the story; *a* represents and; and *P* represents plot/theme. These well-known story grammars are discussed by Yopp and Yopp (2001) and Tierney and Readence (2000).

Word Knowledge: Word knowledge is used to explain the interrelated body of words that can be pronounced or read orally and the body of words whose meanings are understood and used (Chall, 1987).

Organization of the Remainder of the Study

Chapter Two of this study contains a review of classic and contemporary literature focusing on the relevant theories, concepts, and findings of previous studies that have been conducted in the areas of the dependent variables: (a) vocabulary knowledge and (b) reading comprehension. The independent variables are: (a) traditional basal vocabulary instruction, (b) literature mapping of basal vocabulary utilizing transparency maps within a story element frame, and (c) literature mapping of basal vocabulary utilizing computer maps within a story element frame. For basic reading clarification, direct instruction, vocabulary acquisition, vocabulary instruction, text comprehension strategies, comprehension monitoring (metacognition), graphic and semantic organizers, literature mapping, scaffolding, gradual release of responsibility model and reading comprehension are discussed. Chapter Three contains a description

of the methodology used in this study: the research design, sample selection, materials, instrumentation, procedural details, null hypotheses, and data analysis. Chapter Four includes a presentation, analysis, and summary of data collected with appropriate charts and graphs. Chapter Five presents a summary of the completed study, conclusions that are drawn from the study, implications for classroom practices, and recommendations for future research.

CHAPTER TWO

Review of Related Literature

The purpose of this chapter is to review the literature concentrating on the process of reading. A brief historical perspective on reading is presented using the eras developed by Alexander and Fox (2004) followed by the theoretical framework of constructivism (Huitt, 2003) divided into the applicable theories of subsumption (Ausubel, 1963), Gestalt (Wertheimer, 1959), Bruner's Theory of Instruction (Brunner, 1990), Piaget's Stages of Development (Piaget, 1965), and Vygotsky's Zone of Proximal Development (Vygotsky, 1978).

The process of reading is presented with a focus on the areas of comprehension (Tierney & Readence, 2000), vocabulary acquisition (National Institute of Child Health and Human Development, 2000), vocabulary instruction (Klesius and Searls, 1990), and text comprehension strategies (National Institute of Child Health and Human Development, 2000). The literature relating to these areas of reading were chosen because of their application to this study. The review of literature concludes with a summary of the literature that leads to the specific methodology of this study.

Historical Perspective on Reading

An historical perspective on reading research and practice written by Alexander and Fox (2004) revealed that research concerning the reading process and subsequent reading instruction has moved through several stages that reflect varying views if the

learning and reading process within the last fifty years. These stages or eras are (a) The Era of Conditioned Learning (1950-1965), (b) The Era of Natural Learning (1966-1975), (c) The Era of Information Processing (1976-1985), (d) The Era of Sociocultural Learning (1986-1995), and (e) The Era of Engaged Learning (1996-Present).

The Era of Conditioned Learning

The Era of Conditioned Learning (1950-1965) was an era during which a theoretical orientation, heavily influenced by behaviorist theorists like Skinner, Hume, Glaser, and Gestalt, proposed that learning resulted from repeated, controlled stimulation from the environment that obtained a predictable response. The reading processes could be clearly defined and divided into major parts. Each part would be practiced without cognitive involvement until it was mastered. An example of a reading strategy developed during this era would be phonics instruction with each letter presented with its corresponding sound then blended into a word. The skills were presented and practiced orally and in writing until mastered (Alexander & Fox, 2004).

The Era of Natural Learning

The Era of Natural Learning (1966-1975) was an era in which learning was viewed as a natural process that was developed through meaningful use. Children were encouraged to explore their environment and interests. Whole language, a belief-driven approach to learning, was an outgrowth of the natural learning process. Students in a whole-language classroom are encouraged to share in the decision making process, suggest and design activities, and set their own goals as readers and writers bounded by their interests (Alexander & Fox, 2004).

The Era of Information Processing

In the Era of Information Processing (1976-1985), learning research focused on the areas of cognitive processes with an emphasis in the information-processing theories. Increased U. S. federal funding for basic reading research encouraged more persons from the areas of cognitive psychology, English, literature, and communications to conduct and write about concepts developed in learning and reading research. Schema and interactive theories are theoretical models that emerged from the research done during this period (Alexander & Fox, 2004).

According to the Schema Theory, comprehension depends on integrating new knowledge with a network of prior knowledge. The network of prior knowledge is enhanced and stimulated by activities involving the senses. Directly related to the schema theory is the interactive theory of reading that allows students to interact with a large number of factors related to themselves, the text being read, and the context in which reading occurs (Heilman, Blair, & Rupley, 2002).

The Era of Sociocultural Learning

The Era of Sociocultural Learning (1986-1995) is characterized by the constructivist theory that “acknowledged learning as individualistic and rejected the mechanistic and computer-like aspects of learning implicit in this stance” (Alexander & Fox, 2004, p.45). Meaning, therefore, is constructed from the unknown to the known through the use of scaffolds, instructional procedures that are provided by the teacher for support to help the children bridge the gap between their current abilities and the intended goal.

The Era of Engaged Learning

The Era of Engaged Learning (1996-Present) is an era of active and interactive involvement in the cognitive, aesthetic, or sociocultural aspects of reading. There are two main characteristics of this era: (a) students encounter a variety of textual materials, including a variety of nonlinear text, that includes hypermedia and hypertext accompanied by a database management system that guides readers to other informational sites and sources; and (b) consideration is given to learners' interests, goals, self-efficacy beliefs, self-regulation, and active participation in reading text-based learning in relation to their knowledge, strategic abilities, sociocultural background, and features of the learning context (Alexander & Fox, 2004).

Two reading approaches are characteristic of this era. Language Experience, a reading approach based on the students' interest and language with the teacher as the recorder and the child/children verbalizing a common event, or their reaction to the event, and the children reading the teacher-written text. Literature-Based approach is a program using authentic literature instead of the basal reader as students are guided to understand, enjoy, and appreciate literature, and reading skills and strategies are taught through the authentic literature and language activities (Morrow & Gambrell, 2000).

In an overview of the eras of reading, many of the theories that have been researched and developed are being utilized in the classrooms today. There has been a "shifting emphasis on the physiological, psychological and sociological dimensions and each era weighted these dimensions differently" (Alexander & Fox, 2004, p. 57). The current era, the Era of Engaged Learning, encompasses the focus of

this study because of the engagement factor; however, Constructivism, the theoretical framework of this study, was developed through concepts developed in (a) The Era of Information Processing (1976-1985), (b) The Era of Sociocultural Learning (1986-1995), and (c) The Era of Sociocultural Learning (1986-1995) (Alexander & Fox, 2004).

Theoretical Framework

Constructivism is the broad, major conceptual framework for this study. Selected major theories that compose the constructivist theoretical framework for this study begins with Ausubel's theory of subsumption, connecting the old to the new, and Gestalt theory of cognitive grouping where concepts must be clustered. Bruner's constructivist theory, a theory in which knowledge is built on prior knowledge, Bartlett's schema theory, a theory in which memory constructs a mental structure for processing information, along with Piaget's stages of cognitive development complete the framework for this study that examined the major areas of comprehension and vocabulary in the reading process.

Constructivism

Constructivism is a theoretical approach to learning that can be used to explain how understanding takes place and is a combination of subsets of cognitive psychology and subsets of social psychology. Ausubel, Bruner, and Piaget are considered the main cognitive theorists while Vygotsky is the major social constructionist (Huitt, 2003). The fundamental beliefs underlining this paradigm for learning is (a) all knowledge is constructed through a process of reflective abstraction, (b) cognitive structures within the learner facilitate the process of learning, and (c) the

cognitive structures in individuals are in a process of constant development through the senses (Huitt, 2003).

World experiences are facilitated through the five senses. Periera (1996) stated that:

The information is transmitted to our brain which then attempts to construct a meaningful account of the sensory inputs. The construct depends heavily on our previous experience as the brain tries to relate the incoming information to the information already assimilated. This previous experience is, to a large extent, a prejudice. We do not “see” the world as it is but as we are. This leads to the first of the basic principles of constructivism: truth is not absolute; we can only construct viable explanations of our experiences. (p. 26)

A second principle of constructivism is that knowledge is not passively received but is actively built by the learner. During the building process, the incorporation of new materials into one’s cognitive structures, subsumption, was developed into a widely accepted theory (Ausubel, 1968).

Subsumption Theory

From the Ausubel perspective, subsumption is the meaning of learning. Information is organized hierarchically to the previous information that had been processed during the subsumption process. The two types of subsumption are correlative subsumption, new material is an extension or elaboration of what is already known; and derivative subsumption, new material or relationships can be derived from the existing structure. In using derivative subsumption, completely new concepts can emerge and previous concepts can be changed or expanded to include

more of the previously existing information. This process is called *figuring out* (Ausubel, 1968).

Gestalt Theory

Ausubel was greatly impacted by Gestalt theory, a theory that focused on the mind's perceptive processes, in his development of advanced organizers (Ausubel, 1978). The word "gestalt" has no direct translation in English but refers to a way a thing has been *gestellt*; i.e. placed or put together. Some other common translations include form or shape. Gestalt theory follows the foundational principle that the whole is greater than the sum of its parts. In viewing the *whole*, a cognitive process takes place, the mind makes a leap from comprehending the parts to realizing the whole (Wertheimer, 1959).

In Gestalt theory, the idea of grouping in the cognitive processes is foundational. The primary factors that determine grouping are (a) proximity (where items are in relationship to each other and how that affects gestalt), (b) similarity (items similar in some respect tend to be grouped together), (c) closure (items that are grouped together if they tend to complete some entity), (d) simplicity (items will be organized into simple figures according to symmetry, regularity, and smoothness), and (e) alignment (lining up objects to organize and form groups) (Driscoll, 1993).

Ausubel's work has been compared with Bruner's research and theory development. Both held similar views about the hierarchical nature of knowledge, but Ausubel placed more emphasis on the verbal learning methods of speech, reading, and writing while Bruner was oriented toward the discovery processes (Huitt, 2003).

Theory of Instruction

Bruner's research featured the following theories of instruction: predisposition to learn, structure of knowledge, effective sequencing, and form and pacing of reinforcement. The feature of a predisposition to learn specifically states the experiences which motivate the learner to want to learn in general or something specific. Social factors, teachers, and parents influence the motivation for learning. Bruner believed that learning and problem solving emerged out of exploration when students are given the opportunity (Bruner, 1990).

Bruner's second theory of instruction, structure of knowledge, proposes that it is possible to structure knowledge in a way that the learner can easily grasp the concepts. For maximum effectiveness, structuring knowledge, a relative feature, should take the following into account: (a) understanding the structure of a subject and categorizing as much as possible, (b) placing details within the context of an ordered and structured pattern, (c) generating knowledge which is transferable to other contexts, and (d) making a body of knowledge simple enough for the learner to understand it and in a recognizable form relative to the learner's experiences (Bruner, 1990).

Effective sequencing is Bruner's third theory of instruction and states that no one sequencing pattern or instruction will fit every learner. Sequencing, or lack of it, can make learning either easier or more difficult. Sequencing ties into the fourth theory of instruction which is the form of the content and the pacing of reinforcement. The form and pacing should be appropriate for the age, prior knowledge, and experiences of the learner (Bruner, 1990).

Stages of Development

Bruner's theory of instruction was influenced by Piaget's ideas concerning cognitive development in children. Piaget emphasized that the development of knowledge representation and manipulation is not genetically programmed into the brain. He saw children as young scientists who are driven to understand their world and to change their understanding as information is learned (Bhattacharya & Han, 2001).

Piaget identified the following four major stages in cognitive development:

- (a) sensorimotor stage (birth to 2 years old),
- (b) pre-operational stage (2-7 years old)
- (c) concrete operational stage (7-11 years old), and
- (d) formal operational stage (11 years old to adult) (Piaget, 1965).

During the sensorimotor stage, which has six stages from birth to 2 years old, the child's cognitive system is limited to motor reflexes at birth but builds on these reflexes to develop more highly developed procedures. The child learns to generalize his/her activities to a wider range of situations and combine them into increasingly lengthy chains of behavior (Huitt & Hummel, 2003).

During the pre-operational stage, which has two stages from 2 to 7 years old, the child acquires representational skills in the area of mental imagery and language. He/she becomes very self-oriented and views the world from only his/her own perception (Huitt & Hummel, 2003).

During the concrete operations stage, from 7 to 11 years old, the child continues to develop cognitively and is able to consider another person's view point. He/she can consider more than one option at a time with his/her thought processes becoming more

logical, flexible, and organized. While understanding concrete problems, he/she cannot yet contemplate or solve abstract problems (Huitt & Hummel, 2003).

Piaget considered the formal operations stage, 11 years old to adult, as the ultimate stage of development. Persons who reach this stage have the capability to think logically and abstractly as well as reason theoretically. Only 35% of high school graduates in industrialized countries obtain skills associated with formal operations. Many adults do not think formally (Huitt & Hummel, 2003).

According to Piaget, adaptation and organization are the two major principles that guide human intellectual growth and biological development. To survive in a specific setting, individuals must adapt to physical and mental stimuli. The two facets of the adaptation process are assimilation and accommodation. Human beings have mental structures that assimilate external events, according to Piaget, and adapt them to fit their mental structures. Further, mental structures adapt to new, unusual, and constantly changing facets of the external environment (Bhattacharya & Han, 2001).

Organization, Piaget's second principle, relates to human adaptive mental structures. The mind, organized in complex and integrated ways, utilizes schema to associate sets of perceptions, ideas, and actions. At each developmental stage, cognitive development, affected by adaptation, organization, and physical maturation, is a consideration when planning and implementing instruction (Bhattacharya & Han, 2001).

Zone of Proximal Development

One of the important implications of Piaget's theory of adaptation of instruction to the learner's developmental level is Vygotsky's theory that the social context in which learning occurs has a marked effect on learning outcomes. Instruction would be effective

only if students are allowed to perform certain learning tasks with assistance, but not alone (Vygotsky, 1978).

Vygotsky (1978) believed that what the learner is able to do in collaboration today, he/she will be able to do independently tomorrow. He suggested that individuals are directed by their own mental processes as they interact with others but these processes are influenced by their social experiences. Vygotsky argued that mental functions begin on a social level but then move to an inner level, a process termed *internalization*. Tharp and Gallimore (1988) described the Zone of Proximal Development as a four-stage process (a) where performance is assisted by more capable others; (b) where performance is assisted by self; (c) where performance is developed, automatized, and fossilized; and (d) where de-automatization of performance leads to recursiveness through previous stages.

The theoretical frame for this study is centered on the following cognitive processing theories: (a) subsumption, where students connect the old with the new; (b) Gestalt theory, where students group like concepts; (c) Bruner's theory, where students use prior knowledge to develop concepts; (d) Bartlett's schema theory, where students utilize memory to construct a mental structure for processing information; and (e) Piaget's stages of cognitive development, where students' cognitive skills can be predicted for instructional purposes. This frame provided the structure for the experimental design of examining the dependent variables of comprehension and vocabulary in the reading process.

Reading Process

The National Institute of Child Health and Human Development, established in 1965, has been continually studying students using scientifically based research methods to determine conditions and factors that foster strong reading development. The following conditions have been identified: (a) environmental, (b) experiential, (c) cognitive, (d) genetic, (e) neurobiological, and (f) instructional (Honig, Diamond, & Gutlohn, 2000).

However, research has recognized and targeted seven key factors that influence reading development, regardless of risk factors such as socioeconomic level or physical impairments. These key factors that influence reading are (a) development of phonemic awareness and of the alphabetic principle (how print maps to speech), (b) ability to decode words, (c) automaticity with enough words, (d) acquisition of vocabulary along with the application of reading comprehension strategies, (e) extensive reading of both narrative and expository texts, and (f) maintained the motivation to learn (Honig et al., 2000, p. 17)

As these influential factors are considered, reading must be viewed as a language tool for communication. It is a dynamic process which requires active, meaningful communication between the author and the reader. Constructing meaning from written text is accomplished through the experiences and knowledge of the reader (Heilman, Blair, & Rupley, 2002). As Glazer and Searfoss (1988) contended,

Reading is receiving ideas, experiences, feelings, emotions, and concepts. It is an activity that permits one to gain vast knowledge. When reading, we can live and travel vicariously and become acquainted with people and events of the past that

have shaped our worlds. Reading creates for us mental maps of events so that ideas can be transmitted from the mind of one, the author, to the mind of another—the receiver/reader. (p. 2)

Reading Comprehension

The basic purposes of reading are to: (a) allow children to gain an understanding of the world and themselves, (b) develop appreciations and interests, (c) find solutions to their personal and group problems, and (d) develop strategies by which they can become independent comprehenders. Reading involves comprehension, and the major goal of reading instruction should be the provision of learning activities that will enable students to think about and respond to what they read (Tierney & Readence, 2000).

Using four important principles, teachers can encourage comprehension by (a) applying a variety of methods for teaching vocabulary, (b) actively involving students in vocabulary instruction, (c) providing instruction that demonstrates targeted vocabulary relationships to other words, and (d) providing many opportunities to use vocabulary. Application of these principles are suggested using drama, semantic mapping, video technology, keyword method, vocabulary picture cards, preprinted response cards, write-on response boards, and class-wide peer tutoring (Foil & Alber, 2002).

Viewed as the “essence of reading,” comprehension is vital to life-long learning as well as academic learning (Durkin, 1993). Seven predominate themes emerged as the National Reading Panel began its analysis of the existing research data on reading comprehension. The three themes relevant to this study are the following:

1. Reading comprehension is a cognitive process that integrates complex

skills and cannot be understood without examining the critical role of vocabulary learning and instruction and its development;

2. Active interactive strategic processes are critically necessary to the development of reading comprehension; and
3. The preparation of teachers to best equip them to facilitate these complex processes is critical and intimately tied to the development of reading comprehension. (National Institute of Child Health and Human Development, 2000, p. 4-1)

Direct Instruction

During the analysis process by the National Reading Panel, 203 studies on instruction of text comprehension were examined for some generalized conclusions. The Panel concluded that text comprehension instruction should be explicit instruction strategies such as recall, question answering and summarization of texts within a natural learning situation (National Institute of Child Health and Human Development, 2000).

Pressley (2000) developed some recommendations for development of comprehension abilities through direct instruction after an analysis of reading research. These recommendations include (a) teaching decoding skills, (b) encouraging the development of sight words, (c) teaching students to use semantic context cues to evaluate whether decodings are accurate, and (d) teaching vocabulary meanings. He emphasized the need for the teacher to model and encourage extensive reading.

Initial conceptual instruction of vocabulary needs to be distinguished from questioning, discussion, and guided practice. Direct instruction in comprehension through vocabulary instruction and instruction of story elements consists of explaining

the steps in a thought process that lead to understanding the main concepts of a story. It may mean that the teacher models a strategy by thinking aloud about how he or she is going about the process of understanding a passage. The instruction includes information about why and when to use the strategy. Instruction of this type is the surest means of developing the strategic processing that was identified as characteristic of skilled readers (Anderson, 1985).

In order to determine what strategies were offered for comprehension instruction, Durkin (1981) examined the manuals of five basal reader programs, kindergarten through grade six. She wanted to see if teaching practices she observed in the classrooms matched the strategies offered in the manuals. The basal programs chosen for the study were Allyn and Bacon, Ginn and Company, Harcourt Brace Jovanovich, Houghton Mifflin, and Scott Foresman. The manuals offered numerous applications, practice exercises, and assessments instead of direct instruction which directly correlated with the teaching instruction that was observed. Like the teacher, the manuals seemed more “intent on testing comprehension than on teaching it” (Durkin, 1984, p. 29).

Textbook manuals used for reading in the United States are called basal readers although the textbooks contain instructional strategies to teach the skills of writing, speaking, and listening. Approximately 85% of American classrooms utilize the basal readers that are produced by five large companies. Between 1997 and 2000, the annual figure for purchase of basal reading programs was approximately \$1.36 billion (Hiebert, 2002).

Education Market Research designed a detailed market survey in 2002 to determine current trends in the elementary reading market. This survey was sent to

14,000 classroom teachers (grades K-5/6), reading teachers (grades K-8/9), elementary and middle/junior high principals, and district curriculum supervisors in Fall 2002 requesting the name of the basal reader used in their classrooms. The two leading textbook publishers were Houghton Mifflin with 13.4% usage and Scott Foresman with 11.7% usage. Harcourt (8.9%), Scholastic (7.3%), and Macmillan-McGraw-Hill (6.6%) were the next three basal textbooks that were being used in the classrooms. Compared to Education Market Research conducted between 1995 and 2002, the publisher rankings have not substantially changed (Resnick, 2002). A clear majority of the educators surveyed (75.4% compared to 81.5% in Education Market Research's 2000 study) continue to use a basal reading series and either follow closely (26.2%) or choose parts of the basal reader to use as needed (49.2%). Only 25.4% of the educators surveyed indicated that they do not use a basal reading series (Resnick, 2002).

