

CHAPTER ONE

INTRODUCTION

The overall purpose of this mixed method research design was to examine whether teachers in a large urban Midwestern district used Thinking Maps® (Appendix A) with students in elementary school general education and special education classrooms. In addition, this study examined the use of Thinking Maps® with boys in three elementary classrooms: one-second grade, one fourth grade, and one classroom for the learning disabled. Students' attitudes and comprehension toward reading with respect to the district's core reading program and literature read-alouds was the focus. Utilizing Thinking Maps® yielded important information about strategies to promote reading comprehension and motivation to read in urban elementary school males.

Obtaining meaning from text is the ultimate goal of the reading process. For several decades, reading comprehension has been viewed as an “active process in which readers interpret the text in accordance with what is already known about the topic,” (Pearson & Johnson, 1978). Activating background knowledge to help readers connect the dots between what they know and what they are learning becomes vital to obtaining meaning from text (Dochy, Segers, & Buehl, 1999). The RAND Reading Study Group (2002) defined reading comprehension as:

The process of simultaneously extracting and constructing meaning through interaction and involvement with written language. The words extracting and constructing are used to emphasize both the importance and the insufficiency of

the text as a determinant of reading comprehension. Comprehension entails three elements the reader who is doing the comprehending, the text that is to be comprehended, and the activity in which comprehension is a part (p. 9).

Cramer (2004) defines comprehension in three parts: a) an active search for meaning, b) the cognitive connection, and c) prior knowledge, schemata, and the construction of meaning (p. 289). Pressley, Wharton-McDonald, Mistretta-Hampston, and Echevarria (1998) cited overwhelming evidence that upper grade elementary students can be taught to use comprehension strategies with significant improvement in understanding written text following instruction.

Background

Thinking Maps® are described by the author as a common visual language (Hyerle, 1993). Training and implementation of Thinking Maps® within the district began in 2005 as a common strategy to improve cognitive processing across all grade levels and academic disciplines. An administrator from the bilingual department in the school district was trained in Thinking Maps® and offered a one-day workshop based on what he learned from his training. This administrator shared his enthusiasm with others in the district so in March of 2006; the special education department sent eight district itinerant personnel and one administrator to a Train-the-Trainer series sponsored by the county. An endorsed national consultant from the Thinking Maps ® Corporation conducted the five-day series. By April of 2006, the one administrator began coordinating a series of workshops over the next two years for special education and general education personnel. The staff development was conducted by the eight trainers within the

Midwestern district used in this study. Additionally, the national consultant came to the district at least once to present Thinking Maps® training to administrators, itinerant personnel, and both general and special education teachers. The district's special education department invested thousands of dollars in staff development of Thinking Maps® training for approximately four hundred educational personnel to enhance students' academic achievement.

The maps are often compared to graphic organizers because they are visual spatial tools. However, they differ in many ways. One of the key differences is that there are only eight prescriptive maps as compared to potentially hundreds or more graphic organizers. Each thinking map has a specific name that corresponds to a thinking process. They are used as a common visual language throughout a school community or classroom. Developed in 1993 by Dr. David Hyerle, Thinking Maps® represent eight common visual teaching tools that are linked to eight fundamental thinking processes. Several schools across the southeastern United States have adopted Thinking Maps® for school wide implementation in grades kindergarten through high school (Hyerle, 2000). The purpose of the program is to use Thinking Maps® as a common visual language in a learning community for transferring thinking processes, integrating learning, and for continuously assessing progress (Hyerle, 1995). It purports to improve thinking skills and student academic performance across the content areas.