With a great financial investment, however, school systems purchase basal readers that are constructed, adopted, and used to determine the implementation of the standard content of language arts. The basal publishers set the goals, content, instruction, practices, criteria, and methods of evaluation for classroom use with a scope and sequence of reading skills (Resnick, 2002).

The appeal of basal readers is largely the result of the basal reader resources with a consumable workbook containing a variety of practice exercises and a teachers' guide with accompanying charts, pictures, graphs, and other aids that correlate with the stories in the basal reader. Teaching strategies included in the basal readers are pictures, divisions within a story, vocabulary, and a structure of before, during, and after reading questions and learning activities (Hiebert, 2002).

Jetton and Alexander (2000) explored the multidimensional nature of learning from basal texts through a discussion of the essential variables of student knowledge, interest, and use of reading strategies. The critical component of prior knowledge is discussed and evaluated by the researchers in the following statement:

Of all the factors considered in this exploration, none exerts more influence on what students understand and remember from text than does the knowledge they already possess. Prior knowledge helps shape readers' perspectives on text content, the attention they allocate to information within the text, the interest they have in the text, and their judgments of importance.

(Jetton & Alexander, 2000, p. 286)

Prior knowledge is a cognitive aid to gaining word knowledge through three major forms of vocabulary instruction that are generally taught in the classroom: (a) general vocabulary development, (b) basal reading vocabulary development, and (c) content area vocabulary development. Haggard (1986) suggested that these three methods are teacher-generated and are usually followed by dictionary or workbook assignments. Haggard (1986) developed a different approach to vocabulary development with the Vocabulary Self-Collection Strategy (VSS) that begins with the students and teacher discovering a word that would add to student word knowledge. Students identify the word, tell where they found the word, explain the context-derived definition, and explain why they think the class should learn the word.

According to research, the advantage of the VSS method is its emphasis on student choice and student experiences in the vocabulary development. Students are interested in the process of developing the meaning of the targeted vocabulary words.

They are also very intrigued with the context in which the word is used and the practical use of the word in their daily lives (Haggard, 1986).

Independent learners are determined by what really happens in the classroom. Blachowicz (1987) observed six fourth-grade reading groups to determine if vocabulary instruction was a priority. Time allocated to vocabulary instruction, kinds of vocabulary instruction, and the curriculum used for teaching vocabulary were the factors considered in the study.

The results of the study showed that 15-20% of the instructional time in typical reading groups is spent on vocabulary instruction. However, this time was spent in completing contextual sentences from the teachers' manual. Almost all of the vocabulary instruction took place prior to reading the selection, and 45% of the time was spent on using the meanings of words in context. Refining the meanings of the vocabulary words was not done after the selection was read (Balchowicz, 1987).

Effective time utilization is directly correlated to effectiveness of vocabulary instruction. Six aspects of the vocabulary instruction in two basal readers were examined by Ryder and Graves (1994) to determine the effectiveness of vocabulary instruction. The six aspects were (a) the goals of the vocabulary instruction from the basal; (b) the importance, difficulty, and extent to which context aided in word knowledge; (c) the difficulty determined by a pretest; (d) the difficulty of the words determined by frequency; (e) the methods for vocabulary instruction suggested by basal readers; and (f) teacher's ability to predict student knowledge of vocabulary identified for instruction.

Fourth- and sixth-grade students participated in the study using Heath and Silver Burdett basal series. Assessment was also derived from the basal series. The results

indicated that the basal series did a reasonable job of presenting rationale and general description of vocabulary instruction, but many of the targeted words were known by the students. The teacher predictions of student word knowledge were generally incorrect, and instruction was neither sufficiently extensive nor appropriate for the selected words (Ryder & Graves, 1994).

In order to further enrich and extend student vocabulary, Zarry (1999) designed a study to measure the correlation between direct instructions in vocabulary learning via access to a thesaurus to an enriched vocabulary use in writing. Sixth-grade students were given a thesaurus to use to “replace overused words with more exciting and exacting ones” (p. 267). The teachers used games and puzzles involving thesaurus applications in addition to their usual instruction. The results were measured by a writing assessment tool and showed that the students who used the thesaurus with direct instruction were nearly one whole level ahead of the students who did not use the thesaurus (Zarry, 1999).

In addition to the strategy of thesaurus use, there are other strategies to teach vocabulary knowledge and comprehension skills. Spiegel (1981) suggests alternatives that can add variety to instruction. First, ReQuest is a teacher-directed procedure where students are guided in thinking above the literal level using pictures in the story and higher level questioning. Second, Directed Reading-Thinking Activity (DRTA) is a student-directed procedure where students hypothesize about the story and defend the hypothesis. Third, Expectation Outline is a student-directed activity where students determine what they expect to learn from the story.

Prereading Guided Reading Procedure, a student-directed activity where students focus on what they know about the topic or story and read to learn more, and Word Wonder, a student-directed activity where students anticipate vocabulary from the title, picture, and topic, are two methods that are applicable to the basal text (Spiegel, 1981).

As the teacher designs instruction of the stories from the basal, activation of prior knowledge and building background is essential for understanding concepts within the story. Beck (1996) directs teachers to focus discussion on the central problem, a critical concept, or an interview with questioning of the author. This part of the teaching plan provides students with the necessary introductory experiences, discussion, and knowledge to guide understanding of the story content. Students can be taught the same skills targeted in the basal text but in a different, student-centered manner.

Student-centered word mapping with explicit direct instruction was an instructional strategy developed by Rosenbaum (2001) for middle school students. The word mapping activities proved to be an effective tool for vocabulary instruction. The students used the maps with eight identical bubbles daily during independent or assigned readings. The students would be required to find interesting words during reading to activate prior knowledge and extend the word, and use context, dictionaries, and structural analysis to construct and determine personal meaning (Rosenbaum, 2001). Students who used this word mapping were able to link a new word with a specific definition or single context, demonstrate a broad understanding of the word, and produce an applicable response to the word such as an original sentence or definition in the students' words (Rosenbaum, 2001).

In this method, however, there should be a variety of reading tasks used by the teacher to direct instruction to accommodate learning styles, needs, and interests of students in the classroom. Six reading formats were designated for study by Kimbell-Lopez (2003) to practice and apply word recognition, fluency, and reading comprehension strategies. The six strategies of shared reading, read-aloud, guided reading, Readers Theatre, sustained silent reading, and literature circles give teachers a variety of instructional practices.

Selecting the text, grouping strategies, time management, and the role of the teacher must be considered and addressed as a format is chosen to teach reading. Writing used in connection with the formats extends the reading instruction and is another “way to enrich their [students’] literacy growth” (Kimbell-Lopez, 2003, p. 17). Within a direct teaching model, an effective teacher is guided by a structured view of the art and goals for teaching that assists in the transaction between readers and print. Teachers provide explicit instruction of “useful comprehension strategies, teach students to monitor and repair, use multiple strategy approaches, scaffold support, and make reading and writing connections visible to students” (Parado, 2004, p. 275).

Effective teachers not only use explicit and direct instruction for content, but they also use these strategies in teaching learning strategies. They model and often use think alouds to facilitate students’ thought processes that are involved in learning. Students are provided with numerous opportunities to practice and utilize the strategies with teacher guidance and support. Numerous opportunities for practice are important, but application of skills to a variety of content areas to

solve a problem or carry out a goal is also important and meaningful (Parado, 2004).

Vocabulary Acquisition

The first emergent theme that the National Reading Panel identified was the critical role of “vocabulary learning” in the reading process (National Institute of Child Health and Human Development, 2000, p. 4-1). However, as early as 1925, an early reading educator, Whipple, wrote in *The National Society for Studies in Education Yearbook*, “Growth in reading power means, therefore, continuous enriching and enlarging of the reading vocabulary and increasing clarity of discrimination in appreciation of word values” (Whipple, 1925, p. 76).

Growth is an important concept with vocabulary acquisition according to brain research that has discovered that the brain physically changes when exposed to enriched or impoverished environments. D’Arcangelo (1998) stated that

As the nerve cell gets stimulated by new experiences and by exposure to incoming information from the senses, it grows branches called dendrites. Dendrites are the major receptive surface of the nerve cell. One nerve cell can receive input from as many as 20,000 other nerve cells. And if you have 100 billion cells in your brain, think of the complexity! With use, you grow branches; with impoverishment, you lose them. This ability to change the structure and chemistry in response to the environment is what we call plasticity. (p. 21)

A part of schema developed by dendrites called the mental lexicon contains all the words a person knows. Aitchison (1987) has done extensive research into the mental lexicon. He discovered that humans must know three things about a word in order to be

able to use it: (a) its meaning, (b) its role in a sentence, and (c) what it sounds like.

Aitchison further proposes that words are then connected into networks that follow some generalizations:

1. Words are linked if they are formed by habits, such as pen and pencil.
2. Words are linked by semantic field of the original word, such as thread and sew, pins, needles.
3. Words are linked if they are one of a pair, such as husband and wife.
4. Words are linked if they are of the same word class, such as a noun tends to elicit a noun. (Aitchinson, 1987, p. 6)

The size of the human mental lexicon varies. Beginning at age two, children acquire approximately ten new words a day, theoretically giving them a mental lexicon of about 14,000 words by age six. Actual oral vocabulary size at age six varies from 2,500 words to 25,000; yet, most six-year-old children can read or write very few words. Preschool and primary grade students have a larger comprehension and oral vocabulary than their reading and writing vocabularies (Johnson, 2001).

Pinker, while on staff at Harvard, Massachusetts Institute of Technology, and University of Massachusetts at Amherst, conducted one of the most comprehensive studies done in the field of childhood language acquisition and development. He researched the premise that one of the first human abilities to be demonstrated as a small child is the acquisition of the syntax of his/her first language and that his/her acquisition of it is a cognitive process. To understand what a child says and how he/she learns to speak as an adult, there must be an understanding of the child's mind (Pinker, 1996).

Varying estimates have been given for the size of children's vocabularies for various grade levels (Lorge & Chall, 1963). Disagreements have arisen because researchers used (a) different definitions for what constituted a word, (b) different concepts of what it means to know a word, and (c) different bodies of words to represent English (Beck & McKeown, 1991). The average high school senior's vocabulary should be approximately 40,000 words. Students must learn 2,700-3,000 new words per year or approximately seven new words per day to achieve this 40,000 average by the time they are seniors in high school (Nagy, 1989).

Research was needed to facilitate the acquisition of new words. Through word acquisition research, it has been clearly established that there is a strong relationship between the knowledge of word meanings (vocabulary) and reading comprehension (Anderson & Freebody, 1981). The strength of the relationship has caused educators to recommend that critical word meanings be taught before reading selections (Tierney & Cunningham, 1984).

Readers learn two features about words as they develop their word knowledge: recognition and meaning. These two features cannot be distinguished from each other. Recognition vocabulary consists of that body of words they are able to pronounce or read orally. Beginning literacy learners focus most of their attention on recognizing words even though their primary focus is meaning. Meaning vocabulary is that body of words whose meanings are understood and used. Recognition and meaning vocabularies develop simultaneously as students learn to read (Chall, 1987). Recognition vocabulary eventually becomes sight vocabulary or words that are read instantly and used in constructing meaning. Recognition vocabulary is built rapidly through reading

experiences. Meaning vocabulary develops through effective word attack skills and experiences (Chall, 1987).

Extensive research has led to four major positions on how students acquire vocabulary. These positions are (a) students develop vocabulary knowledge through wide reading, (b) students learn vocabulary from context but they need instruction about context to use it effectively, (c) students are often hindered as much as they are helped by context, and (d) students can also profit from direct instruction in vocabulary (Beck & McKeown, 1991). As research has identified student acquisition of vocabulary, vocabulary instruction changed in order to increase the effectiveness of classroom instruction.

Vocabulary Instruction

The goal of vocabulary instruction should be to increase reading comprehension as expressed by Nagy (1989):

Vocabulary knowledge is fundamental to reading comprehension: One cannot understand text without knowing what most of the words mean. Increasing vocabulary knowledge is a basic part of the process of education, both as a means and an end. At the same time advances in knowledge will create an ever larger pool of concepts and words that a person must master to be literate and employable. (p. 1)

In a meta-analysis of 52 studies with statistical information needed to derive an effect size, the effects of vocabulary instruction on the learning of word meanings and on comprehension were examined. Consideration was given to three method-specific and two general setting factors that may influence a method's effectiveness. The

researchers considered whether or not a method gives the student examples of each to-be-learned word in context, the types of activities that are required to learn the word, the number, and type of exposures to information about each word. The setting factors considered were the amount of time dedicated to vocabulary instruction and whether the lessons were given to groups or individuals (Stahl & Fairbanks, 1986).

A study by Stahl and Fairbanks (1986) concluded that vocabulary instruction does appear to have a significant effect on the comprehension of passages containing the taught vocabulary words with average effect sizes of .97 of a standard unit. The most effective vocabulary teaching methods included both definitional and contextual information, actively involved the students in the learning process, and gave the students more than one exposure to the vocabulary words. Vocabulary instruction also appears to have a slight but significant effect on comprehension of passages not necessarily containing taught vocabulary words (Stahl & Fairbanks, 1986). This meta-analysis describes research studies that report a futility of vocabulary instruction because of the vast number of words that students need to learn and the few words that are taught in vocabulary instruction. However, after close meta-analysis, Stahl and Fairbanks found that these concerns were unjustified with the application of word knowledge to comprehension.

Just as application of word knowledge to comprehension is vital, vocabulary instruction should help students to build on multiple sources of information to learn words through repeated exposures to the words through word searches, crossword puzzles, scrambled words, etc. (Blachowicz & Fisher, 2000). As students at all grade levels seem to benefit from direct vocabulary instruction, Blachowicz and Fisher (2000)

identifies the following principles to guide instruction: (a) students should be active and involved in word identification and meaning, (b) students should personalize word learning through writing activities, and (c) students should be immersed in words through authentic literature and other high-interest reading materials.

A smaller meta-analysis of vocabulary instruction was conducted by Klesius and Searls (1990). They divided 15 studies into four categories: (a) computer-assisted instruction, (b) the keyword method, (c) semantically-linked visual imagery, and (d) writing activities. The computer was a tool for providing vocabulary instruction. *Word Attack!* is an example of a vocabulary software program used in four of the six studies in this meta-analysis. There are several methods of using the vocabulary software: (a) definition method using a target word, (b) definition method using a simulated arcade game format, (c) definition multiple-choice method, (d) definition sentence-completion method, and (e) definition supplement to basal vocabulary exercises. For low ability students, the effect size was very positive for computer-assisted instruction.

The second category, keyword method, involved first identifying a keyword that sounds like a part of the target and then using the keyword to form a mental image that links the target word and the key word. "For example, for the new word 'capsize,' the keyword is cap and the imagery is a picture of a big cap sitting on an overturned sailboat" (Klesius and Searls, 1990, p. 228). Keyword method was the only method that did not have a positive effect.

In the third category of studies, visual imagery, the skill of visual imagery is used to promote vocabulary learning by establishing a semantic link between the image and the target word (Klesius & Searls, 1990). In the studies reviewed, the use of semantically

linked imagery appears to be superior to the use of imagery in the keyword methods, particularly for the comprehension and retention of abstract words.

Emphasis on integration of reading and writing has encouraged research to determine the effectiveness of writing to enlarge the student vocabulary. Two out of the three studies found in Klesius and Searls' (1990) meta-analysis of writing activities targeted general overall development of vocabulary rather than instruction of a specific set of words. Examination of this research shows that writing activities appear to be an effective means of developing students' overall vocabulary knowledge in grades one through college.

Regardless of the various instructional strategies such as writing used in the classroom, Durkin's (1979) classic analysis of reading comprehension instruction found that less than 1% of observed instruction time was devoted to comprehension instruction and less than 5% was devoted to vocabulary instruction. In a four-year study, grades 1-4 were observed. Comparisons of grades 1-2 and grades 3-4 encouraged the following conclusions by Durkin:

Classroom observations during the third grade year revealed a few others changes—none of a kind that would foster greater progress in reading. To cite an example, the amount of time given to reading instruction appeared to decrease, whereas the amount of time spent on written assignments increased. This was especially true for the best readers, who were now being given lengthy assignments (p. 483).

Since the seminal study, Durkin has found little change. Teachers, on the whole, do not teach comprehension skills, but only mention or question. A teacher who mentions

information is one who says just enough about a topic to allow a written assignment to be given. A teacher should manage and facilitate comprehension instruction for students (Durkin, 2004).

As a means of facilitating instruction and instead of lengthy written activities, Blachowicz also supports the teacher's role in managing instruction for adolescent readers. She emphasized that time spent on vocabulary instruction reflects the teacher's beliefs in the importance of learning new words in order to read the selection. However, an analysis of the instruction established that instruction is guided by the contextual sentences provided by the teacher's manuals, undifferentiated and isolated from the comprehension goals from the reading selection (Blachowicz, 1987). She further reported that teachers were seeking more explicit ideas for modeling strategies and for developing lessons. Time spent in vocabulary instruction does not seem to be the problem, but the nature and effectiveness of the instruction were major concerns.

In another study of adolescent readers, Dole, Sloan, and Trathen (1995) investigated 43 tenth-grade students enrolled in an alternative English course, Action and Adventure. Students were not ability-grouped, so a heterogeneous population was assumed. A pretest and posttest in vocabulary and comprehension were given before and after students read three novels. Students chose vocabulary words from the novels, after the teacher provided specific criteria for choosing the words, ensured that students learned the contextual meanings of the words, and provided practice using the words within the story context.

The criteria for the selection of vocabulary words to be learned were crucial because students were given a structure of word learning within the context of the

literature selection. Students were taught to choose words that directly related to important elements of the novel: characterization, plot, setting. Students eventually were able to defend their selection of words and “experience first-hand the relationship between learning words and understanding a selection better” (Dole et al., 1995 p. 452).

With the presentation of contextual meanings of the vocabulary words, the teacher was certain that students had the correct meaning of the words used in the novels. Confusion over multiple meanings of the words was eliminated. Generation of sentences using the vocabulary words in context and discussions about the words as they related to the selections gave students multiple exposures to the words. Students also perceived the direct relationship of the words, plot, setting, and characters. These activities led to the indepth processing of words which proved to contribute to word learning and comprehension improvement. Students using the alternative method significantly outperformed students using traditional methods (Dale, Sloan, & Trathen, 1995).

To determine vocabulary instruction in three classrooms at the fifth and sixth grade levels in a large urban school, Watts (1995) observed reading instruction over the course of four months in each of the six classrooms for a total of 47 observations. The teachers were interviewed at the end of the observations. Data analysis consisted of (a) a search for dominate themes through activity coding, differentiation among activities; (b) strategy coding, differentiation among the methods used to implement the activities; and (c) interaction coding, differentiation among the types of verbal interactions observed. A taxonomy of methods for teaching vocabulary was developed in order to further describe the nature of observed instruction. One basal reading series was used for determining vocabulary, story selection, and instructional methods.

Based on the observations and interviews with the teachers, Watts (1995) drew four conclusions.

1. Discourse surrounding word meanings was largely teacher controlled.
2. Instructional methodology was limited. Although teachers used multiple methods to teach individual words, they used the same multiple methods (teacher-definition, student definition, and one or two sentences context) regardless of the word taught.
3. Characteristics of effective instruction identified in the research literature were not prevalent during vocabulary instruction.
4. Teachers perceived the importance of vocabulary instruction in terms of immediate classroom context as opposed to a more global context.

(p. 419)

The context of the vocabulary instruction was very specific to the basal text. This one-dimensional role of vocabulary in the classrooms in this study is noteworthy considering that this study took place in an urban school district with students of varied cultural, racial, and economic backgrounds and those inner city students tend to perform lower on standardized reading assessments. Teachers' perceptions of their students were that they were experientially deprived, and teachers' descriptions of their teaching practices paralleled their stated purpose for vocabulary instruction: meeting the requirements of the immediate classroom environment, "especially of the basal reading series" (Watts, 1995, p. 422).

Most basal reading series use a scope and sequence to guide instruction of subskills. Competent reading depends on the development and mastery of a complex set

of essential subskills. One of these critical subskills is a thorough comprehension of word meanings and their relationship to other ideas and concepts. Foil and Alber (2002) identified four principles that they feel can facilitate a deeper level of vocabulary skills:

1. Employing a variety of methods,
2. Actively involving students in vocabulary instruction that endeavors to facilitate deeper levels of understanding,
3. Providing instruction that enables students to see how target vocabulary words relate to other words, and
4. Providing frequent opportunities to practice reading and using vocabulary words in many contexts to gain an automatic comprehension of those words. (p. 131)

In order to aid in the instruction of automatic comprehension of words, a study was conducted with sixth grade students. In Baumann's (1984) study, the sixth grade students were divided into three groups: (a) a strategy group, who used Baumann's paradigm; (b) a basal group, who used basal workbook and skill sheets; and (c) a control group, who used unrelated vocabulary development exercises. The results of the study suggested very strongly that the implementation of a direct teaching paradigm for teaching the reading skill of main idea was superior statistically to basal reader instruction in main ideas and to meaning vocabulary development activities. There were no interactions between treatments and achievement levels.