Significance of the Study

New instructional programs and strategies are being implemented continuously in urban school districts with the purpose of increasing academic achievement. Many claim

to be rooted in scientifically based research, which may cause some stakeholders, administrators, educational leaders, and teachers to believe these programs are panaceas that will reverse plummeting high stakes reading, writing, and math achievement scores. As educational practitioners and administrators grapple with the challenges of meeting the mandates of the No Child Left Behind Act of 2001 (NCLB), the constant stream of new programs and interventions becomes quite inviting to teachers seeking to improve students' level of achievement. Teachers must become more effective in developing the skills needed to recognize scientifically based practices and identifying effective programs. Proficiency in selecting appropriate research based practices, interventions, and strategies that advance achievement and improve critical thinking skills is significant to student success in the 21st century. Researcher Keith Stanovich (2003) stated that if “teachers continue to adopt a policy of anything goes mentality..., it provides a fertile environment for gurus to sell untested educational ‘remedies’ that are not supported by an established research base” (p. 4).

Teachers must develop an awareness of strategies and literary works that facilitate reading among boys. William S. Pollack, who heads the Center for Men and Young Men, noted that boys put words together and read on average “six months to a year later than girls...reading scores offer the clearest sign of disparity between the genders” (p. 18A). He suggested boys struggle more in elementary school, are more prone to frustration, and less likely to seek higher education (Hodges, 2005, p. 18A). The use of Thinking Maps® may yield important information about strategies to promote reading comprehension and motivation to read for urban elementary school males. Therefore, this study while

examining both males and females within their elementary general education and special education classrooms will specifically focus on the boys in order to glean instructional insights relative to urban males.

This study is specifically significant for a district, where such components as leveled libraries, direct instruction, and systematic phonics, are used to teach a major portion of the district's approximately 95,000 students as of the 2008-2009 school year. Data from the 2009 National Assessment of Educational Progress (NAEP), in the state where the district is located, indicated that fourth and eighth graders scored among the lowest in the nation in reading. Statistics revealed 80% of grade four and over two thirds of grade eight African American males within the state, scored below a basic level in reading. The NAEP also indicated that nearly two thirds of black male students in grades 4 and 8 scored eight points fewer than their female counterparts and lower than white students by 30 points. The Council of Great City Schools, the only national organization that represents the needs of public schools, conducted an extensive study in 2008 (<http://www.cgcs.org/>) on reforming and improving schools within the district. Data analysis from the district's 2007 statewide-standardized assessment revealed the following results in English Language Arts.

- Students' scores declined in every grade level tested except grade 3 of students tested between 2005 and 2007 for English Language Arts (reading and writing).
- The reading achievement gaps between the district and statewide scores ranged

from approximately 14 percentage points in grade three to 33 percentage points in grade seven.

- Sixty-five percent of the district's fourth graders scored at a proficient level or above compared to 84% statewide.
- The proportion of fifth grade students' reading proficiency dropped to 57% compared to 82% statewide.
- Writing scores declined significantly between 2005 and 2007; only in grade seven did scores improve.
- Sixty-six percent of African Americans scored at or above proficiency levels in English Language Arts.
- The achievement gap between students with disabilities and those without disabilities in English Language Arts ranged from 30 to 37%.
- Fifth grade African American students scored 10 % lower than the total of third graders.

The district's state standardized test results revealed scores for elementary students to be below 50% in some skill areas of reading and writing. The following grade level content expectation skill areas are among those cited as high priority district data from the fall of 2007:

- Identifying character feelings
- Identifying similarities between characters (across text)
- Revising for details (improving sequence)
- Using context to determine word meaning

- Identifying character's motivation and actions
- Identifying genre for a piece of writing
- Identifying details related to cause and effect