Text Comprehension Strategies

Text comprehension is further defined as deliberate constructed meaning between the text and the reader. In accordance with this view, meaning rests in the

intentional, problem-solving, cognitive processes of the reader during interaction with the text. With reading as a purposeful and active process, readers need to have knowledge of the world, including language and print, to make meanings of text from their experiences (National Institute of Child Health and Human Development, 2000).

Although comprehension of text is currently viewed as essential to reading and learning, comprehension as a process began to receive scientific attention only in the past thirty years. Beginning in the 1970s, researchers such as Markman (1982) began to study the consciousness that readers had of their comprehension processes during reading.

Researchers at this time investigated whether readers knew that they did not understand what they were reading in the text. They were interested in the processes they employed if they did not understand what they were reading, the text, and what processes they employed if they recognized that they had an understanding failure. The disturbing finding by Markman (1982) was that both young and mature readers did not identify logical and semantic inconsistencies in the text. These discoveries led to the identification and instruction of strategies that increased readers' comprehension. Reading is taught to be purposeful and active (Pressley & Afflerback, 1995).

A reader reads a text to (a) understand what is read, (b) construct memory representations of what is understood, and (c) put this understanding to use. A reader can further read text (a) to learn, (b) to discover information, or (c) to gain personal insight, and (d) to increase the knowledge of one's self. These purposes required the use of prior knowledge as well as an understanding of print and language (Flavell, 1979).

Comprehension Monitoring (Metacognition)

Comprehension monitoring (metacognition) meets criteria of reliability and replication for the specific learning of the strategy in the studies examined by the National Reading Panel. There was 100% effectiveness in 14 out of 22 studies in grades 2-6 (National Institute of Child Health and Human Development, (2000). In the 1970s, an important theory was developed that reading must be an active process that involves the reader. Reading was seen as the intentional, problem-solving, thinking processes during which meaning is constructed through interactions between the text and the reader (Durkin, 1979). Meaning is influenced by the text and by the reader's prior knowledge that is activated by the text (Anderson & Pearson, 1984).

Readers construct meaning representations of the text as they read, and these representations are essential to memory and use of what was read and understood. Kintsch and van Kijk (1978) developed dynamic models of the comprehension processes in which these representations were stored in memory and contained the semantic interpretations of the text made by the reader during reading. The memory representations provided the foundation for ensuing use of what was read and understood.

The term *metacognition* has been used to describe knowledge about how humans perceive, remember, think, and act. Metacognition refers to two separate phenomena (not necessarily independent) of knowledge about cognition and regulation of cognition (Baker & Brown, 1984).

The first consideration of metacognition is a person's knowledge about his/her own cognitive resources and the compatibility between the person as a learner and the

learning situation as measured by some type of instrument. Questionnaire studies and confrontation experiments are the type of instruments used to identify pertinent features of thinking. Some of the instruments have subscales that identify metacognitive and cognitive abilities. The best known of these instruments are the Learning and Study Strategies Inventory and the Motivated Strategies for Learning Questionnaire (Nist & Gimpson, 2000).

The second consideration of metacognition is the self-regulatory mechanisms used by an active learner during the learning process. The self-regulatory tasks include “(a) checking the outcome of any attempt to solve the problem, (b) planning one’s next move, (c) monitoring the effectiveness of any attempted action, and (d) testing, revising, and evaluating one’s strategies for learning” (Baker & Brown, 1984, p. 354). This consideration is not very stable because of the complexity of content and lack of experiences. Self-regulatory mechanisms are generally used by older students and adults because of the thought processes needed.

Some of the metacognitive skills involved in reading are

(a) clarifying the purposes of reading, that is understanding both the explicit and implicit task demands; (b) identifying the important aspects of a message; (c) focusing attention on the major content rather than trivia; (d) monitoring ongoing activities to determine whether comprehension is occurring; (e) engaging in self-questioning to determine whether goals are being achieved; and (f) taking corrective action when failures in comprehension are detected. (Baker & Brown, p. 354)

Furthermore, metacognition is strongly influenced by knowledge structures (schemata) that readers bring to the reading process as demonstrated by a study by Gordon and Pearson (1983). Different strategies were used for improving fifth-grade students' comprehension skills with emphasis on their inference ability. Students identified as either above average or average students were placed into three groups with the following experimental design treatments. One group, the Content and Structure group, received systematic attention, story after story, identifying the importance of background knowledge important for story understanding and identifying story grammar. The second group, the Inference Awareness group, received treatment in which the process of drawing inferences from text and evaluating their plausibility was made explicit. The third group, a control group, participated in language activities unrelated to inferences (Gordon & Pearson, 1983).

The results from this study indicated that both experimental groups were beneficial to students who were good readers. The end result of the study resulted in students showing increasing gains as a direct function of how well they were already performing. The better readers got better, but the poorer readers scored about the same as readers in the control group (Gordon & Pearson, 1983).

Internal evaluations, learning how to learn, and developing a repertoire of thinking skills are skills that teachers desire for their students and are the essence of metacognition. Metacognitive knowledge includes (a) knowledge of general strategies that might be used for different tasks, (b) knowledge of the conditions under which these strategies might be used, (c) knowledge of the extent of the effectiveness of the strategies, and (d) knowledge of why ideas in text make sense. Direct explanations and

teacher modeling of comprehension strategies, followed by guided practice, and could lead to increased text comprehension (Pressley, 2000).

Jones (1984) conducted similar research to this study. She investigated the effectiveness of two prereading teaching strategies on vocabulary instructional strategies, vocabulary acquisition, and passage-specific comprehension of fifth-grade inner city black students. After two treatment groups and one control group were chosen, the researcher taught two lessons using the semantic mapping strategy with one experimental group and conventional basal approach with the other experimental group. The control group did not receive a prereading lesson but read the passages and responded to the multiple choice vocabulary and comprehension test items.

Findings from this study were that the semantic mapping group scored significantly higher ($p < .05$) on a multiple choice vocabulary test and specific comprehension test than did subjects receiving the basal approach and the control group. The results of the study indicated that students in the experimental groups learned more words than students in the control group. In fact, inner city students responded well to the focus of attention on the unfamiliar words that were graphically displayed on the semantic maps. Their attention was focused on the semantic maps because they talked about the words and wrote words on the map. The writing activity enabled the students to be actively involved and to center their attention on the words. "Training students to take an active approach in learning seems feasible" (Jones, 1984, p. 81). Comprehension research for the past thirty years has been guided by this cognitive conceptualization of reading. Applying visual teaching methods to cognitive skills that require the

externalization of processes that are usually carried out internally increases comprehension (Collins, Brown, & Newman, 1989).

Graphic and Semantic Organizers

Visual teaching methods like graphic and semantic organizers are the second category of instruction that has firm scientific basis for concluding that it will improve comprehension in normal readers (National Institute of Child Health and Human Development, 2000). A graphic organizer provides a visual structure for new vocabulary and uses charts, timelines, outlines, diagrams, flowcharts, hierarchic organizers, web mapping charts, causal charts, etc. to organize the vocabulary and concepts of an identified topic. A graphic organizer is a framework for comprehension because it allows students to understand the relationships among concepts in a text and the interactions between concepts (Yellin, Blake, & DeVries, 2000).

Betts (1946) an early educator, used what he called semantic webbing as a teacher-directed activity with a core question, vocabulary, and details written on shapes in web form. This form of graphic organizer aids in identifying main categories such as plot, setting, and characters commonly called story elements. His early contributions arranged story elements in a spider web form. The primary uses for graphic organizers are to introduce new vocabulary and concepts and to check or review comprehension. Graphic organizers can be used effectively with all age groups and content areas (Yellin et al., 2000).

A quantitative and qualitative review of 23 graphic organizers found that graphic organizers tend to produce the most learning when they follow the presentation of content and when vocabulary is the focus of the content. Teachers found that graphic

organizers help to clarify their instructional goals by providing a map of upcoming concepts to be taught (Moore & Readence, 1984).

Although the graphic organizer and the semantic map are similar to the format of a map, the actual development of the semantic map is different. Students contribute to the formation of the map. Their interaction and discussion with the teacher molds the configuration that the map takes. The key to this strategy is the empowerment of students to use their own knowledge and categorization skills to see new relationships among concepts and vocabulary terms (Johnson, 2001).

Associating groups of words together is the beginning of the concept of semantic mapping. Ausubel's (1963) theory, subsumption, is the primary process in learning in which "new material is related to relevant ideas in the existing cognitive structure on a substantive, non-verbatim basis" (p. 10).

To clarify this concept, Ausubel stated that

These organizers are introduced in advance of learning itself, and are also presented at a higher level of abstraction, generality, and inclusiveness; and since the substantive content of a given organizer or series of organizers is selected on the basis of its suitability for explaining, integrating, and interrelating the material they precede, this strategy simultaneously satisfies the substantive as well as the programming criteria for enhancing the organization strength of cognitive structure. (p. 14)

These empirical data provide strong support for the theory that the mental lexicon or *mental dictionary* is organized by linking groups of words together in a semantic field, a set of lexical entries with mutual basic meanings. Within a field, the

different items may represent a large range of semantic relations. Therefore, teaching students to associate co-ordinates within a field could enhance vocabulary.

Semantic mapping is a categorization procedure that organizes words related to a core concept into meaningful clusters (Pearson & Johnson, 1978). “Semantic maps display concepts in categories and indicate how words are related to one another or how they go together. Children learn new words, view old words in a new light, and see the relationship among words on the map” (Johnson, 2001, p. 5).

The steps of semantic mapping typically include: (a) selecting a key or central words from a reading selection about which the teacher can assume that the students have some familiarity, (b) organizing the words into categories (and perhaps labeling them), and (c) discussing alternate ways of categorizing the words, adding new words, and forming new categories. (Baumann & Kameenui, 1991, p. 605)

As students are allowed to categorize words, meaning networks are formed and their schema becomes enlarged and enriched. Links between words that were formed by habits and links formed by frequently associated items were thought by early cognitive psychologists to form stronger ties. These psychologists were interested in finding the strength between word and concept connections (Aitchison, 1987).

In further refining the strategy of using semantic mapping to teach vocabulary, Margosein, Pascarella and Pflaum (1982) of the University of Illinois at Chicago conducted an experimental study in which 44 junior high students were assigned to two vocabulary treatments, one of which was semantic mapping. The students in the

semantic mapping group scored significantly higher on multiple-choice tests of the randomly selected words than the group using another vocabulary instructional strategy.

Continuing with this research, Stahl and Vancil conducted a study where sixth grade students were given instruction for science vocabulary using (a) semantic maps only, (b) vocabulary discussion only, and (c) semantic maps and vocabulary discussion. The results of this study indicated that vocabulary instruction would be most efficient given in whole class groupings, at least in the intermediate grades, with discussions and creation of semantic maps using the vocabulary words (Stahl & Vancil, 1986).

Using empirically validated vocabulary building strategies, Foil and Alber (2002) expanded on incorporating drama, video technology, keyword method and semantic mapping into the learning curriculum. As semantic mapping skills developed, the following variations of semantic mapping activities were found helpful for vocabulary development:

1. Present a new vocabulary word to the student and lead a group discussion of its meaning. Have the students write the word in the middle of a blank page; then guide the students through answering three questions that branch out from the word: What is it? What is it like? What are some examples? Developing semantic maps helps students link prior knowledge to new knowledge and therefore deepens students' understanding of important vocabulary.
2. Write vocabulary words connected to a content area concept on index cards. Have students read a selection from their textbooks containing the new vocabulary words. After the students read a selection, they will

arrange the vocabulary word cards into categories.

3. Present a semantic mapping activity using a list-group-label approach by writing a category on the board and having students name all the words that belongs in the selected category. Write all of the students' responses on the board, suspending judgment on their quality. After a manageable list has been generated, have the students group their responses into subcategories and label them.
4. Lead a semantic mapping activity that encourages both vertical (breaking down a concept into categories) and horizontal (differentiating concepts from other related concepts) expansion of vocabulary words. For vertical expansion, write a word and then write student-generated responses of categories that fit under that word. For horizontal expansion, have student generate other related concepts and write the words next to the central concept. (p. 134)

Several important findings came out of word association experiments. First, researchers found that participants nearly always selected items from the semantic field of the original word. Second, participants almost always chose the partners of paired items (e.g., salt and pepper) and opposites (e.g., big and little). Third, adults demonstrated a significant tendency to respond to words in the same grammatical classification (i.e. verbs elicited verb responses, nouns elicited noun responses, etc.) (Marzano & Marzano, 1988).

Semantic mapping has been found to work equally well with whole classes and small groups. The discussion seems to be an important factor in the effectiveness of the

semantic mapping procedure. Students seem to be more involved if they are required to contribute to the discussion and creation of the semantic map (Stahl, 2000).

Bromley (1996) stated four important reasons to use webbing or semantic mapping: (a) webbing encourages response, (b) webbing extends comprehension, (c) webbing builds literacy, (d) webbing enhances learning. It is argued that word webbing helps students learn new words in a manner that mirrors how words are stored in the mental lexicon. An added benefit is that webbing is not expensive. "All the teacher needs is a piece of chalk and some time" (Johnson, 2001, p. 46).

Literature Mapping. A literature map is a structured way to address the organization of narrative text by applying literary terms or story grammar to a book or story. The structure of the map may be adapted to focus primarily upon the elements of action, setting, atmosphere, tone, or mood. (Yopp & Yopp, 2001). As the elements of a story emerge, the sense of story is recognized by the reader. An early educator, Gates (1947), promoted the importance of sense of story in the reader's comprehension of narrative. Educators (Davis, 1994; Mandler & Johnson, 1977) have continued to investigate and advocate that teachers use this text organization to aid in comprehension.

Story grammars are representations of the general structure of conventional narrative stories. The categories for story grammar vary but usually include the traditional plot, setting, and characters. Reading educators include other categories in order to increase comprehension of the story. These categories include the problem, goal actions, outcome, characters, episode, initiating event, reaction, resolution, internal

response, external response, attempt, and consequences (Armbruster & Osborn, 2003; Tierney & Readence, 2000).

The concept of story grammar is based on the way people retell stories they have read or heard. There are many commonalities across cultures in the structure of these retellings. Basically, the main character encounters a problem, attempts to solve it, and then some resolution occurs (Gurney, Gersten, Dimino, & Carnine, 1990).

Emery (1996) found that understanding story characters “is not only a valuable means for our students to develop desirable human qualities and a love of literature, it is also essential for comprehending the story as a whole” (p. 534). Emery’s article addresses the limitations that 9- to 11-year-olds face when attempting to understand character perspectives:

The limitations that preadolescents tend to make are: (a) focusing on what’s happening but not why and (b) focusing on only a small part of the story.

Concentrating on the main character’s perspective only limits the preadolescents understanding of the story through other characters in the story. Thinking that story characters are just like them is a true barrier to understanding given the multicultural, multiethnic, and varied socio-economic structures to stories that have been written recently. (Emery, 1996, p. 536)

Story Maps with Character Perspectives (SMCP) is a mapping technique that the teacher uses to guide the students’ consideration of character perspectives during the important events in a story. SMCP is designed to (a) help students consider why things happen, (b) help readers consider motives and reactions of characters that may not be

like the ones they would have, (c) help readers consider the story as a whole, and (d) help readers consider the perspective of all important characters (Emery, 1996).

Teacher modeling and teacher guided instruction, two aspects of explicit instruction that positively affects students' comprehension of narrative text, are the instructional techniques used to develop story grammar strategies developed by Hagood (1997). These strategies are

1. Teach students to use self-questioning techniques to increase their comprehension of narrative text.
2. Teach students to use story maps to organize a story's components.
3. Teach students to use story grammar to increase their writing skills.
4. Develop group narrative dramatizations through the use of visual, auditory, and kinesthetic learning channels.
5. Teach students to analyze and critically compare the story elements of two similar stories.
6. Teach students to manipulate and analyze the components of story grammar. (p. 11-13)

An adaptation of story mapping that uses story grammars to complete the design of a face. The face, an easily drawn, recognizable object, is called the Story Face. The eyes are two circles that represent the setting and main characters with eyelashes for adding specific descriptors and minor characters. The nose represents the problem and the mouth is a series of circles that represents the main events that lead to the solution (Staal, 2000).

According to Staal, the Story Face can be effectively used in the first through fifth grades with the following strengths: it is easy to construct, easy to remember, and can guide retelling. Due to the flexibility of Story Face, the strategy can be used with a variety of literary genres. As students go through the discovery process, the Story Face (see Figure 1) is an excellent strategy to be used with varied grouping patterns to enhance collaborative learning (Staal, 2000).

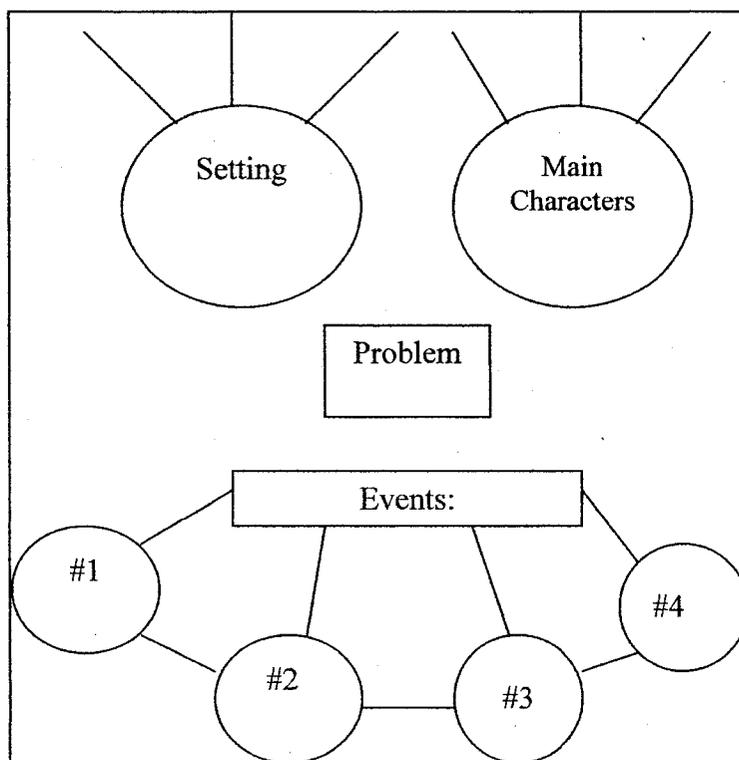


Figure 1. Story Face (Staal, 2000)

The literature map can be structured to reflect the emphases that are most applicable to the book or story as the story is being read. The categories are identified and the reader writes the category-related information on each section as the selection is being read. Haskell (1987) stated the benefits of using a literature map are

1. Students become more actively involved in their reading,
2. Discussion is enhanced,
3. Students have a record to which they may refer when writing about the reading selection,
4. Students have the opportunity to hear what their peers think is important or interesting,
5. Students begin to notice language that is appealing or effective,
6. A map may be constructed at several points in a selection and students can trace the development of the plot or of characters. (p. 56)

Literature maps are flexible instructional strategies that may be used at all grade levels. The concept of identifying categories that include story grammar is often described in general terms as story maps or webs or in specific terms as character maps, character webs, or character perspective charts. These visual displays of categories of information and their relationships start with a core concept or name of a story at its center. Webs illustrate knowledge in several patterns: (a) conceptual; (b) hierarchical, with a main concept and ranks of subconcepts under it; (c) sequential, events in chronological order with a specified beginning and end; or (d) cyclical, using a continuous series of events in a circle (Bromley, 1996).

Story grammar/structured overview story mapping and directed reading activity (DRA) are two teacher-directed prereading instructional procedures used by Davis (1994). Third-grade and fifth-grade students were randomly assigned to treatment groups and data were analyzed within grade levels. The two instructional procedures used with the students utilized two stories from the third and fifth grade basal readers.

The stories were selected because they included essential elements of story grammar, and the students had no previous experience with them. Two dependent variables of literal and inferential comprehension were measured.

At the third grade level, the story mapping procedures resulted in 14% better inferential and 7% better literal comprehension than the DRA. Statistically significant differences between groups were not found at the fifth grade level. The researcher suggested that the differences in the results of the experiment could have been due to only using two stories, the stories, or the instruction with story mapping (Davis, 1994).

Instruction Using Transparencies. Literature mapping is one of the instructional strategies that can be taught using overhead transparencies for visual development and learning of various concepts of vocabulary and comprehension of a story (Bromley, 1996). Using visuals in instruction has been clearly demonstrated to have a positive effect on learning in two much-quoted studies, the 3M/Wharton School study (1981) and the University of Minnesota/3M study (Vogel, Dickson, & Lehman, 1986). Nine treatment groups of 35 students were given various presentations and then tested on characteristics of the presentations. Using visuals improved the following characteristics: (a) attention by 7.5%, (b) retention by 10.1%, (c) comprehension by 8.5%, perceptions of the presenter by 11.0% and (d) action by 43.0%. These studies identified two areas, applicable to education, where the use of visuals can improve instruction. They found that the use of visuals improved communication effectiveness, and improved the teacher's confidence.

To improve communication effectiveness:

- a. visuals add another sensory channel to the oral communication process,

- b. visuals utilize right brain visual and spatial processing to complement the left brain processing used in listening, and
- c. the synergism between left and right brain processes create better “whole picture” communication. (Vogel, Dickson, & Lehman, p. 1)

To improve the teacher’s confidence, visualization encourages early organization and planning. The old adage that a picture is worth a thousand words could describe an effective teacher’s use of overhead transparencies as visuals (Wharton Applied Research Center, n.d.).

Laskowski (1997) provided some suggestions for using overhead transparencies that would be applicable to the classroom. He offered the following advice for the best use of transparencies:

- a. Stand off to one side of the overhead projector while you face the class.
- b. Do not face the “projected” image on the screen. Face your class and not the screen.
- c. Cover the transparency when you are finished using it.
- d. Always have a spare bulb.
- e. Place the overhead to your right if you are right handed and to your left if you are left handed.
- f. Place your overhead projector on a table low enough so it does not block you or the screen.
- g. Tape the power cord to the floor to protect you or a student from tripping. (p. 324)

Effective use of transparencies in the classroom is a means to facilitate students' understanding of many concepts. Visuals can aid students' active prior knowledge and organize ideas for increased comprehension (Naughton, 1994).

Instruction Using Computer Software. An alternative to a chalkboard or transparency would be computer-based visual thinking environments that allow users to create literature maps. These easy-to-use tools are multiplatformed and Web-enabled. Nodes and links are the primary components of semantic mapping software. Nodes represent ideas, and links are used to represent relationships that connect ideas. "As the nodes and links become interrelated, a structural knowledge representation emerges paving the way for a meaningful understanding of the knowledge domain depicted" (Dabbagh, 2001, p. 17).

Inspiration and SemNet are computer-based software that remove the drudgery and mess of revising paper-based concept maps according to Anderson-Inman and Zeitz (1993). Revisions of these computer-based concept maps can be made over time very quickly and easily. "Revisions can also be initiated or guided by teachers, which makes concept mapping effective as a means of assessing student learning" (McClure, Sonak, & Suen, 1995, p. 476). It is believed that Inspiration supports learning strategies that fall under the following four categories: (a) organizational strategies for basic learning tasks, (b) organizational strategies for complex learning tasks, (c) elaboration strategies for complex learning tasks, and (d) comprehension monitoring skills (Dabbagh, 2001). Students can create concepts maps process flows, knowledge maps, and flowcharts while assigning different colors and pictures to the different concepts and even transforming the map into an outline.

According to Inspiration's website, Inspiration has won numerous awards including the Seal of Approval of The National Parenting Center, Media and Methods Education in Technology Award for two years in a row, Dr. Toy's Best Children Product Winner for two years in a row and Book Report and Library Talk 2001 GoldMaster Award (Inspiration Software, Inc. Awards, n.d.). Furthermore, On October 1, 2001, Inspiration was awarded the EdNET pioneer Award recognizing an organization that made significant contributions to the growth of the educational technology market. In 2001, Inspiration was a winner of the *eSchool News Magazine* annual Readers' Choice Award in its multidisciplinary curriculum software category. In a survey of K-12 instructors, Inspiration Software was "a runaway winner." In an independent study, Scholastic's market research firm, Quality Education Data (QED), found that Inspiration Software products are currently in use by over sixty percent of the U. S. school districts (Inspiration Software, Inc., n.d.).

SemNet software represents knowledge domains similar to Inspiration. A semantic network linked by named relations is the organizational pattern utilized by SemNet. The SemNet website did not list any awards for the software.

The following statement was made by Dabbagh (2001):

The main difference between SemNet and Inspiration is that SemNet creates a hypertext environment that allows the user to navigate between concepts through the named relations by emphasizing the concept-relation-concept in the constructions of the knowledge map. This is based on the principle that concepts are ideas that can usually be described by a word or phrase and that concepts can be understood through relations to other concepts. (p. 16)

Effective utilization of computer software in the classroom is provided by direct instruction from the classroom teacher during the instructional time.

Scaffolding. The process of scaffolding has been described as a process that allows one to complete a task, solve a problem, or carry out a goal that would be beyond unaided efforts. Clark and Graves (2004) quoted Pressley:

Pressley (2002b) has provided a particularly rich description, explaining both the metaphor entailed in the term and its educational meaning. The scaffolding of a building under construction provides support when the new building cannot stand on its own. As the new structure is completed and becomes freestanding, the scaffolding is removed. So it is with scaffolded adult-child academic interactions. The adult carefully monitors when enough instructional input has been provided to permit the child to make progress toward an academic goal, and thus the adult provides support only when the child needs it. If the child catches on quickly, the adult's responsive instruction will be less detailed than if the child experiences difficulties with the task. (pp. 97-98)

Vygotsky's social constructivist view of learning is the basis for scaffolding. His view of learning is that every mental function in a child's development is in reaction to an adult. Commonly called the "assisted comfort zone," Vygotsky called this area of behavior between what a child can do independently and what he can do with adult support, the zone of proximal development (Tharp & Gallimore, 1988). With repeated practice and experiences, the child can internalize learning.

Clark and Graves (2004) described three general types of scaffolding and the teacher's role in the scaffolding process. Moment-to-moment scaffolding is where the

teacher prompts, probes, and elaborates on student responses during instruction. A second type of scaffolding is the instructional frameworks scaffolding that foster content learning where “the teacher’s role is to structure and orchestrate the reading experience so that students can optimally profit from it” by using various, applicable strategies. (p. 574) A third type of scaffolding is the instructional procedures scaffolding for teaching reading comprehension strategies where the teacher explicitly teaches concept approaches that “foster reading independence, engages students in supported practice with multiple texts, and gradually transfers responsibility for strategy use as students become increasingly able.”(p. 576)

Gradual Release of Responsibility. Understanding scaffolding is aided by the model developed by Pearson and Gallagher (1983) called the gradual release of responsibility. The model (see Figure 2) illustrates a progression of complete teacher control through modeling and other instructional practices to student control of learning. The process is slow and is guided by student understanding of concepts that are checked frequently informally and formally by the teacher. The teacher scaffolds the students during the process, giving them support with learned concepts and challenging them with new concepts.

Summary

In summary, the review of related literature indicated that reading comprehension is acquired more effectively through a constructivist classroom where the learner is given an opportunity to build on prior knowledge and understanding to construct new knowledge and application of real life (Pereira, 1996). Students would be allowed to explore possibilities, try alternative solutions, monitor and revise their

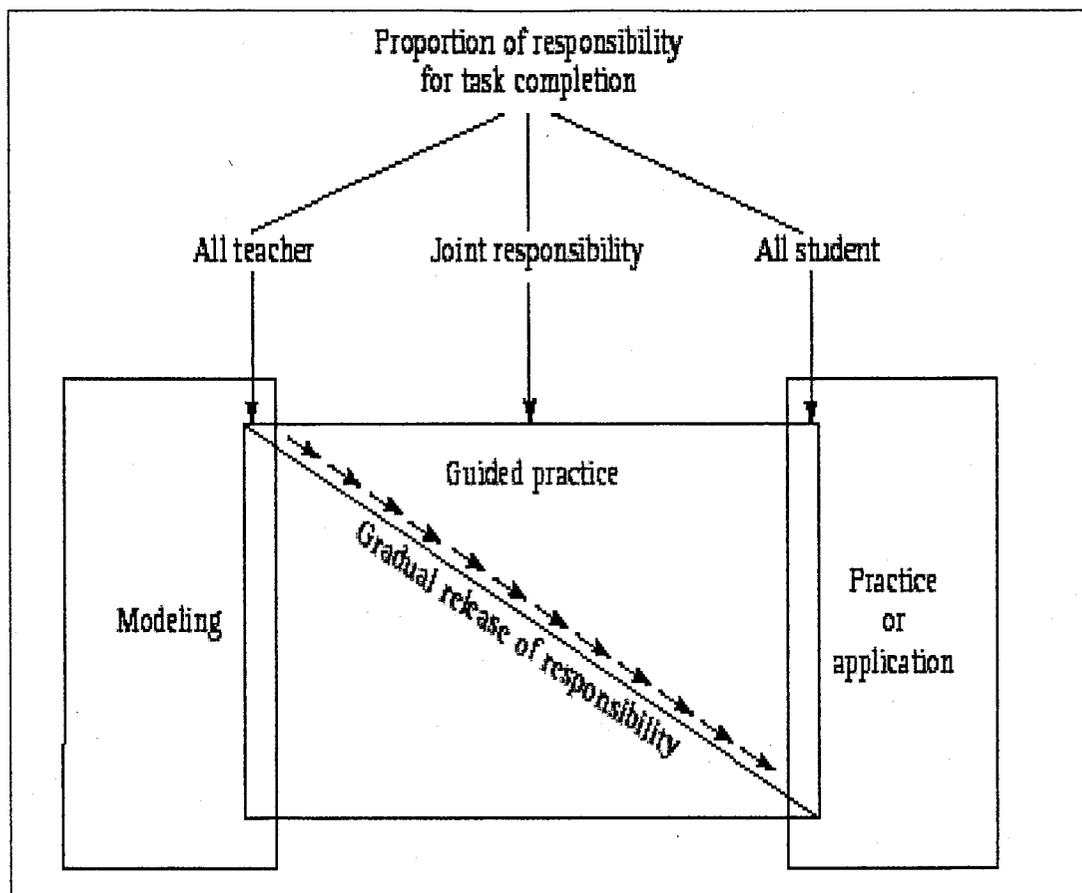


Figure 2. The Gradual Release of Responsibility Model of Instruction (Pearson & Gallagher, 1983)

thinking, and make application to other content (Ausubel, 1963, Tierney & Readence, 2000). Comprehension is dependent on vocabulary learning (National Institute of Child Health and Human Development, 2000). As the learner's vocabulary increases, understanding or comprehension is enhanced (Pinker, 1996) and one effective instructional method to teach vocabulary is literature mapping. Literature mapping, a structured way to address the language of literature by applying story grammar (Yopp & Yopp, 2001), can be taught successfully utilizing transparencies (Vogel, Dickson, & Lehman, 1986) or Inspiration (Dabbagh, 2001).

This literature review supports the rationale for this study that sixth-- grade students involved in reading basal vocabulary instruction taught directly using literature mapping with a story frame will comprehend the basal story more significantly than students who are taught basal vocabulary using traditional methods of instruction.

CHAPTER THREE

Methodology and Procedures

The methods and procedures that were used to investigate the effects of literature mapping of basal vocabulary on word acquisition of basal vocabulary words, comprehension of stories in the basal reader, general vocabulary acquisition, and general reading comprehension of sixth grade students are identified in this chapter. The nine sections of this chapter outline the research design, expert review of research methodology, sample selection, materials, instrumentation, procedural details, protocol, null hypotheses, and data analysis.

Research Design

A quasi-experimental research design utilizing a nonequivalent control-group design was conducted with the complete population of sixth grade students in three schools (see Appendix A). One control group and two experimental groups who took two pretest measures, participated in a treatment, and took two posttest measures (see Table 1). Students were organized in intact groups at three different schools. The quasi-experimental research design was used because there was not full control of confounding variables primarily by not randomly assigning participants to comparison groups. The comparison groups for this study were one control and two experimental groups, which is often a limitation in educational research because of the nested hierarchy evident in schools (Johnson & Christensen, 2000). However, educational

Table 1

Nonequivalent Control-Group Design

Group	Pretest Measure	Treatment	Posttest Measure
Control Group (Traditional)	O ₁₁	X ₁	O ₁₂
Intervention Group 1 (Transparency)	O ₂₁	X ₂	O ₂₂
Intervention Group 2 (Inspirations)	O ₃₁	X ₃	O ₃₂

researchers have overcome this limitation by using a covariate that measures the attributes for all groups. An analysis of covariance is the appropriate statistical method that can be used to equate groups that are found to differ on a pretest variable or other variables. If the pretest variable is related to the dependent variable, differences can be observed in the dependent variable that is due to the differences in the pretest variable. Analysis of covariance adjusts the scores on the dependent variable for the differences observed on the pretest variable and in this way statistically equates the participants in the various comparison groups. This statistical procedure can be used at the outset of an experiment for control (Crowl, 1996).

The control group used traditional vocabulary instruction of the basal vocabulary as defined by the classroom teacher's teaching practices. Observations by the researcher and conferences with the teacher documented these specific planned teaching practices for reading. There were two experimental groups: (a) one group used a transparency to

literature map basal vocabulary within a story element frame; and (b) one group used Inspiration, a computer software, to literature map basal vocabulary within a story element frame. Six individual analyses of covariance (ANCOVA) were used to compare group mean test scores with the high and low groups among the three treatments: (a) traditional instruction as defined by the classroom teacher; (b) literature mapping that used a transparency within a story element frame; and (c) literature mapping that used Inspiration, a computer software program. The dependent variables for this study were (a) vocabulary knowledge, measured by *Harcourt Reading Skills Assessment* and *Gates-MacGinitie Reading Test, Level 6, Forms S and T*; and (b) comprehension, measured by *Harcourt Reading Skills Assessment* and *Gates-MacGinitie Reading Test, Level 6, Forms S and T*.

One independent variable was the teaching method: (a) traditional instruction, (b) transparency literature mapping within a story element frame, or (c) computer-generated literature mapping within a story element frame. A second independent variable was the level of student reading ability, either high or low. The critical comparison was between the experimental and control groups on pretests and posttests using the *Harcourt Reading Skills Assessment* and the *Gates-MacGinitie Reading Tests* as depicted in Table 1. The instructional treatment was the same for all sixth grade students within each of the schools (see Tables 2 and 3).

Tables 2 and 3 graphically represent the variables included in this study. The groups under the column labeled *Group* represent the three different methods of reading instruction provided to sixth grades classes at three different schools. Columns two and three represent groups generated according to the reading level of students in order to

Table 2

Schematic Overview of Harcourt and Gates-MacGinitie Reading Pretests, Reading Levels, and Methods of Instruction Used in this Study

Group	Low Reading Level (at or below the 40 th percentile on ITBS)	High Reading Level (at or above the 60 th percentile on ITBS)
Control Group (Traditional Reading Instruction)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)
Intervention 1 Group (Transparency Literature Web)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)
Intervention 2 Group (Inspiration Literature Web)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)	Harcourt Pretest (Vocabulary) Harcourt Pretest (Comprehension) Harcourt Pretest (Total) GMRT Pretest (Vocabulary) GMRT Pretest (Comprehension) GMRT Pretest (Total)

Table 3

Schematic Overview of Harcourt and Gates-MacGinitie Reading Posttests, Reading Levels, and Methods of Instruction Used in this Study

Group	Low Reading Level (at or below the 40 th percentile on ITBS)	High Reading Level (at or above the 60 th percentile on ITBS)
Control Group (Traditional Reading Instruction)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)
Intervention 1 Group (Transparency Literature Web)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)
Intervention 2 Group (Inspiration Literature Web)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)	Harcourt Posttest (Vocabulary) Harcourt Posttest (Comprehension) Harcourt Posttest (Total) GMRT Posttest (Vocabulary) GMRT Posttest (Comprehension) GMRT Posttest (Total)

Note: Posttest Means adjusted using Pretest Means as covariate.

examine the effect of reading instruction method on subjects who initially differ in their reading ability. Listed in the cells that correspond to a reading level group and an experimental group are the measures to be observed and analyzed in order to differentiate the effect of reading instruction and reading level on the observed measures. Table 2 is an overview of the pretest and Table 3 is an overview of the posttest phase of the study with a note that the pretest means are used as a covariate to adjust the posttest means for differences.

Expert Review of Research Methodology

The process of developing the research design in this dissertation was approved by a panel of experts in the field of educational research. After close supervision from this panel, the proposal was written. A panel of reading experts also reviewed and determined that this study would add to the knowledge base of reading research. The panel consisted of two highly qualified reading experts from Louisiana and New York.

Sample Selection

The initial sample for this study consisted of 145 sixth grade students in ten intact classes. These classes were contained in three public schools located in a public school district in northeast Louisiana and represented the entire sixth grade population of each school. This sample was chosen because of the district's historical receptiveness to research and accessibility to the researcher. Three schools were chosen because of diffusion of treatment, a potentially confounding variable that could occur when teachers in the experimental groups communicate information to teachers in the control group.

The total number of students in the study was 104. There were 17 missing ITBS scores and 24 middle scores not considered for this study. The instructional methods were randomly assigned to two experimental groups and one control group. All sixth grade classes in the three schools participated in the study. Sixth grade classes located in School 1 were randomly assigned to Group 1 and received traditional vocabulary instruction as defined by the teacher. Group 1 was the control group. There were 16 students in the high group and 21 students in the low group for a total of 37 students in Group 1. All sixth grade classes in School 2 were randomly assigned to Group 2 and received the vocabulary instructional method of literature mapping using transparencies. There were 17 students in the high group and 18 students in the low group for a total of 35 students in Group 2. Finally, all sixth grade classes in School 3 were randomly assigned to Group 3 and received the vocabulary instructional method of literature mapping using Inspiration, a software program that utilizes semantic mapping strategies. There were 19 students in the high group and 13 students in the low group for a total of 32 students.

From data received on the 2002-2003 School Accountability Report Card, approximately 70% of the students in each of the three schools scored Basic and above on the Grade 4 LEAP Test. The Basic level is where students demonstrate the fundamental knowledge and skills needed for the next level of schooling. Students in all three schools scored near the 50th percentile on the Iowa Test of Basic Skills, and the attendance rate in all three schools was in the upper 90% range. All three schools had at least 50% minority students and students receiving free/reduced lunch. All three schools had at least a Minimal Academic Growth label and above. This growth label means that

the schools are improving some but not meeting their numeric growth targets (Louisiana Department of Education, 2003).

Materials

The instructional materials used for this study were from the *Collections Series*, Harcourt, the basal reading series adopted by the school district. *Times of Discovery*, the sixth grade text, included a variety of classic and contemporary literary works including realistic fiction, folktales, informational nonfiction, biographies, autobiographies, plays, and poems that were appropriate for instructional-level reading (Farr, Strickland, & Beck, 2001). These instructional materials were used because of the system-wide adoption of the series, the availability of the materials in the classroom, and the appropriateness of the selections for sixth grade readers.

Instrumentation

Subjects were given a pretest and posttest from the Harcourt basal reading series to assess specific vocabulary acquisition and comprehension of stories in the basal reader. The *Harcourt Reading Skills Assessment* is a set of criterion-referenced tests that evaluates decoding, vocabulary, and comprehension taught specifically from stories in *Times of Discovery*. These tests were administered by the teachers and graded using a standardized scoring guide.

In order to determine the change in student general vocabulary acquisition and comprehension skills, pretest and posttest measures were given. The fourth edition of

the *Gates-MacGinitie Reading Test, Level 6, Form S* pretest and *Gates-MacGinitie Reading Test, Level 6, Form T* posttest measured student general vocabulary acquisition and comprehension skills.

The third edition of the *Gates-MacGinitie Reading Test* is the latest edition reviewed in *The Eleventh Mental Measurements Yearbook* (Swerdlik, 1994). An assumption is made by the researcher that the reliability and validity of the third and fourth editions are similar because of the history (1926-present) of the extensive use of the *Gates-MacGinitie Reading Test* in the field of reading. The authors of the *Gates-MacGinitie Reading Test* provided internal consistency data along with means and standard deviations for total scores and subscales for each level of the *Gates-MacGinitie Reading Test* (MacGinitie, MacGinitie, Maria, & Dreyer, 2002). The Kuder-Richardson 20 (KR-20) reliability estimate, a statistical formula used to compute an estimate of the reliability of a homogeneous test, falls in the upper .80s and .90s for all tests. These results are satisfactory according to the review in *The Eleventh Mental Measurements Yearbook* (Swerdlik, 1994).

Technical information from the Riverside Publishing Company, the publishers of the *Gates-MacGinitie Reading Test* shows that the fourth edition has excellent reliability and the KR-20 reliability estimate ranges from .90 to .96. A table providing the extended scale score summary statistics for this study is provided in Appendix B.

The *IOWA Test of Basic Skills (ITBS)*, developed by University of Iowa, is the adopted state-wide assessment for use in grades 3, 5, 6, and 7 in Louisiana. The ITBS was utilized to determine a total reading level of comparative scores of general word knowledge and reading comprehension. The *ITBS* was designed and developed to

measure skills and standards important to growth across the curriculum. Total scores, the combination of general reading vocabulary and reading comprehension, from the *ITBS* administered in spring, 2003, were used to determine reading levels for this study. The differentiation of reading achievement was at or above the 60th percentile, the high group, and at or below the 40th percentile, the low group. The scores from the middle group between the 40th and 60th percentile were not used because they were neither clearly high nor low. The differences between the scores tend to disappear when they cluster around the mean. When the division was made between the high reading level and the low reading level, a clearer comparison could be made between the groups.

National performance standards established across grades and content areas may be reported from *ITBS* data to describe achievement based on expectations determined by a national panel of curriculum experts. The *ITBS* incorporates standards from the National Council of Teachers of Mathematics, International Reading Association, National Council of Teachers of English, National Council for the Social Studies, National Science Teachers Association, and American Association for the Advancement of Science. All items were tested for ethnic, cultural, and gender bias and fairness prior to the development of the final form of the tests (Brookhart & Cross, 1998).