In an October, 2005 newspaper article, a professor and researcher in the Urban Affairs Programs at the state's largest university stated that a disproportionate number of African Americans in the state, especially African Americans within its biggest city, live below the poverty line. During this time period, one-third of its residents including nearly one-half of the city's children, (48%), lived below the official federal poverty level (<http://factfinder.census.gov>). Poverty is the top factor affecting educational achievement. According to figures released by the United States Census Bureau (2007), the urban public school district referenced in this study is located in America's poorest big city. The school district, of which 88% is African American, has lost more than 50,000 students in the last five years. Two-thirds of the families within the school district have either moved out of the city or placed their children in charter schools. In 2007, this state was the only state whose poverty level grew. The number of students receiving federal free and reduced price lunches (82%) provides a bleak picture of the city's school poverty level. In 2003 the "percentage of students on free or reduced cost lunch was 68.4 percent. By the 2006-2007 school year, that percentage had risen to almost 80 percent" (Michigan State University Education Policy Center, 2008). The high percentage of citizens living below the poverty line in the city could impact parent and student literacy as well as the availability of reading materials in the home. Systemic changes within the district must be made to help students overcome illiteracy.

A notable mention about the district is that despite its challenges, it boasted of having four of the best public high schools in America, according to U.S. News and World Report (2009). In 2008, the district led the state in the number of National Achievement Scholarship winners.

Teachers make a difference in what supplemental reading students will receive in addition to the core curriculum reading program. They have a responsibility to provide literary choices to supplement the core program, Open Court Reading which is the district's adopted reading program for grades K-6 students. It is a research-based basal series which aligns itself with the essential components of reading set forth by No Child Left Behind. Students are exposed to narrative and expository selections within the same unit's from kindergarten through sixth grade with each featuring a central theme, for example, Mysteries of Medicine, Fossils, and Things That Go. A list of book titles is provided to students and parents on each grade level for additional reading; however, there is no annotated bibliography to accompany the list. Teachers have no way of knowing if any of the books listed depict positive images of African American characters and themes. Yet, it is crucial that students have regular opportunities to hear and read authentic rich African American children's literature.

Research Questions

The purpose of this mixed research design study, approved by Oakland University's Institutional Review Board (Appendix B), was to examine whether teachers in a large Midwestern urban public school district were utilizing Thinking Maps® with

students in two elementary school general education classrooms and one special education classroom. The following questions were central to this study.

1. What are teachers' perceptions of their use of Thinking Maps® following district training?
2. How do Thinking Maps® influence attitudes and comprehension towards reading of urban male students in two elementary school general education classrooms?
3. How do Thinking Maps® influence attitudes and comprehension towards reading of urban male students in an elementary school special education classroom?

Mixed Design and Methodology

A mixed research design approach was used to examine the effectiveness of Thinking Maps®. According to McMillan (2004), a mixed method study is one in which “both quantitative and qualitative approaches to gathering, interpreting, and reporting data are used together in a single study” (p. 288). Triangulation for the qualitative portion of the design allows the researcher to provide a more comprehensive picture of the phenomena being studied. Analysis and data gathering is not limited to one type. The strengths of each method offset the weaknesses of the other method so that together they provide a more complete set of data (McMillan, 2004, p. 289).

Quantitative Aspects of this Mixed Design

Quantitative data were obtained from a researcher developed Survey of Teachers' Perceptions of Thinking Maps (Appendix C) administered to 105 general education,

special education, and itinerant personnel who received Thinking Maps® training in the district from November 2005 through December 2008. The survey used to gather quantitative data was designed in the form of a four-page booklet with demographic information required on the front, ten multiple choice questions about teacher perceptions of Thinking Maps®, and a section for comments on the back. Each survey was completed anonymously. This data enabled a descriptive analysis of teachers' perceptions of their use of Thinking Maps® following training which provided the response to Research Question One.

Consent letters and notices for the quantitative portion of the study adhered to a four phase process as recommended by Salant and Dillman (1994). The first mail-out was a short Advanced-Notice Post Card (Appendix D) to all members of the sample. The second mail-out, one week later included the *Survey of Teachers' Perceptions of Thinking Maps®*, the Consent Letter (Appendix E) and a preaddressed return envelope with postage. The third mail-out was the Reminder Notice (Appendix F) to all members of the sample and this was sent four to eight days after the *Survey*. A fourth mailout consisted of a Personalized Cover Letter (Appendix G) and a preaddressed return envelope with postage that was sent to all non-respondents. All mailings were sent via U.S. mail to each respondent's worksite.