Total scores were reported for the vocabulary plus comprehension tests in Complete and Survey Batteries at Levels 5-14. The Levels of the *ITBS* are intended for use in grades K-8. The Complete Battery includes sections to evaluate (a) listening, (b) word analysis, (c) vocabulary, (d) reading, (e) language, (f) mathematics, (g) social studies, (g) science, and (h) sources of information. The Survey Battery evaluates reading, language, and mathematics. Developmental standard scores, grade equivalents,

national and local percentile ranks, stanines, and a number of special norms can be determined and are available for comparative analysis.

According to the *Mental Measurements Yearbook*, the *ITBS* scores provide valid measures of basic academic skills as well as high reliability coefficients of .80 to .90. The *ITBS* is well constructed and reliable enough to use for both individual and group judgments (Brookhart & Cross, 1998).

Procedural Details

Following approval from the Human Use Committee at Louisiana Tech University (see Appendix C), a letter was mailed to the superintendent of a northeast Louisiana school district requesting permission to conduct the study in that school system. The purpose of the study was described in the letter. The permission form is in Appendix D.

With the superintendent's approval and the support of the district accountability supervisor, permission was obtained from principals of the schools participating in the study (see Appendix E), and permission was obtained from the sixth grade teachers within the participating schools (see Appendix F). Letters were sent home to the parents of participating students, and the parents were requesting that they sign a Human Subjects Consent Form (see Appendix G). Forms were received from all students participating in the study.

Through examination of cumulative records, the researcher collected *ITBS* scores and differentiated scores into groups. A high group, at or above the 60th percentile, and a low group, at or below the 40th percentile, were determined. The researcher planned and conducted training for the teachers in both the control and experimental groups. Training

for the teacher of the control group was held at School 1 utilizing vocabulary strategies; training for the teachers in the experimental groups took place at School 2 and School 3 (see Appendix H). Teachers in two experimental groups were trained separately, and the training was designed to fit the intervention that the teachers implemented. An explanation of the procedures used in this study and a daily schedule are listed in Appendix I.

With input from the teachers, a time frame was determined that the study would began January 20, 2004 and end on March 1, 2004, the fourth six-week period correlating with the *Harcourt Reading Series*. Students in the experimental and control groups were pretested and posttested by their teachers. The instructional methods used in the one control group and two experimental groups were documented by the researcher through observations, visits, and teacher intervention notebook checks, and then used in all three classrooms, one control group and two experimental groups.

T-CaPS MaP is the story element frame that was used in this study. T-CaPS MaP, designed by the researcher, is a combination of well-known story grammars that was used to expand and enhance basal vocabulary instruction in this study. *T* represents the title of the story; *C* represents characters in the story; *a* represents and; *P* represents point of view of the author; *S* represents setting of the story; *M* represents the mood of the story; *a* represents and; and *P* represents plot/theme. These story grammars are well-known and are discussed by Yopp and Yopp (2001) and Tierney and Readence (2000). The template of the T-CaPS MaP and an example of a completed T-CaPS MaP is in Appendix J.

Protocol

Teacher training was conducted by the researcher who has taught teacher preparation courses in reading at a university in Louisiana for 15 years. The researcher is also a first-year teacher assessor trainer for the Louisiana Department of Education and has expertise in state guidelines of the Louisiana Components of Effective Teaching (LCET), the criteria by which the State of Louisiana evaluates all teachers.

During the teacher training, the two teachers in the experimental groups and two teachers in the control groups developed proficiency in the administration of the *Harcourt Reading Skills Assessment* and the *Gates-MacGinitie Reading Test*. Test booklets, answer sheets, and instructional packets were given to the teachers at the end of the training.

The teacher training consisted of two afternoon workshops at each of the intervention schools. Paraprofessionals were responsible for the teachers' classes during the training sessions. The teachers involved in the experimental groups learned the instructional strategy of literature mapping, and teachers developed templates (see Appendix J) for use in Theme 4, a six-week unit in *Times of Discovery*. The templates were a guide with revisions according to student input.

Using templates designed specifically for each story, the story elements (T-CaPS MaP) were the defining structure of the literature maps (see Appendix J). After training was completed, the teachers randomly chose whether to utilize the transparency template or the computer-designed template from Inspiration. Teachers in both experimental groups used the same template.

Teachers in the experimental groups kept an intervention notebook containing transparency templates and computer-designed templates that were designed for each story in the six-week unit. The notebooks also contained the results of the (a) *Harcourt Reading Skills Assessments* (pretest and posttest); (b) *Gates-MacGinitie Reading Test, Level 6, Form S* (pretest); (c) *Gates-MacGinitie Reading Test, Level 6, FORM T* (posttest); (d) weekly tests; and (e) each student's categorization as a high or low reading level as determined by scores from the fifth grade *ITBS* Tests.

Two training sessions for control group teacher were conducted at School 1, the control school. Utilizing the identified traditional teaching methods for vocabulary, lessons were designed for Theme 4, a six-week unit in *Times of Discovery*. The purpose of this training was to document the vocabulary instructional strategies and counteract a possible *John Henry Effect* by giving the teacher of the control group a feeling of inclusion and importance even though no treatment was implemented.

The control group teacher also maintained a notebook containing strategies used to teach vocabulary for each story in the six-week unit. Also included in the notebook were (a) results of *Harcourt Reading Skills Assessments* (pretest and posttest); (b) *Gates-MacGinitie Reading Test, Level 6, Form S* (pretest); (c) *Gates-MacGinitie Reading Test, Level 6, Form T* (posttest); (d) weekly tests; and (e) each student's categorization as a high or low reading level as determined by scores from the fifth grade *ITBS* Tests.

In order to appropriately examine student scores, SPSS was used in running and preparing the test data (Norusis, 1990).

Null Hypotheses

The following research question and subsequent null hypotheses were answered by this study:

Research Question: Does the method of instruction, through the use of literature mapping of basal vocabulary within a story element frame, differentiate reading achievement between students of high and low reading levels?

Null Hypothesis Set One (H_{01}): There will be no significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Vocabulary) scores.

Null Hypothesis Set Two (H_{02}): There will be no significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Comprehension) scores.

Null Hypothesis Set Three (H_{03}): There will be no significant main effects or interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Total) scores.

Null Hypothesis Set Four (H_{04}): There will be no significant main effects or interaction effect between sixth grade student Reading Level (high or low) and

Instructional method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Test, Level 6, Form T* (Vocabulary) scores.

Null Hypothesis Set Five (H₀₅): There will be no significant main effects for interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Test, Level 6, Form T* (Comprehension) scores.

Null Hypothesis Set Six (H₀₆): There will be no significant main effects of interaction effect between sixth grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Test, Level 6, Form T* (Total) scores.

Data Analyses

The independent variable of literature mapping included two methods: (a) use of transparencies within a story element frame, and (b) use of Inspiration computer software within a story element frame. The independent variable of traditional vocabulary instruction, defined by the teacher's instructional practices, was considered, and the dependent variables of vocabulary knowledge and comprehension skills were determined by a pretest and posttest on both measures. Scores from the spring 2003 ITBS were used to determine a high reading level, at or above the 60th percentile, and a low reading level, at or below the 40th percentile.

The research design for this quasi-experiment was a nonequivalent control-group that consisted of two experimental groups and a control group with participants not randomly assigned to the comparison groups. Participants in the experimental and control groups may not have been similar on all variables that may have affected the dependent variables of vocabulary knowledge and reading comprehension. The variables on which the groups were not similar were potentially confounding variables that might operate as rival hypotheses to explain the outcome of the experiment (Johnson & Christensen, 2000). An ANCOVA is the appropriate statistical analysis procedure when a researcher must use intact groups for which there are possible variations that are not controlled for in the design of the experiment and that could affect the dependent variable (Graziano & Raulin, 2000).

Six individual ANCOVAs were used to compare the three groups using pretest scores to statistically remove preexisting academic elements. The pretest scores on the *Harcourt Reading Skills Assessment* (Vocabulary, Comprehension, and Total) and the *Gates-MacGinitie Reading Test* (Vocabulary, Comprehension, and Total) were used as covariate to adjust posttest means for any existing differences in groups prior to the treatment. Spring 2003 *ITBS* scores were used to categorize the levels of high and low reading achievers. These reading levels of high and low were used to determine whether or not there was an interaction effect between the method of instruction and reading ability. If such an interaction were found, the interaction would indicate that the method of instruction together with reading ability did indeed affect the final test scores (Graziano & Raulin, 2000).

In an ANCOVA, the dependent variable is adjusted statistically to remove the effects of the portion of uncontrolled variation represented by the covariate. The covariate is used to (a) reduce error variance, (b) take into account any preexisting mean group difference on the covariate, (c) take into account the relationship between the covariate and the dependent variable, and (d) yield a more precise and less biased estimate of the group effects (Hinkle, Wiersma, & Jurs, 1998).

The level of statistical significance was set at $p < .05$ by the researcher as the level to be used to decide when to reject null hypotheses in this study. The significance level of $p < .05$ is a level that is commonly used by educational researchers and indicates that if the observed sample result occurs only 5% of the time or less when the null hypothesis is true, then the researcher will consider the observed sample result to be an unlikely event, and will make the decision to reject the null hypothesis.

Data reflecting statistical analysis and findings are presented in Chapter Four. Appropriate charts, graphs, and tables with accompanying narrative are also presented in Chapter Four (Graziano & Raulin, 2000).

CHAPTER FOUR

Data Presentation

Presented in this chapter are the results of the statistical analyses of the data collected for this study. The purpose of this study was to ascertain whether two instructional interventions in reading using transparency mapping and Inspiration mapping affected reading ability of leveled reading groups when compared with a control group that used traditional vocabulary instruction defined by the teacher. Vocabulary, comprehension, and a total reading score, the combination of vocabulary and comprehension, were measured by the *Harcourt Reading Skills Assessment* and the *Gates-MacGinitie Reading Test*. Both the transparency mapping and Inspiration mapping used the same template designed by the teachers during the teacher training.

Descriptive Analysis

The initial sample for this study consisted of 145 sixth-grade students in ten intact classes. These classes were contained in three public schools located in northeast Louisiana and represented the entire sixth-grade population of each school as shown in Table 4. Each school received a different treatment. In the discussion of this study, the terms *school* and *instructional method* are used synonymously. Three separate schools were chosen because of the possibility of diffusion of treatment which is a potentially confounding variable that could occur when teachers in the experimental groups

Table 4

Initial Subject Sample Across Participating Schools (N=145)

Instructional Method	<i>n</i>	%	Cumulative %
1 Traditional Reading	50	34.5	34.5
2 Transparency Mapping	55	37.9	72.4
3 Inspiration	40	27.6	100.0
Total	145	100.0	

communicate information to the teachers in the control group (Johnson & Christensen, 2000).

Instructional methods were randomly assigned to two experimental groups and one control group. The control group consisted of one group of classes located at School 1 (Instructional Method 1) with three intact sixth-grade classes that received the traditional vocabulary instruction. The experimental group at School 2 (Instructional Method 2) consisted of one group of classes with four intact sixth-grade classes that created literature maps using overhead transparencies. Classes at School 3 (Instructional Method 3) were composed of three intact sixth-grade classes that created semantic maps using Inspiration, a computer software program.

During the six-week intervention, the sixth-grade students were taught stories in Theme 4 of the Harcourt basal reader. Story-specific vocabulary and comprehension

were assessed using Theme 4 *Harcourt Reading Skills Assessment* both as a pretest and posttest. Pretest scores were used as the covariate to adjust group means for existing differences in vocabulary knowledge, comprehension, and total reading scores.

Similarly, when the *Gates-MacGinitie Reading Tests* were used, the *Gates-MacGinitie Reading Test, Level 6*, was given to students as a covariate to adjust group means for existing differences in vocabulary knowledge, comprehension, and total reading score across the schools on the *Gates-MacGinitie Reading Tests, Level 6, Form T* (see Table 5).

Table 5

Subjects by Reading Level Groups and by Instructional Method (N=104)

Reading Level Groups	Instructional Method	Number of Students Who Took the Harcourt Reading Tests	Number of Students Who Took the Gates-MacGinitie Reading Tests
High (1)	1	16	16
	2	17	17
	3	19	19
	Total	52	52
Low (2)	1	21	21
	2	18	19
	3	13	13
	Total	52	52

Students' fifth-grade Iowa Test of Basic Skills (ITBS) reading total scores were used to divide the students' scores into achievement groups. As the Spring 2003 scores were divided, a high group was determined to be at or above the 60th percentile, and a low group was determined to be at or below the 40th percentile, with a middle group of scores between the 60th and 40th percentile (Johnson & Christensen, 2000).

The scores on the ITBS in the middle group had a very small range and were neither clearly high or nor low. The differences between the scores tend to disappear when they are clustered around the mean; therefore, the middle scores were not considered in this study. There were eight scores in Instructional Method 1, 10 scores in Instructional Method 2, and six scores in Instructional Method 3 that were in the middle category, resulting in 24 students being eliminated from the sample.

Student scores of 52 are at or above the 60th percentile and are identified as the high reading level, Group 1; student scores of 42.0 and below are at or below the 40th percentile and are identified as the low reading level, Group 2. ITBS mean scores of students are shown in Table 6. The adjusted mean score for the (a) vocabulary section was 49.05, (b) comprehension section was 49.00, and (c) total reading was 49.45.

The initial student sample was 145 students. Total Reading scores for ITBS were found for 128 students. There were 17 scores missing because of to students transferring from other districts and states that did not send the scores with the students' permanent records. These 17 students' assessment scores were not included in the sample because of the inability to place them in either the high or low group. However, all students participated in the instructional methods in the classrooms and assessments during the six-week intervention. An additional 24 students were eliminated from the sample

Table 6

Total Student Academic Profile Using Fifth Grade ITBS Scores (N = 128)

	ITBS Vocabulary Percentile Rank	ITBS Comprehension Percentile Rank	ITBS Reading Total
<i>M</i>	49.05	49.00	49.45
<i>SEM</i>	1.85	1.72	1.70
<i>Mdn</i>	45.00	47.00	47.00
Mode	37.00	39.00	47.00
<i>SD</i>	20.90	19.47	19.18
Variance	436.99	379.23	367.81
Range	96.00	97.00	88.00
Minimum	3.00	2.00	11.00
Maximum	99.00	99.00	99.00

Note: Of the 145 students, 17 did not have ITBS scores and were eliminated.

because their ITBS scores were in the middle group resulting in a sample of 104 students whose scores were considered in the data analyses (see Table 7).

Hypotheses Testing

In this study, one univariate ANCOVA was used to test each null hypothesis set to determine if significant main effects or an interaction effect took place between groups. Thus, six total univariate ANCOVAs were performed, one for each dependent

Table 7

Crosstabulation of Sample Size for Instructional Groups by Reading Level (N =104)

Instructional Group	Reading Levels		Total
	High (1) <i>n</i>	Low (2) <i>n</i>	
Instructional Method 1 (Traditional Instruction)	16	20	37
Instructional Method 2 (Transparency Mapping)	17	19	36
Instructional Method 3 (Inspiration)	19	13	32
Total	52	52	104

variable. Three dependent variables were from the *Harcourt Reading Skills Assessment* (Vocabulary, Comprehension, and Total), and three were from the *Gates-MacGinitie Reading Test* (Vocabulary, Comprehension, and Total). Student pretest data on the same reading tests were used as covariates in each ANCOVA to adjust the scores on the assessments for the differences observed on the pretest variable and, in this way, statistically equate the students who differed in reading performance (Johnson & Christensen, 2000).

Null Hypothesis Set One

H₀1. There will be no significant main effects or interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and

computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Vocabulary) posttest scores.

The first ANCOVA tested the two main effects and interaction between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Vocabulary) posttest scores. As indicated in the ANCOVA summary table (see Table 8), the two main effects and the interaction were not statistically significant. The adjusted posttest mean scores for each group are shown in Table 9.

As expected, Table 8 indicates that pretest scores on the Harcourt Vocabulary test (i.e., the covariate) significantly affected the posttest scores ($F = 20.89, p < .05$). There were no main effects for Reading Levels ($F = .32, df = 1, ns$) or Instructional Methods ($F = .93, df = 2, ns$). Also, the ANCOVA showed no interaction between Instructional Method and High and Low Reading Levels ($F = .45, df = 2, ns$). Thus, none of the null hypotheses in null hypothesis set one was rejected.

Null Hypothesis Set Two

H₀2. There will be no significant main effects or interaction effect between sixth-grade students Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Comprehension) posttest scores.

Hypothesis two examined the two main effects and the interaction effect between sixth-grade students Reading Level (high or low) and type of Instructional Method

Table 8

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Harcourt Reading Skills Assessment Posttest (Vocabulary) as Dependent Variable (N = 104)

Source	Type III Sum of Squares	df	MS	F	Significance ($p <$)
Corrected Model	174.80	6	29.13	7.72	.001
Intercept	520.03	1	520.03	137.81	.001
Harcourt Pre. Voc. (Covariate)	78.81	1	78.81	20.89	.001***
Reading Level (Main Effect A)	1.21	1	1.21	0.32	.573
Instructional Method (Main Effect B)	7.03	2	3.52	0.93	.397
Reading Level X Instructional Method (Interaction)	3.40	2	1.70	0.45	.639
Error	366.04	97	3.77		
Total	35729.00	104			
Corrected Total	540.84	103			

Note: *** $p < .001$.

Note: To enhance clarity, asterisks (*) are used to denote statistical significance levels for covariate, main effects, and interactions only.

Table 9

Mean Scores For Harcourt Vocabulary Test (N = 104)

	High Reading Level Group <i>n</i> = 52					Low Reading Level Group <i>n</i> = 52				
	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	16.38	18.31	17.91	.49	16	12.62	17.29	18.14	.46	21
Instructional Method 2 (Transparency Mapping)	18.00	19.82	18.87	.52	17	13.17	17.72	18.39	.48	18
Instructional Method 3 (Inspiration)	17.21	19.47	18.79	.47	19	13.85	17.77	18.21	.55	13

(traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Comprehension) posttest scores.

As indicated in Table 10, there was no significant interaction, but each of the two main effects was statistically significant. The ANCOVA results in Table 10 showed no interaction between Instructional Methods and Reading Levels ($F = .25, df = 2, ns$). Thus, for null hypothesis set two, the two null hypotheses concerning the main effects of Instructional Method and Reading Level were rejected. After adjustment for the covariate, Instructional Method had a significant effect on Harcourt Reading Skills comprehension ($F = 3.22, p < .05$).

Table 10

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Harcourt Reading Skills Assessment (Comprehension) Posttest Scores as Dependent Variable (N = 104)

Source	Type III Sum of Squares	df	MS	F	Significance (p <)
Corrected Model	279.62	6	46.60	5.762	.001
Intercept	2243.47	1	2242.47	277.40	.001
Harcourt Pretest Com. (Covariate)	1.034	1	1.037	.13	.721
Reading Level (Main Effect A)	177.36	1	177.36	21.93	.001***
Instructional Method (Main Effect B)	52.06	2	26.03	3.22	.044*
Reading Level X Instructional Method (Interaction)	4.05	2	2.02	.25	.779
Error	784.50	97	8.09		
Total	24886.00	104			
Corrected Total	1064.12	103			

Note: * $p < .05$. *** $p < .001$.

Note: To enhance clarity, asterisks (*) are used to denote statistical significance levels for covariate, main effects, and interactions only.

Mean scores on the *Harcourt Reading Skills Assessment* (Comprehension) are shown in Table 11. Simple contrast post hoc tests were run on the three Instructional Methods

Table 11

Mean Scores For Harcourt Comprehension Test (N =104)

	High Reading Level Group <i>n</i> = 52					Low Reading Level Group <i>n</i> = 52				
	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	7.75	16.56	16.52	.72	16	6.33	14.05	14.07	.62	21
Instructional Method 2 (Transparency Mapping)	8.18	17.47	17.41	.71	17	5.17	14.22	14.29	.70	18
Instructional Method 3 (Inspiration)	7.74	15.84	15.80	.66	19	5.00	12.31	12.39	.82	13

(see Tables 12 and 13). Students receiving Instructional Method 2, literature mapping using transparencies, scored significantly higher than students receiving Instructional Method 3, literature mapping using Inspiration (see Tables 12 and 13). Additionally, as seen in Table 14, Reading Level of students significantly affected posttest scores on Harcourt Comprehension.

Null Hypothesis Set Three

H₀3. There will be no significant main effects or interaction effect between sixth-grade student Reading Level (high or low) and Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated

Table 12

Adjusted Posttest Means on Harcourt Comprehension Posttest for Instructional Group (N = 104)

Instructional Method	<i>n</i>	<i>M</i>	<i>SE</i>
Instructional Method 1 (Traditional)	37	15.29	.473
Instructional Method 2 (Transparency Mapping)	35	15.85	.481
Instructional Method 3 (Inspiration)	32	14.09	.514

Table 13

Simple Contrast of Adjusted Mean Scores on Harcourt Comprehension Posttest Among Instructional Groups

Contrast	Contrast Estimate	<i>SE</i>	Sig.
Instructional Method 1 (Traditional)	1.200	.701	.090
vs.			
Instructional Method 3 (Inspiration)			
Instructional Method 2 (Transparency Mapping)	.758	.702	.014*
vs.			
Instructional Method 3 (Inspiration)			

*Note: *p < .05.*

Table 14

Adjusted Posttest Means on Harcourt Comprehension Posttest for Reading Level Groups (N =104)

Reading Level Groups	<i>n</i>	<i>M</i>	<i>SE</i>
High (1)	52	16.57	.421
Low (2)	52	13.58	.431

literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Total) posttest scores.

Hypothesis set three examined the two main effects and the interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Harcourt Reading Skills Assessment* (Total) scores. There was no interaction effect (see Table 15). The adjusted posttest mean scores for each group are shown in Table 16.

As expected, the covariate pretest scores on the total Harcourt Assessment significantly affected posttest. Total Harcourt scores were ($F = 13.59, p < .05$). The main effect resulting from Reading Level also significantly affected posttest scores on the Harcourt Total Assessment (see Table 17). Students in the higher Reading Level had significantly higher adjusted posttest means ($M = 34.71$) than subjects with the lower levels of reading ($M = 31.83$).

Table 15

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Harcourt Reading Skills Assessment (Total) Posttest Scores as Dependent Variable (N = 104)

Source	Type III Sum of Squares	<i>df</i>	<i>M</i>	<i>F</i>	Significance (<i>p</i> <)
Corrected Model	950.52	6	158.42	10.41	.001
Intercept	1767.71	1	1767.71	116.20	.001
Harcourt Pretest Total (Covariate)	206.73	1	206.73	13.59	.001***
Reading Level (Main Effect A)	131.03	1	131.03	8.61	.004*
Instructional Method (Main Effect B)	76.98	2	38.49	2.53	.085
Reading Levels X Instructional Method	4.45	2	2.22	.15	.864
Error	1475.64	97	15.21		
Total	117804.00	104			
Corrected Total	2426.15	103			

*Note: *p* < .05. ****p* < .001.

Note: To enhance clarity, asterisks (*) are used to denote statistical significance levels for covariate, main effects, and interactions only.

Table 16

Mean Scores for Harcourt Total Test Scores (N = 104)

	High Reading Level Group <i>n</i> = 52					Low Reading Level Group <i>n</i> = 52				
	Pre test Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	24.13	34.88	34.11	1.00	16	19.10	30.38	31.53	.91	21
Instructional Method 2 (Transparency Mapping)	26.18	37.29	35.76	1.03	17	18.33	31.78	33.21	1.00	18
Instructional Method 3 (Inspiration)	24.95	35.32	34.24	.94	19	20.31	30.08	30.76	1.10	13

Table 17

Adjusted Posttest Means on Harcourt Total Among Different Reading Levels (N=104)

Reading Level	<i>n</i>	<i>M</i>	<i>SE</i>
High (1)	52	34.71	.622
Low (2)	52	31.83	.626

The ANCOVA showed no interaction between Instructional Methods and High and Low Reading Levels ($F = .15$, $df = 2$, ns). There was no significant main effect for

Instructional Method ($F = 2.53$, $df = 2$, ns) There was a main effect with Reading Levels ($F = 8.61$, $df = 1$, $p = .004$) (see Table 15). Thus, for null hypothesis set three, the null hypothesis concerning Reading Level and the null hypothesis concerning Instructional Method were both rejected.

Hypothesis Set Four

H₀4. There will be no significant main effects or interaction effect between sixth-grade student level of reading ability (high or low) and type of instructional method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T* (Vocabulary) posttest scores.

Hypothesis set four examined the main effects and the interaction effect between sixth-grade students' level of reading ability (high or low) and type of instructional method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T* (Vocabulary) scores.

As indicated in Table 18, the ANCOVA showed no interaction between Instructional Method and High and Low Reading Level Groups ($F = 1.06$, $df = 2$, ns). Mean scores for *Gates-MacGinitie Reading Tests, Level 6, Form T* (Vocabulary) are presented in Table 19. There was a significant main effect for Reading Level Groups ($F = 5.61$, $df = 1$, $p = .020$). There was no main effect for Instructional Method 1 ($F = .23$, $df = 2$, $p = ns$).

Low Reading Level group mean posttest scores on the *Gates-MacGinitie* (Vocabulary) (see Table 20) were significantly lower than the Higher Reading Level

Table 18

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Gates-MacGinitie Reading Tests (Vocabulary) Posttest Scores as Dependent Variable (N=104)

Source	Type III Sum of Squares	df	MS	F	Significance (p <)
Corrected Model	6025.71	6	1004.28	57.03	.001
Intercept	495.84	1	495.84	28.16	.001
Gates Pretest Voc. (Covariate)	1387.92	1	1387.92	78.81	.001***
Reading Level (Main Effect A)	98.75	1	98.75	5.61	.020*
Instructional Method (Main Effect B)	8.10	2	4.05	.23	.795
Reading Level X Instructional Method	37.22	2	18.61	1.06	.352
Error	1725.86	98	17.61		
Total	71195.00	105			
Corrected Total	7751.56	103			

Note: * $p < .05$. *** $p < .001$.

Note: To enhance clarity, asterisks (*) are used to denote statistical significance levels for covariate, main effects, and interactions only.

Table 19

Mean Scores for Gates-MacGinitie Vocabulary Test (N=104)

	High Reading Level Group <i>n</i> =52					Low Reading Level Group <i>n</i> =52				
	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	24.94	27.38	25.70	1.07	16	16.05	19.71	24.06	1.04	21
Instructional Method 2 (Transparency Mapping)	30.12	31.71	26.52	1.17	17	14.21	16.32	21.91	1.15	19
Instructional Method 3 (Inspiration)	32.89	33.32	26.24	1.25	19	16.54	19.00	23.01	1.25	13

Table 20

Adjusted Posttest Means on Gates-MacGinitie Reading Tests (Vocabulary) by Reading Level Groups

Reading Level	<i>n</i>	<i>M</i>	<i>SE</i>
High (1)	52	26.15	.784
Low (2)	52	22.99	.788

scores. As expected, the covariate, *Gates-MacGinitie Reading (Vocabulary)* pretest scores, was significantly related to posttest scores on the *Gates-MacGinitie Reading (Vocabulary)* ($F = 78.81, p < .001$). Thus, in null hypothesis set four, only the null

hypothesis concerning Reading Level and *Gates-MacGinitie Reading Test (Vocabulary)* was rejected.

Hypothesis Set Five

H₀5. There will be no significant main effects or interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T (Comprehension)* posttest scores.

Hypothesis five examined the main effects and the interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Test, Level 6, Form T (Comprehension)*. There was a significant interaction effect (see Table 21) as well as a significant main effect caused by Reading Level.

As is standard procedure, the main effect must be discussed within the context of the significant interaction. The adjusted posttest mean scores for each group are listed in Table 22.

Subjects who were in the High Reading Level and who received Instructional Method 3, literature mapping with Inspiration, had the highest adjusted mean scores *Gates-MacGinitie Reading Test (Comprehension)* posttest ($M = 34.53$). For the Low Reading Level, Instructional Method 3 resulted in the lowest mean posttest score on the

Table 21

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Gates-MacGinitie Reading Tests (Comprehension) Posttest Scores as Dependent Variable (N = 104)

Source	Type III Sum of Squares	df	M	F	Significance (p <)
Corrected Model	4662.16	6	777.03	21.20	.001
Intercept	1408.92	1	1408.92	38.45	.001
Gates Pretest Com. (Covariate)	720.54	1	720.54	19.66	.001
Reading Level (Main Effect A)	725.73	1	725.73	19.80	.001***
Instructional Method (Main Effect B)	56.38	2	28.19	.77	.466
Reading Level X Instructional Method	308.55	2	154.28	4.21	.018*
Error	3591.40	98	36.65		
Total	89680.00	105			
Corrected Total	8253.56	103			

Note: * $p = .05$ *** $p < .001$.

Note: To enhance clarity, asterisks (*) are used to denote statistical significance levels

Table 22

Mean Scores for Gates-MacGinitie Comprehension Test (n=104)

	High Reading Level Group <i>n</i> =52					Low Reading Level Group <i>n</i> =52				
	Pre test Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	32.50	29.13	28.47	1.52	16	23.38	22.38	25.10	1.46	21
Instructional Method 2 (Transparency)	41.18	34.29	30.44	1.71	17	26.21	23.16	24.83	1.44	19
Instructional Method 3 (Inspiration)	36.58	36.68	34.53	1.47	19	24.92	20.62	22.77	1.75	13

Gates-MacGinitie Reading Test (Comprehension) ($M = 22.77$). For the Low Reading Level, mean comprehension scores on the *Gates-MacGinitie* were similar and highest for Instructional Methods 1 and 2. The six group means are graphically represented in Figure 3.

To summarize for hypothesis set five, the ANCOVA showed significant interaction between the Instructional Method and Reading Level ($F = 4.21$, $df = 2$, $p = .018$) as shown in Table 21. There was no significant main effect of instruction type on posttest mean scores ($F = .77$, $df = 2$, ns). However, Reading Levels did have a significant main effect ($F = 19.80$, $df = 1$, $p < .001$).

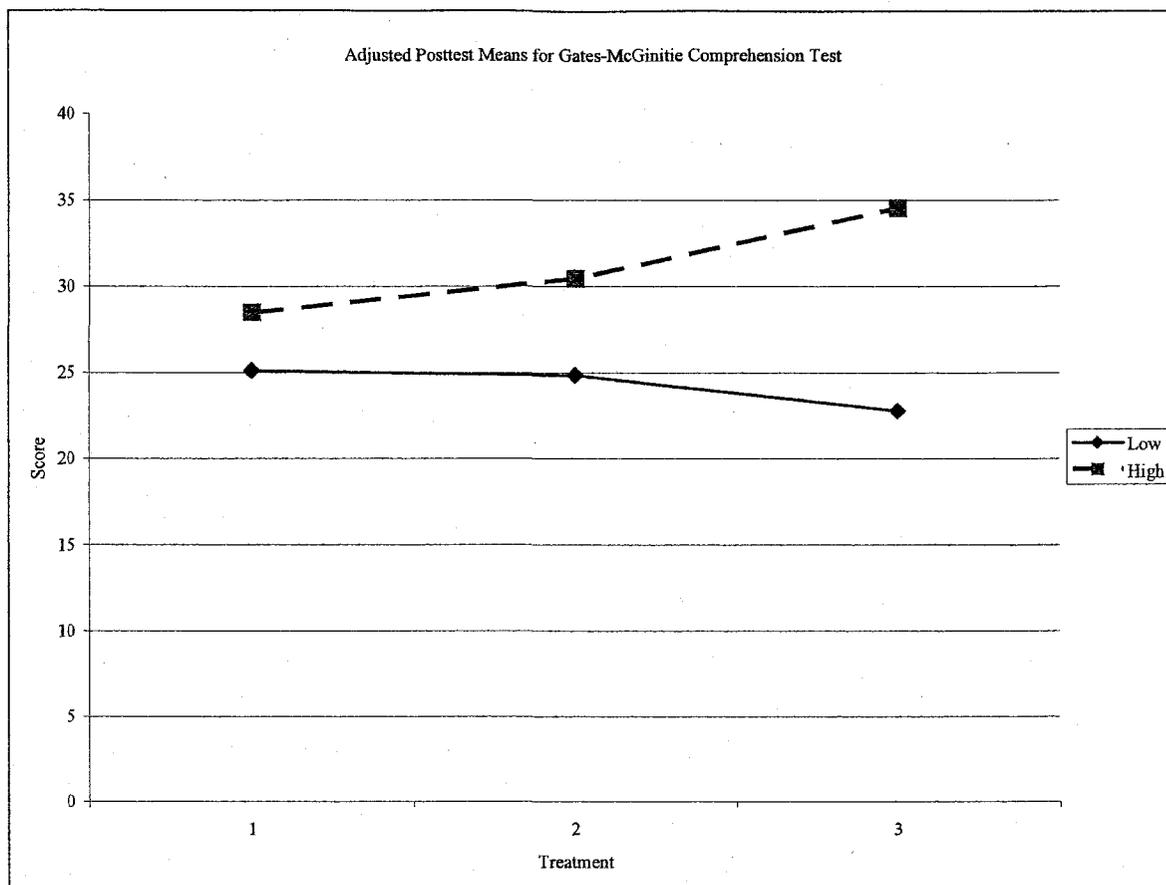


Figure 3. Interaction Effect Between Instructional Method and High and Low Reading Level Groups on the Gates-MacGinitie Reading Posttest (Comprehension)

Thus, the null hypothesis set five concerning the interaction between Reading Level and Instructional type was rejected. Also, the null hypothesis concerning the main effect of Reading Level was rejected.

Null Hypothesis Set Six

H₀₆. There will be no significant main effects or interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated

literature mapping within a story element frame) on *Gates MacGinitie Reading Test, Level 6, Form T* (Total) posttest scores.

Hypothesis six tested the main effects and the interaction effect between sixth-grade student Reading Level (high or low) and type of Instructional Method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Test, Level 6, Form T* (Total). There was no interaction effect (see Table 23). The adjusted posttest mean scores for each group are shown in Table 24.

As indicated in Table 23, an ANCOVA showed no interaction between Instructional Methods and High and Low Reading Levels ($F = 2.14$, $df = 2$, ns). There was no significant main effect caused by Instructional Method ($F = .34$, $df = 2$, ns). There was, however, a main effect caused by Reading Levels ($F = 8.47$), $df = 1$, $p = .004$). Student in the High Reading Level scored a significantly higher overall means across the three instructional methods than did subjects in the Low Level Reading Group (see Table 24). Pretest, posttest, and adjusted group means for Reading Levels are presented in Table 25. In summary, for null hypothesis set six, only the null hypothesis concerning Reading Level was rejected.

Table 23

ANCOVA Using Instructional Method and Reading Levels as Independent Variables and Gates-MacGinitie Reading Tests (Total) Posttest Scores as Dependent Variable (N=104)

Source	Type III Sum of Squares	df	M	F	Significance (p <)
Corrected Model	22456.73	6	3742.79	69.19	.001
Intercept	600.95	1	600.95	11.11	.001
Gates Pretest Total (Covariate)	4895.73	1	4895.73	90.50	.001***
Reading Level (Main Effect A)	458.15	1	458.15	8.47	.004**
Instructional Method (Main Effect B)	36.20	2	18.10	.34	.716
Reading Level Groups X Instructional Method	231.94	2	115.97	2.14	.123
Error	5301.52	98	54.10		
Total	317112.00	105			
Corrected Total	27758.25	103			

*Note: **p < .01. ***p < .001.*

Note: To enhance clarity, asterisks () are used to denote statistical significance levels for covariate, main effects, and interactions only.*

Table 24

Mean Scores for Gates-MacGinitie Total Test Scores (N = 104)

	High Reading Level Group <i>n</i> = 52					Low Reading Level Group <i>n</i> = 52				
	Pre test Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>	Pretest Mean	Post- test Mean	Adjusted Posttest Mean	<i>SE</i>	<i>n</i>
Instructional Method 1 (Traditional)	57.44	57.13	53.83	1.87	16	40.48	41.62	50.71	1.87	21
Instructional Method 2 (Transparency)	68.06	66.00	54.96	2.13	17	40.74	39.47	48.37	1.93	19
Instructional Method 3 (Inspiration)	69.37	70.53	58.53	2.11	19	41.46	39.38	47.75	2.22	13

Table 25

Adjusted Posttest Means on Gates-MacGinitie Reading Comprehension Tests Among Reading Level Groups

Reading Level Group	<i>n</i>	<i>M</i>	<i>SE</i>
High (1)	52	55.7	1.38
Low (2)	52	48.94	1.38

CHAPTER FIVE

Summary, Conclusions, and Recommendations

Presented in this chapter are the findings of this study divided into four sections. The first section is a summary of the results of the study. The second section is the researcher's conclusions drawn from the study's findings. The third section contains recommendations for application of the study's findings to classroom practice. The fourth and concluding section contains recommendations for further empirical research.

Summary

The general research question was How do the two independent variables, (a) Reading Level and (b) Instructional Method, separately and together influence the dependent variable, reading achievement, as assessed by three measures each from the *Harcourt Reading Skills Assessment* and the *Gates-MacGinitie Reading Tests*? The Reading Level independent variable was included because it was thought that there might be an interaction between Instructional Method and student reading ability, operationalized by Reading Levels. Pretest scores on the *Harcourt Reading Skills Assessment* and *Gates-MacGinitie Reading Tests, Level 6, Form S* were used as covariates to control for pretest differences in reading. The conclusions of this study will be discussed in relation to the hypotheses. All conclusions deduced from this research should be considered in relationship to the limitations of this study. Table 26 provides a

Table 26

Summary Table of Significant Main Effects and Interactions From the Six ANCOVAs

Independent Variables	Dependent Variables					
	1*	2*	3*	4*	5*	6*
Reading Level (A)	No	Yes	Yes	Yes	Yes	Yes
Instructional Method (B)	No	Yes	No	No	No	No
Interaction (A X B)	No	No	No	No	Yes	No
Covariate (Pretest)	Yes	No	Yes	Yes	Yes	Yes

Note: Yes = significance at $p < .05$, No = not statistically significant.

Note: *Dependent Variable Labels: 1 = *Harcourt Vocabulary Posttest*, 2 = *Harcourt Comprehension Posttest*, 3 = *Harcourt Total Pretests*, 4 = *Gates-MacGinitie Vocabulary Posttest*, 5 = *Gates-MacGinitie Comprehension Posttest*, 6 = *Gates-MacGinitie Total Posttest*.

summary of the findings of the six ANCOVAs that comprised the major analyses of this research project.

From Table 26, five of the six ANCOVAs showed that Reading Level had a significant main effect on the dependent variable scores. In each case, the High Reading Level showed a significantly higher posttest score on the dependent variable than the Low Reading Level Group. Significant results were found for these five dependent

variables: *Harcourt Reading Skills Assessment (Comprehension)*, *Harcourt Reading Skills Assessment (Total)*, *Gates-MacGinitie Reading Test, Level 6, Form T, (Vocabulary)*, *Gates-MacGinitie Reading Test, Level 6, Form T (Comprehension)*, and *Gates-MacGinitie Reading Test, Level 6, Form T (Total)* scores. This finding is consistent with expectations and was not a major focus of interest for this research. It simply shows that students of higher reading levels show significantly higher scores on the posttest measures of reading achievement. As noted previously, Reading Level was included as an independent variable in order to test whether there was a significant Reading Level by Instructional Method interaction. In other words, the research design was set to test whether the effectiveness of the Instructional Method depended on the Reading Level of the student.

Concerning hypotheses of greater theoretical interest, in only one of the six ANCOVAs was the main effect the results of Instructional Method statistically significant. In this case, Instructional Method showed a significant effect on *Harcourt Reading Skills Assessment (Comprehension)* scores, with the students exposed to the Transparency Method of Instruction showing a significantly higher mean Harcourt Comprehensive score than the students exposed to the Inspiration Method of Instruction.

Of the hypotheses that tested the significance of the interaction between Instructional Method and Reading Level Group, only one of the six hypotheses was supported by statistically significant results, the effect of Instructional Method on *Gates MacGinitie Reading Tests, Level 6, Form T (Comprehension)* scores depended on the Reading Level of the students. Students in the High Reading Level Group performed best in Instructional Method 3, Inspiration (Mean = 34.5), while students in the Low

Reading Level Group performed worst on Instructional Method 3, Inspiration; (Mean = 22.7). This demonstrates the importance of matching the Instructional Method with student reading level. The numerous instructional strategies available to teachers must be understood and utilized by the students to be effective. Inspiration, a semantic organizing software program (Instructional Method 3) has colorful, descriptive pictures and sounds that enhance the program. This study indicates that literature mapping with Inspiration aids and may even enhance the high-achieving student's general reading comprehension. However, literature mapping with Inspiration did not aid the low-achieving student's general reading. Therefore, when choosing an instructional strategy for reading, Inspiration would be more effective for the higher-achieving students than for low-achieving students.

Conclusions

This study was limited by the inability to obtain a random or fully representative sample of sixth-grade students because of the intact classes in the schools in which the data were gathered. Therefore, these findings may not be generalized beyond these sixth-grade classes in north Louisiana schools.

The reading curriculum used in the experiment was limited to the Harcourt Reading Series adopted and mandated by the north Louisiana school system, and the limitation of the time frame was due to the schedule designed by the school system for 50-minute lessons for a six-week unit. Replication of the study could produce variation in test performance caused by different reading material and a longer time span to evaluate student abilities.

Effect on All Students' Scores

Statistically significant main effects with reading levels were noted with *Harcourt Reading Skills Assessment (Comprehension)* posttest, *Harcourt Reading Skills Assessment (Total)* posttest, *Gates-MacGinitie Reading Tests, Level 6, Form T (Vocabulary)* posttest, *Gates-MacGinitie Reading Tests, Level 6, Form T (Comprehension)* posttest, and *Gates-MacGinitie Reading Tests, Level 6, Form T (Total)* posttest. The students' scores increased significantly from the pretest to the posttest within the Reading Levels. This finding is consistent with expectations that students who are better readers score higher on reading tests. Therefore, these findings will not be discussed.