Qualitative Aspects of this Mixed Design Study

The qualitative aspect of this study involved an in-depth analysis of how Thinking Maps® were used to facilitate comprehension of multiple texts inclusive of genres from the core basal reading program along with literature read alouds. Participants in the

qualitative portion of this study were students in both general and special education within two elementary schools in the district. General education students from one second-grade classroom and one fourth-grade classroom were studied to answer Research Question Two. One special education classroom for the learning disabled was studied to answer Research Question Three. Elementary urban males were the focal point for the qualitative portion of this study; however, all students in each classroom both male and female, benefited from receiving the literature books and Thinking Maps® instruction. The teachers were chosen using a purposeful sampling from the group of those surveyed in the quantitative portion of the study. A purposeful sampling is described as the selection of participants or cases that are particularly informative with respect to the purposes of the study (Creswell, 2003; Gall, Gall, & Borg, 1996; McMillan, 2004). Research consent letters were sent to parents (Appendix H) teachers (Appendix I), and students (Appendix J) requesting permission for participation in this study. Additionally, a *Student Publicity Release and Authorization* form was signed by every parent or guardian of each student participant involved in the study (Appendix K).

Multiple Thinking Maps® were generated prior to, during and/or after listening to read alouds of African American children's literature to determine if students were using Thinking Maps® to facilitate meaning. The *Selected Approved Children's Literature Books* (Appendix L) for this study were approved by the district's Supervisor for Library Media Specialists and the Executive Director for the Department of Literacy. With respect to the developmental appropriateness of the children, the literature was intended to actively engage students with text through meaningful dialogue and personally

relevant character building questions. The selected literary works contained positive male and female characters that had the potential to motivate and encourage all students, especially urban males, to achieve their personal best. Books chosen for read alouds were based on the genre and theme from *Open Court Reading* was the focus within a specific Unit. At the conclusion of the study, each teacher received fourteen new African American children's literature books to add to their classroom library. Each student received a new hardcover African American children's literature book to take home made possible by a grant written by this researcher. Among the criteria used for qualitative research as outlined by McMillan (2004), is studying the phenomenon (Thinking Maps®) within context (the elementary classroom) as it occurs naturally. Context is crucial in interpreting how males responded to Thinking Maps®.

Teacher developed comprehension questions utilized Cramer's (2004) methods of inquiry before, during, and after reading to extend thinking beyond the text. Teachers asked:

- two explicit questions to obtain literal information
- two implicit questions which require interpretation of literal information to solicit information not stated directly
- two word meaning questions which will involve a specific word and the other will focus on vocabulary that may be open to interpretation

Factual, inferential, and vocabulary questions were used to query students about each selection. Two explicit questions were developed to obtain literal information; two implicit questions were asked which required an interpretation of literal information to

solicit from the text information not stated directly. One of the final two word meaning questions involved a specific word and the final question focused on vocabulary that may be open to interpretation.

The qualitative portion of this study was conducted from February 2009 through June 2009. Data collection of male students was extensive, drawing upon multiple sources of information which consisted of: (a) observational fieldnotes recorded in a journal and on a digital recorder, (b) interviews of teachers and male students, (c) audio-cassette and digital taped recordings to back up interviews, and (d) an attitude survey. Students' samples of Thinking Maps®, which were hand-drawn to facilitate understanding of the text, were also examined. The researcher's fieldnotes documented her ongoing observations of male students through time spent as an "outsider," then subsequently as a participant observer. The participant-observer role is when the researcher enters the research setting to observe and interacts closely enough to gather data (Gall, Gall, & Borg, 1996, p. 345). Semi-structured interviews of each teacher in the study began with survey questions and then probed more deeply to obtain additional information about the use of Thinking Maps® (Appendix M). Informal conversational interviews were conducted with teachers and male students about the Thinking Maps® program using a digital recorder and an audiocassette recorder. According to Gall, Gall, and Borg (1996), informal conversational interviews in qualitative research involve formulation of questions on the spot based on the interviewer's observation of relevant characteristics of each respondent (e.g. talkativeness). The researcher maintained a

journal during the research study. Exit interviews (Appendix N) were conducted with 27 of 30 male students at the conclusion of the study.