Interaction Effect on Students' General Comprehension Knowledge

There was a significant interaction effect between sixth-grade students' level of reading ability and type of instructional method (traditional, transparency literature mapping within a story element frame, and computer-generated literature mapping within a story element frame) on *Gates-MacGinitie Reading Tests, Level 6, Form T (Comprehension)* posttest scores. This interaction was unexpected because research studies suggest that all students, regardless of achievement levels, should benefit from computer-assisted instruction. During this study, Inspiration supported learning strategies for all students regardless of ability levels that fall under the following four categories: (a) organizational strategies for basic vocabulary learning tasks, (b) organizational strategies for complex comprehension learning tasks, (c) elaboration strategies for complex vocabulary learning tasks, and (d) comprehension monitoring skills.

The posttest mean scores indicate that the intervention using Inspiration, a literature mapping procedure using a computer, was an effective strategy to increase general comprehension of the high-achieving students. The interaction effect was more than expected. The same concept is true for the low-achieving students except in the negative direction. The low-achieving students not only scored low, but they scored lower than on the other tests that were administered.

Findings from this study indicate that there was not a significant difference in scores of specific and general vocabulary knowledge and comprehension knowledge when utilizing vocabulary instructional strategies suggested and correlated by the writers of the basal readers. There was also not a significant difference in scores of specific and general vocabulary knowledge and comprehension knowledge when using a literature mapping procedure T-CaPS MaP for sixth grade students. There was an interaction in the scores of the general comprehension measure of Instructional Method 3 (literature mapping using Inspiration). The interaction effect occurred between the high and low groups when the high group scored highest of all the groups but the low group scored lowest of all the groups (see Figure 3). During the analysis of covariance, the pretest means were adjusted so that a comparison could be made. Therefore, there was neither a halo effect nor were the scores higher by chance.

A possible explanation for this interaction could be the sixth-grade students' varied stages of cognitive development. There is a wide range of cognitive development between the concrete operations stage through the formal operations stage. As adaptation and organization are utilized in the high order activity of literature mapping through Inspiration, there is a possibility that the higher achieving students are at a high

stage of cognitive development and this activity is, therefore, very stimulating and motivating to them.

On the other hand, the lower-achieving students may be at a low stage of cognitive development, perhaps at the lower end of the concrete operations stage, and the high order activity of literature mapping is a challenge for them. Adding the computer concept of Inspiration, the low-achieving students might be overwhelmed, causing their scores to be lower than with the other two instructional methods.

There was not a significant difference in the mean *Gates-MacGinitie Reading Tests, Level 6, Form T (Vocabulary)* posttest scores among sixth-grade students who were taught traditional reading methods, methods that include transparency literature mapping within a story element frame, or computer-generated literature mapping within a story element frame. Both *Gates-MacGinitie Reading Tests, Level 6, Form S and T* have a wide variety of vocabulary words to define and without a specific group of words to learn, the students may not have known or had any experiences with these words. The vocabulary words were specific to the stories in the basal reader, and there were usually no more than fifteen words each week. These words were specific to the story, so comprehension was enhanced but the scores on the *Gates-MacGinitie Reading Tests* were not significant. Vocabulary instruction has a significant effect on the comprehension of passages containing taught words but has a slight effect on comprehension of passages not necessarily containing taught words.

Effect on Students' Basal Specific Knowledge

An analysis of pretest and adjusted posttest mean scores for basal specific vocabulary knowledge indicates that students' scores in Instructional Method 2

(literature mapping using transparencies) improved from 18.00 to 18.87 in the high group and from 13.17 to 18.39 in the low group, and in Instructional Method 3 they (literature mapping using Inspiration) improved from 17.21 to 18.79 in the high group and from 13.85 to 18.21 in the low group (see Table 7). Further, an analysis of pretest and posttest mean scores for basal specific comprehension knowledge indicates that students' scores in Instructional Method 2 (literature mapping using transparencies) improved from 8.18 to 17.41 in the high group and from 5.17 to 14.29 in the low group. Scores in Instructional Method 3 (literature mapping using the software program, Inspiration) improved from 7.74 to 15.80 in the high group and from 5.00 to 12.39 in the low group (see Table 9).

However, there was not a significant difference in the mean *Harcourt Reading Skills Assessment* (Vocabulary) posttest scores among sixth-grade students who were taught traditional reading methods, methods that include transparency literature mapping within a story element frame or computer-generated literature mapping within a story element frame. When controlling for pretest scores in this study, possible reasons for the lack of significant differences in knowledge of specific basal vocabulary in both literature mapping interventions indicate that students could have been (a) equally fascinated with the process and focused on the process of developing the T-CaPS MaP more than the words and concepts taught, (b) bored with the six-week intervention, or (c) asked to complete activities that were not within their conceptual development and their potential development. Because the lack of significant difference in the mean *Harcourt* posttest scores, a conclusion could be drawn that perhaps the pace of the

lessons may have been too fast and that students may have been expected to assume responsibility for vocabulary knowledge and comprehension too quickly.

An analysis of pretest and adjusted posttest mean scores for *Harcourt Reading Skills Assessment* (Vocabulary) knowledge indicated that there were no significant differences between high reading level and low reading level students scores in Instructional Method 1 (traditional instructional methods). One possible explanation for non-significant differences in the group's scores is that students may not have related to or may not have been interested in the stories from the basal reader. Students were preparing for and may not have been interested in reading instruction. Those in the experimental groups were accustomed to a particular routine and may not have attempted to accomplish reading tasks set by the teacher.

Implications for Classroom Practice

This study provides the following two significant findings for educators. First, after direct instruction using the T-CaPS MaP, a form of literature mapping utilizing Inspiration, high achieving students score significantly higher on *Gates-MacGinitie Reading Tests*, general comprehension assessment, than those who used either traditional instruction or direct instruction utilizing transparencies (see Figure 3). These students in the high reading level group scored higher on this general assessment than they scored on any of the other tests that they took. The data from this study support the implications that higher achieving students have larger vocabularies, better understanding of text organization, and richer prior experiences to aid in the completion of the literature map. They also often have experience with technology that could account for their higher scores during this study.

Second, after direct instruction using the T-CaPS MaP utilizing Inspiration, low achieving students tended to score lower on *Gates-MacGinitie Reading Tests*, general comprehension assessment, than they scored on either traditional instruction or direct instruction using transparencies. The data from this study support the implications that students who score lower on reading assessments have smaller vocabularies, have limited understanding of the organization of text, and have limited experiences with technology which could explain their lower scores during this study. The interaction effect findings between the high and low reading levels are within the limitations of this study.

Although this study resulted in limited significant findings, it is possible to project teaching strategies that may improve student learning. The interaction effect between reading level and instructional method demonstrates that the instructional strategy of Inspiration is beneficial to high-achieving students but is not effective for low-achieving students. Teachers should be aware of these findings as they implement vocabulary instruction utilizing Inspiration. The instructional method of literature mapping using transparencies was effective in teaching basal comprehension skills illustrated by the main effect with the instructional method and the *Harcourt Reading Skills Assessment (Comprehension)* posttest. The relationship between reading levels, high and low, was significant with the basal comprehension, basal total vocabulary and comprehension, general vocabulary knowledge, and general total vocabulary and comprehension. These relationships were demonstrated by the main effect between reading levels and *Harcourt Reading Skills Assessment (Comprehension)* posttest, *Harcourt Reading Skills Assessment (Total)* posttest, *Gates-MacGinitie Reading Tests*,

Level 6, Form T (Vocabulary) posttest, and Gates-MacGinitie Reading Tests, Level 6, Form T (Total) posttest.

Recommendations for Future Research

This study contained information that provided insight regarding the relationship between vocabulary and comprehension of sixth-grade students. Further research is needed in this area because of the skills that need to be learned at this developmental stage. As a result of the findings and conclusions generated from this study, the following recommendations are made for further research.

This study could be replicated at the beginning and end of the school year to allow for maturation and scheduling differences. Seventh- or eighth-grade students could participate in a similar study to determine if the difference of a year or two could affect the cognitive development of the Formal Operational skills. A larger number of students or perhaps a wider diversity of socioeconomic, cultural, and location factors could be recommended for further research. The following methods of using the instructional strategy of T-CaPS MaPS could possibly be effective: (a) longer direct instruction from the teacher with multiple opportunities for the students to practice small parts of the mapping procedures, (b) concentrating on the concrete parts of the map for a longer period of time before moving to the abstract parts of the map, or (c) using the mapping procedure in other content areas such as social studies or science. An application of the procedure utilizing a combination of Inspiration and transparency with a T-CaPS MaP could provide variety in instruction and motivate the student to internalize the story elements.

As a further recommendation for research, a qualitative study utilizing the variables and design of this study would be an appropriate way to investigate middle school student confidence in using a metacognitive strategy to increase vocabulary and comprehension skills as well as confidence in test-taking strategies. Confidence and enjoyment of reading could be factors that could be evaluated with the qualitative study.

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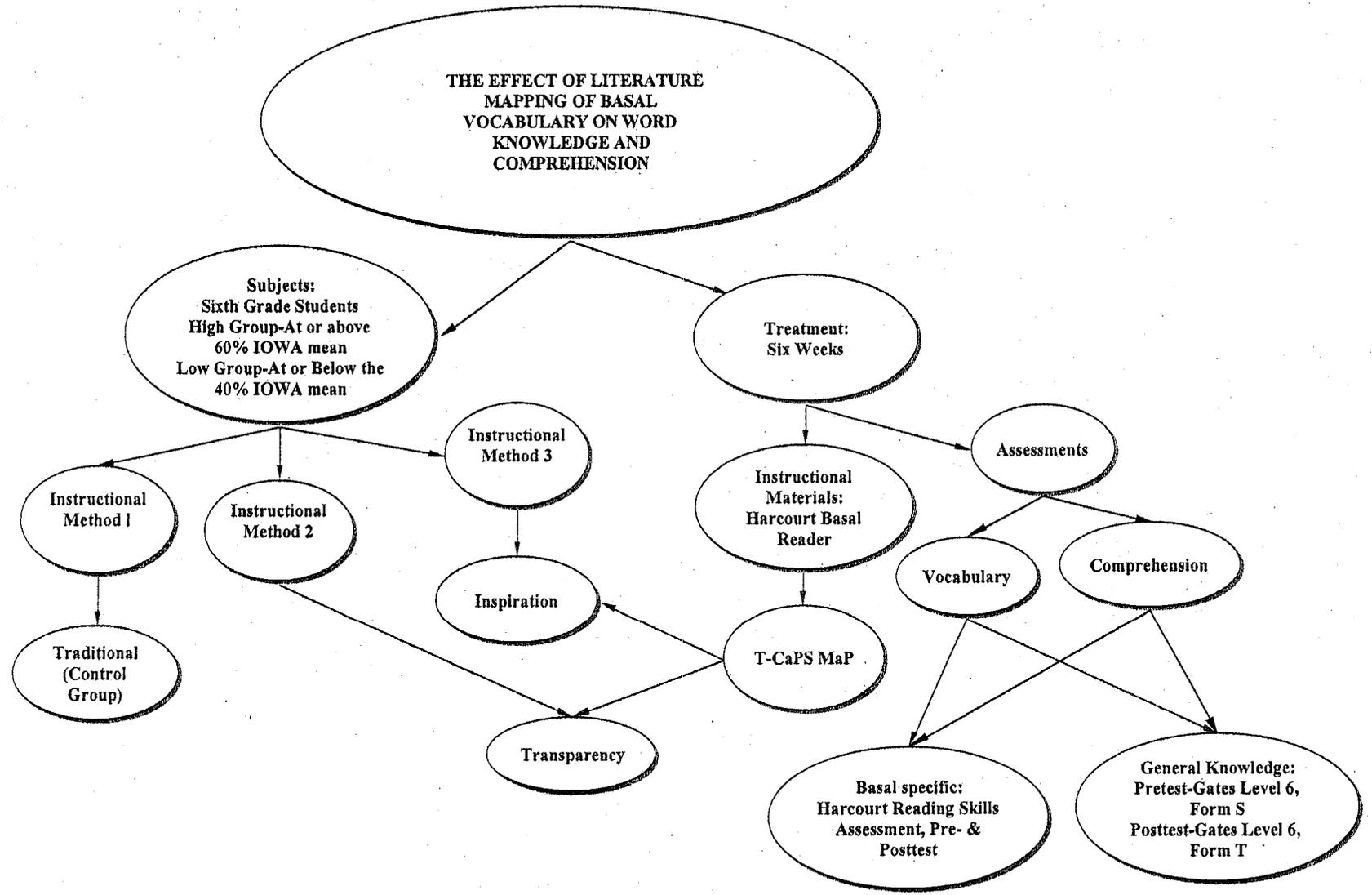
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APPENDIX A
SEMANTIC MAP OF THE EXPERIMENTAL DESIGN



APPENDIX B
EXTENDED SCALE SCORE SUMMARY STATISTICS

Extended Scale Score Summary Statistics

Levels PR through 10/12

	Fall					Spring				
	Mean	SD	Median	SEM	K-R 20	Mean	SD	Median	SEM	K-R 20
Level PR, Grade K Total						326	38.2	324	9.4	0.94
Level PR, Grade 1 Total	345	42.3	342	11.2	0.93					
Level BR, Grade 1 Total	345	42.3	342	9.5	0.95	394	47.4	391	10.6	0.95
Level 1, Grade 1 Word Decoding						396	51.9	392	12.7	0.94
Comprehension						394	46.0	391	12.2	0.93
Total						394	47.4	391	9.5	0.96
Level 2, Grade 2 Word Decoding	427	50.0	423	12.2	0.94	452	52.1	451	12.8	0.94
Word Knowledge	424	43.7	421	12.4	0.92	446	47.5	445	12.6	0.93
Comprehension	423	45.1	423	12.8	0.92	445	44.5	445	12.6	0.92
Total	424	42.1	422	7.3	0.97	447	43.2	446	7.5	0.97
Level 3, Grade 3 Vocabulary	461	42.4	459	11.2	0.93	472	43.5	471	11.5	0.93
Comprehension	461	40.5	460	10.7	0.93	475	40.5	474	10.7	0.93
Total	460	38.5	459	7.7	0.96	472	39.3	472	7.9	0.96
Level 4, Grade 4 Vocabulary	482	39.0	481	11.0	0.92	491	41.1	491	11.6	0.92
Comprehension	486	38.7	484	10.2	0.93	496	40.8	494	10.8	0.93
Total	483	35.7	482	7.1	0.96	493	38.3	492	7.7	0.96
Level 5, Grade 5 Vocabulary	501	36.9	500	11.1	0.91	508	38.3	506	11.5	0.91
Comprehension	502	38.2	500	10.8	0.92	509	37.7	508	10.6	0.92
Total	501	34.2	499	7.6	0.95	508	34.8	507	7.8	0.95
Level 6, Grade 6 Vocabulary	515	37.4	513	11.2	0.91	520	38.7	519	10.9	0.92
Comprehension	516	37.1	515	11.1	0.91	522	38.9	521	11.0	0.92
Total	515	33.7	514	7.5	0.95	520	35.4	520	7.9	0.95
Level 7/9, Grade 7 Vocabulary	526	36.2	525	10.9	0.91	531	36.4	530	10.9	0.91
Comprehension	528	35.6	526	10.1	0.92	531	35.7	531	10.1	0.92
Total	528	32.5	526	7.3	0.95	531	32.6	531	7.3	0.95
Level 7/9, Grade 8 Vocabulary	536	38.1	535	11.4	0.91	540	38.7	539	11.6	0.91
Comprehension	536	35.1	536	9.9	0.92	540	35.8	540	10.1	0.92
Total	536	33.0	535	7.4	0.95	540	34.3	540	7.7	0.95
Level 7/9, Grade 9 Vocabulary	544	38.5	543	11.6	0.91	547	37.6	546	11.3	0.91
Comprehension	546	38.9	544	11.0	0.92	550	38.0	548	10.7	0.92
Total	546	35.1	544	7.8	0.95	549	35.8	547	8.0	0.95
Level 10/12, Grade 10 Vocabulary	550	36.2	549	11.4	0.90	552	36.4	551	10.9	0.91
Comprehension	555	36.4	552	10.3	0.92	559	38.2	555	10.1	0.93
Total	553	34.1	550	7.6	0.95	556	34.3	554	7.7	0.95
Level 10/12, Grade 11 Vocabulary	554	36.5	553	11.5	0.90	556	37.4	555	11.2	0.91
Comprehension	561	37.9	558	10.7	0.92	563	38.6	561	10.2	0.93
Total	557	34.2	556	7.6	0.95	559	34.3	558	7.7	0.95
Level 10/12, Grade 12 Vocabulary	558	37.3	557	11.8	0.90	561	39.4	558	11.8	0.91
Comprehension	566	38.6	564	10.9	0.92	572	40.4	567	10.7	0.93
Total	563	33.7	560	7.5	0.95	566	36.2	562	8.1	0.95

Extended Scale Score Summary Statistics**Level AR**

	Mean	SD	Median	SEM	K-R 20
Level AR, Grade 13					
Vocabulary	560	36.5	557	12.6	0.88
Comprehension	580	32.5	579	10.8	0.89
Total	569	30.9	567	8.2	0.93

* It should be noted that Level AR does not have semester-based norms.

APPENDIX C
STUDY PROJECT INFORMATION FOR HUMAN SUBJECTS
COMMITTEE

STUDY/PROJECT INFORMATION FOR HUMAN SUBJECTS COMMITTEE

Describe your study/project in detail for the Human Subjects Committee. Please include the following information.

TITLE: The Effect of Literature Mapping of Basal Vocabulary on Word Knowledge and Comprehension

PROJECT DIRECTOR(S): Andrea Lynn Morris

EMAIL: lmorris@jam.rr.com

PHONE: (318) 345-5149

DEPARTMENT(S): Curriculum, Instruction, & Leadership

PURPOSE OF STUDY/PROJECT: To determine the relationship, if any, between the instruction of basal vocabulary using literature mapping and increased word knowledge and comprehension.

SUBJECTS: Sixth grade students in 3 schools in Monroe City School System: Cypress Point Elementary School, Lexington Elementary School, & Sallie Humble Elementary School

PROCEDURE: Using the basal text adopted by the Monroe City School System, students will be taught vocabulary using literature mapping in a story frame designed by the researcher. The students will be taught by their assigned classroom teacher who will be trained by the researcher in the intervention. The intervention will last for 6 weeks.

INSTRUMENTS AND MEASURES TO INSURE PROTECTION OF CONFIDENTIALITY, ANONYMITY: Students will be pretested and posttested on basal and general vocabulary knowledge as well as basal and general comprehension. For statistical purposes, students' 5th grade Iowa scores will be used to determine grouping of high, medium, and low. All information will be held confidential and only viewed by the researcher.

RISKS/ALTERNATIVE TREATMENTS: There are no risks associated with participation in this study. Students will be taught the adopted reading curriculum.

BENEFITS/COMPENSATION: None

SAFEGUARDS OF PHYSICAL AND EMOTIONAL WELL-BEING: This study involves no treatment or physical contact. All information collected from the study will be held strictly confidential.

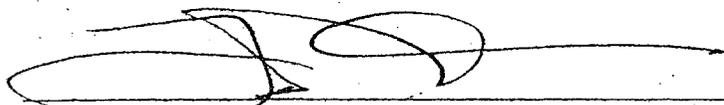
Note: Use the Human Subjects Consent form to briefly summarize information about the study/project to participants and obtain their permission to participate.

APPENDIX D
PERMISSION FROM SUPERINTENDENT

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, Dr. George Cannon, Superintendent of Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading in the Monroe City School District. I understand the research will be conducted with sixth grade students using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

The research will determine knowledge in the areas of vocabulary and comprehension. A summary of the finding will be presented to me at the conclusion of the study.



Dr. George Cannon

7-30-03

Date

APPENDIX E
PERMISSION FROM PRINCIPALS

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, Mrs. Ann Cook, Principal of Cypress Point Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading at Cypress Point Elementary. I understand the research will be conducted with sixth grade students using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with encouragement to the teacher, classroom observations, check of notebook documentation, and conferences with the researcher. A summary of the finding will be presented to me at the conclusion of the study.

Mrs. Ann Cook
Mrs. Ann Cook

11/18/2003
Date

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, Mrs. Pat White , Principal of Sallie Humble Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading at Sallie Humble Elementary. I understand the research will be conducted with sixth grade students using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with encouragement to the teacher, classroom observations, check of notebook documentation, and conferences with the researcher. A summary of the finding will be presented to me at the conclusion of the study.

Pat White

Mrs. Pat White

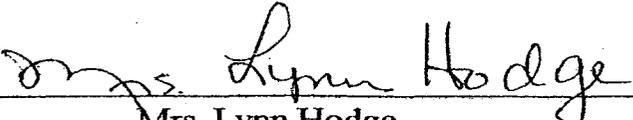
11-21-03

Date

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, Mrs. Lynn Hodge, Principal of Lexington Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading at Lexington Elementary. I understand the research will be conducted with sixth grade students using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with encouragement to the teacher, classroom observations, check of notebook documentation, and conferences with the researcher. A summary of the finding will be presented to me at the conclusion of the study.


Mrs. Lynn Hodge

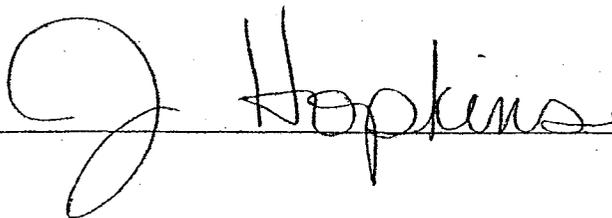
11/18/03
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APPENDIX F
PERMISSION FROM TEACHERS

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, as a sixth grade teacher of reading at Sallie Humble Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading in my classroom. I understand the research will be conducted using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with attendance at the training of the intervention, adherence to the prescribed intervention, reliable testing procedures, and documentation of the results of the intervention and testing. A summary of the finding will be presented to me at the conclusion of the study.

A handwritten signature in cursive script that reads "J Hopkins". The signature is written over a horizontal line.

11-18-03

Date

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, as a sixth grade teacher of reading at Cypress Point Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading in my classroom. I understand the research will be conducted using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with attendance at the training of the intervention, adherence to the prescribed intervention, reliable testing procedures, and documentation of the results of the intervention and testing. A summary of the finding will be presented to me at the conclusion of the study.

Susan Ryan

11/18/03

Date

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, as a sixth grade teacher of reading at Lexington Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading in my classroom. I understand the research will be conducted using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with attendance at the training of the intervention, adherence to the prescribed intervention, reliable testing procedures, and documentation of the results of the intervention and testing. A summary of the finding will be presented to me at the conclusion of the study.

Vicki Robinson

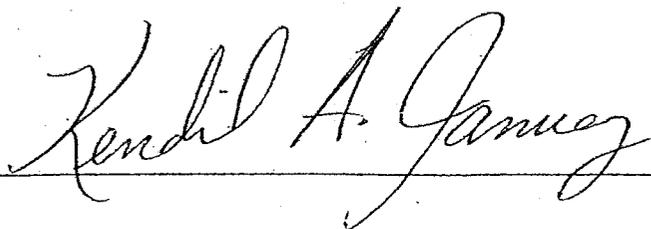
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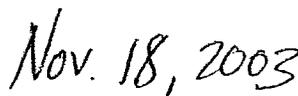
Date

PERMISSION TO CONDUCT
DOCTORAL RESEARCH

I, as a sixth grade teacher of reading at Lexington Elementary in the Monroe City School District, grant Mrs. Lynn Morris, doctoral student from Louisiana Tech University, permission to conduct experimental design research in the area of reading in my classroom. I understand the research will be conducted using the Harcourt Reading Series, the Series designated as the basal reading series for the District, during the required reading instructional time.

As the research will determine student knowledge in the areas of vocabulary and comprehension, I will support this study with attendance at the training of the intervention, adherence to the prescribed intervention, reliable testing procedures, and documentation of the results of the intervention and testing. A summary of the finding will be presented to me at the conclusion of the study.





Date

APPENDIX G
HUMAN SUBJECTS CONSENT FORM

HUMAN SUBJECTS CONSENT FORM

The following is a brief summary of the project in which you are asked to participate. Please read this information before signing the statement below.

TITLE OF PROJECT: The Effect of Literature Mapping of Basal Vocabulary on Word Knowledge and Comprehension

PURPOSE OF STUDY/PROJECT: To determine if using literature mapping of basal vocabulary words will effect word knowledge and comprehension.

PROCEDURE: Using the reading stories from the students' reader, the classroom teacher will use a literature map to teach vocabulary. The students will take a pretest and a posttest to determine how well they learned the vocabulary words and understand the stories.

INSTRUMENTS: The Harcourt Reading Series, adopted by Monroe City School District, will be used for the instruction. The Harcourt Reading Tests and Gates MacGinitie Tests will be used to evaluate the students' learning.

RISKS/ALTERNATIVE TREATMENTS: There are no risks associated with participation in this study.

BENEFITS/COMPENSATION: None

I, _____, attest with my signature that I have read and understood the following description of the study, " _____", and its purposes and methods. I understand that my participation in this research is strictly voluntary and my participation or refusal to participate in this study will not affect my relationship with the elementary school, Louisiana Tech University, or my grades in any way. Further, I understand that I may withdraw at any time or refuse to answer any questions without penalty. Upon completion of the study, I understand that the results will be freely available to me upon request. I understand that the results of my survey will be confidential, accessible only to the principal investigators, myself, or a legally appointed representative. I have not been requested to waive nor do I waive any of my rights related to participating in this study.

Signature of Participant or Guardian

Date

CONTACT INFORMATION: The principal experimenters listed below may be reached to answer questions about the research, subjects' rights, or related matters.

Mrs. Andrea Lynn Morris
Louisiana Tech University
(318) 345-5149
lmorris@jam.rr.com

Members of the Human Use Committee of Louisiana Tech University may also be contacted if a problem cannot be discussed with the experimenters:

Dr. Terry McConathy (257-2924)
Dr. Mary M. Livingston (257-2292)
Stephanie Herrmann (257-5075)

APPENDIX H
TEACHER TRAINING AGENDA

Teacher Training

The three schools in this study were given the following identification:

- Cypress Point Elementary - School A
- Lexington Elementary - School B
- Sallie Humble Elementary - School C

An independent research randomly choose School A as the control school and School B and C as experimental by drawing slips of paper. Sallie Humble Elementary will be the training site for Schools B and C, as the experimental schools. Cypress Point will be the training site for School A, the control school.

When? Session 1-Friday, 12:30-2:30

Session 2-One week later--Friday, 12:30-2:30

Session 1 Agenda:

1. Teachers will be informed that the purpose of this study is to determine the effects of literature mapping, teacher-designed (transparency) and computer-designed (Inspirations), on vocabulary acquisition and comprehension of sixth grade students. A story frame, T-CaPS MaP, will be used to support the literature map. *Steps in implementing this intervention are:

1. Introducing basal/story vocabulary and background information for the story.
2. Tentatively mapping the basal/story vocabulary in T-CaPS, MaP.
3. Orally reading the story.
4. Confirming the correctness of the T-CaPS MaP and defining the vocabulary.
5. Reflecting on the literature map for comprehension of the story.

2. Teachers will be shown a transparency reflecting the teacher-designed method using *Number the Stars*, one of the stories from the basal text, with the basal/story vocabulary words: *soothingly, occupation, disdainfully, exasperated, belligerently, unwavering, Annemarie Johansen, Kirsti Johansen, Ellen Rosen, Copenhagen, Danes, Germans, Mama, Papa, Mr. and Mrs. Rosen, Jews, blackout curtains, "the Giraffe", Lise Johansen*

mapped in a story frame, T-CaPS MaP:

- Title of the Story,
- Characters-*Who is the story about?*,
- Point of View-*Through whose mind does reader see the story?*,
- Setting-*Where & when does the story take Place?*,
- Mood-*What is the general feeling or emotion in the story?*,
- Theme-*What is the story about?*

3. Teachers and researcher will design a literature map together using *My Side of the Mountain*, the first story from Theme 4 in the basal text. The steps in the process are:

1. List the basal vocabulary words: remote, migration, discouraging, nourishing, edible, foundation, cavity

2. Choose story vocabulary words that would add to the comprehension of the story.
3. Complete the template using the T-CaPS MaP.

4. Each teacher choose a story from Theme 4, create a literature map, and share the map with the group. The remaining stories from Theme 4 are:

Febold Feboldson,
The Kid Who Invented the Popsicle,
A Do-It-Yourself Project, and
Catching the Fire: Philip Simmons, Blacksmith.

Session 2 Agenda:

1. The researcher will demonstrate Inspirations software using the demonstration monitor. *Number the Stars*, the basal story and basal/story vocabulary used in Session 1, will be used to demonstrate the literature map with the T-CaPS MaP frame.
2. Using individual computers, each teacher will create a literature map using Inspirations software. The literature map will use the information from the map that the teachers created in Session 1.
3. The maps will be shared with the group.
4. The *Steps in the implementing the intervention will be discussed and modeled by the researcher using *My Side of the Mountain* and the basal/story vocabulary.
5. At the end of Session 2, teachers will draw slips of paper to determine who will use teacher-designed and computer-designed methods.
6. The teacher will decide if further training is necessary for understanding and implementing the intervention.

APPENDIX I
INTERVENTION WEEKLY SCHEDULE

Detailed Description of Intervention

The following schedule is divided into the six-week period of instructional activities that the teachers used as a guide during this experimental study. The *Harcourt* and *Gates-MacGinitie Reading Tests* were administered. Instruction followed the Slow Release of Responsibility Model where intense instruction occurred at the beginning and the students slowly, each week, took more responsibility for their vocabulary instructional activities. Included in this schedule is reading the story from the basal reader and how the T-CaPS MaP is used to enhance comprehension instruction. Students took a posttest using the *Harcourt* and *Gates-MacGinitie Reading Tests*.

The schedule is detailed enough that it could be adapted for a use with any basal series. Other tests could be used to gather pretest and posttest data.

Week 1	Minutes	Activities
1-20-04	25	Harcourt Pretest
	25	Gates-MacGinitie Pretest
1-21-04	10	Teacher introduced T-CaPS MaP with definitive questions: <u>Title of Story</u> <u>Characters-Who is the story about?</u> <u>Point of View-Through whose mind does the reader see the story?</u> <u>Setting-Where and when does the story take place?</u> <u>Mood-What is the general feeling or emotion in the story?</u> <u>Plot-What is the story about?</u>
1-22-04	25	Teacher and students reviewed basal vocabulary words within context of the story for accuracy of placement on T-CaPS MaP frame.
	25	Teacher and students defined basal vocabulary with synonyms or short definitions and mapped them on the template.
1-23-04	20	Teacher gave the students a blank template with the categories and students wrote the questions that go with the category as an assessment of the student understanding of the T-CaPS MaP.

Week 2	Minutes	Activities
1-26-04	10	Teacher introduced basal vocabulary and background of the story.
	5	Teacher completed the titles of each of the categories on a blank template with the T-CaPS MaP.
	10	Teacher lead students orally through the process of mapping the basal vocabulary.
	30	Story read orally by both teacher and students.
1-27-04	15	Reviewed basal vocabulary and background of the story.
	35	Extended the T-CaPS MaP by completing categories from the basic template and checked for accuracy.
1-28-04	20	Reviewed T-CaPS MaP for any additions that would make the map more descriptive of the story.
	30	Skills
1-29-04	20	Students completed a map with everything complete except the major categories and questions.
	30	Skills
1-30-04	50	Assessment of basal vocabulary and story comprehension with quiz on T-CaPS MaP where students define categories by stating questions.

Week 3	Minutes	Activities
2-2-04	10	Teacher introduced basal vocabulary and background of the story.
	5	Teacher completed the titles of each of the categories on a blank template with the T-CaPS MaP.
	10	Teacher lead students orally through the process of mapping the basal vocabulary.
	30	Story read orally by both teacher and students.
2-3-04	15	Reviewed basal vocabulary and background of the story.
	35	Extended the T-CaPS MaP by completing categories from the basic template and checked for accuracy.
2-4-04	20	Reviewed T-CaPS MaP for any additions that would make the map more descriptive of the story.
	30	Skills
2-5-04	20	Students completed a map with everything complete except the major categories and questions.
	30	Skills
2-6-04	50	Assessment of basal vocabulary and story comprehension with quiz on T-CaPS MaP where students define categories by stating questions.

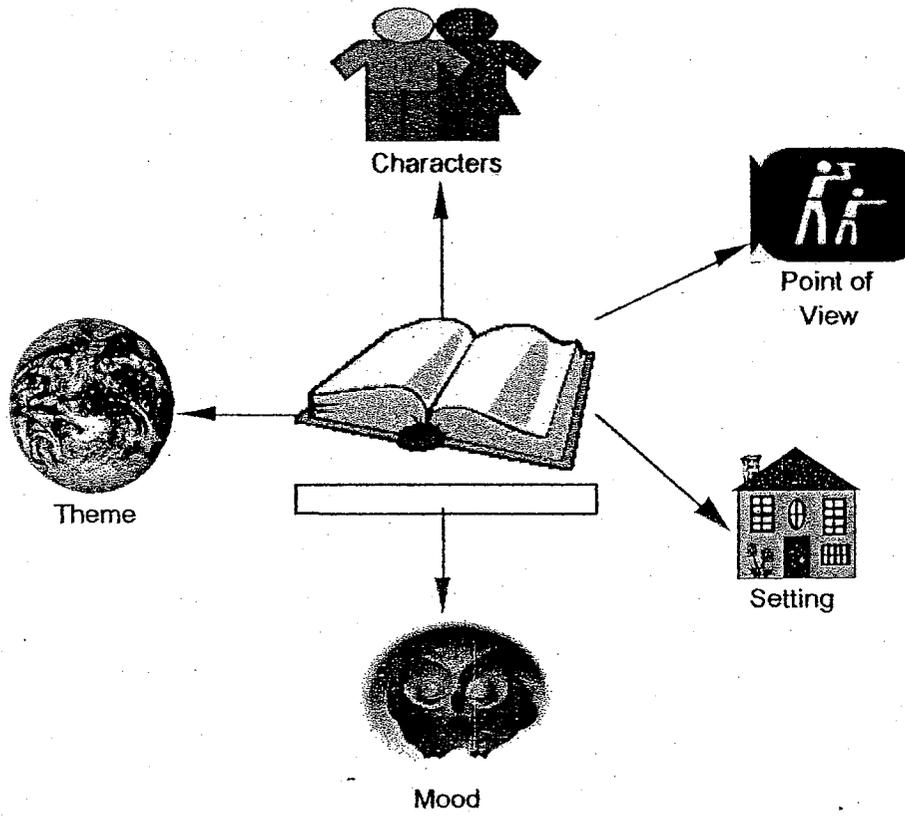
Week 4	Minutes	Activities
2-9-04	10	Teacher introduced basal vocabulary and background of the story.
	5	Teacher completed the titles of each of the categories on a blank template with the T-CaPS MaP.
	10	Teacher lead students orally through the process of mapping the basal vocabulary.
	30	Story read orally by both teacher and students.
2-10-04	15	Reviewed basal vocabulary and background of the story.
	35	Extended the T-CaPS MaP by completing categories from the basic template and checked for accuracy.
2-11-04	20	Reviewed T-CaPS MaP for any additions that would make the map more descriptive of the story.
	30	Skills
2-12-04	20	Students completed a map with vocabulary words, the major categories and questions.
	30	Skills
2-13-04	50	Assessment of basal vocabulary and story comprehension with quiz on T-CaPS MaP where students put category names and questions.

Week 5	Minutes	Activities
2-16-04	10	Teacher introduced basal vocabulary and background of the story.
	5	Students completed the T-CapS MaP with categories and questions.
	10	Students mapped the basal vocabulary using prior knowledge and prediction skills.
	30	Story read silently by the students.
2-17-04	15	Reviewed basal vocabulary and background of the story.
	35	Extended the T-CaPS MaP by completing categories from the basic template and checked for accuracy.
2-18-04	20	Reviewed T-CaPS MaP for any additions that would make the map more descriptive of the story.
	30	Skills
2-19-04	20	Students completed a map with vocabulary words, the major categories and questions.
	30	Skills
2-20-04	50	Assessment of basal vocabulary and story comprehension with quiz on T-CaPS MaP where students put category names and questions.

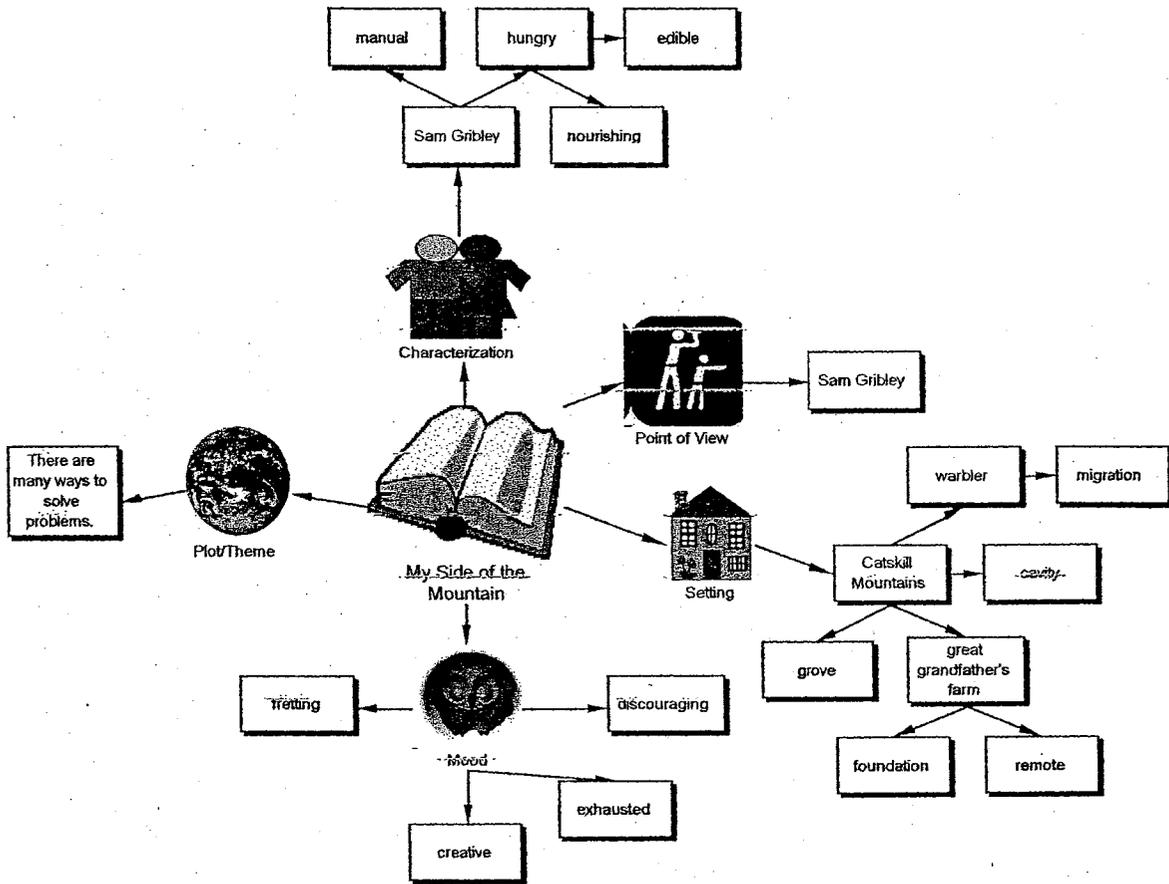
Week 6	Minutes	Activities
2-23-04	10	Teacher introduced basal vocabulary and background of the story.
	5	Teacher completed the titles of each of the categories on a blank template with the T-CaPS MaP.
	10	Students mapped the basal vocabulary using prior knowledge and prediction skills.
	30	Story read silently by the students.
2-24-04	15	Reviewed basal vocabulary and background of the story.
	35	Extended the T-CaPS MaP by completing categories from the basic template and checked for accuracy.
2-25-04	20	Reviewed T-CaPS MaP for any additions that would make the map more descriptive of the story.
	30	Skills
2-26-04	20	Students used a scavenger hunt activity to find other words in the story and place them in the T-CaPS MaP.
	30	Skills
2-20-04	50	Assessment of basal vocabulary and story comprehension with quiz on T-CaPS MaP where students put the vocabulary words in the correct category of the T-CaPS MaP.

March 1-3, 2004. Students were given Harcourt Posttest and Gates-MacGinitie Posttest.

APPENDIX J
T-CaPS MaP TEMPLATE/EXAMPLE



T-CaP MaPS TEMPLATE



T-CaP MaPS EXAMPLE

VITA

Lynn Morris is currently the Reading First Coordinator for Monroe City School System. In this position, she coordinates the implementation of the Reading First grant, part of the No Child Left Behind law, and acts as a liaison between the State Department of Education and the Monroe City School District. This grant provides assistance to low performing schools, some of which are in corrective action, to assist with reading instruction to students in grades K-3. Prior to this position, she taught elementary and secondary reading methods, reading diagnosis and practicum, early childhood methods, classroom management, and supervision of student teachers at the University of Louisiana at Monroe for sixteen years. For eight years she has been a trainer for the Louisiana Teachers Assistance and Assessment Program. She taught Preschool and 7th grade Reading/Language Arts in the Caldwell Parish School System. She received a Bachelor Arts in Elementary Education from Northeast LA University in 1985 and a Master of Education from Northeast Louisiana University in 1990. She received her Doctorate of Education in Curriculum and Instruction with a cognate in Reading from Louisiana Tech University, part of the Louisiana Education Consortium (Grambling State University, Louisiana Tech University, and University of Louisiana at Monroe) in 2005.