The (ERAS) Elementary Reading Attitude Survey (Appendix O) developed by Michael McKenna and Dennis Kear (1990), was administered to examine attitudes about academic and recreational reading prior to and after the study was conducted to examine students' attitudes about reading. Each question was read aloud twice to students. The students responded to each question by circling one of four Garfield cartoon figures to describe their feelings about reading. The "Garfield" figure on the far left is the happiest, the second Garfield is a little happy, the third Garfield is a little upset, and the last Garfield in the row is very upset.

Definitions

Thinking Maps® makes use of eight specific graphic designs each representing a fundamental thinking process (Appendix A). According to Hyerle (1993), the eight maps are:

- The Circle Map (Figure A1) is used for brainstorming and defining ideas in context. This visual tool enables students to generate and identify relevant contextual information or a topic written in the center of the circle. It is useful for accessing prior knowledge.
- The Bubble Map (Figure A2) is designed for describing a topic using adjectives or adjective phrases.
- The Double Bubble Map (Figure A3) is designed to compare and contrast two things.

- The Tree Map (Figure A4) is used for classifying according to categories and the specific details and items within the categories.
- The Brace Map (Figure A5) is designed to show part to whole relationships of physical tangible objects.
- The Flow Map (Figure A6) allows students to represent sequencing of events, cycles, actions, directions, and processes in major stages and sub-stages.
- The Multi-Flow Map (Figure A7) is used to show cause and effect relationships.
- The Bridge Map (Figure A8) helps students to understand related factors within analogies.

Thinking Maps® are presented as grounded in brain-based learning and are linked to classroom practice (<http://www.mapthemind.com/reserch/html>). They provide a way to deliver content knowledge and facilitate the thinking of students, to assess prior knowledge and determine what and how students have learned. The maps offer a means of constructing knowledge by forming patterns of information, for transferring their thinking processes to content learning and for facilitating metacognition. According to Hyerle and Yeager (2007), Thinking Maps® improve students' performance on state assessments and provide some data for those claims.

Limitations

Multiple revisions, deletions, and proposal submissions were required by the district's Office of Research, Evaluation, and Assessment that took one year and a half. The initial proposal to conduct research was submitted in August of 2007 and final

approval was not granted until February of 2009. During this time period, district wide changes inclusive of school closures due to declining student enrollment impacted educational personnel who were trained in Thinking Maps®. Due to lay-offs, terminations, and retirements, the number of participants in the quantitative portion of the study was significantly reduced. This made it difficult for the researcher to track potential participants to their specific work locations in order to survey their perceptions of Thinking Maps®. Additionally, the researcher was prohibited by the district from surveying administrators who were also trained to use Thinking Maps®. Another limitation involved the timing of the study. Starting the study in the second semester of the school year impacted the results of the attitude survey in the qualitative portion. Students were already exposed to Thinking Maps® during the first semester; therefore, preventing the researcher from making a more comprehensive comparative analysis into the influence of Thinking Maps® on attitudinal changes towards reading.

The researcher was restricted by the district from reviewing academic records or administering pre and posttests with standardized testing instruments. Obtaining numerical data on boys' listening and/or reading comprehension would have contributed additional information on the impact of Thinking Maps®.

Summary of Chapter One

In conclusion, a study was conducted to examine the effectiveness of a new instructional strategy introduced to teachers in a large urban Midwestern district entitled Thinking Maps®. These maps represent eight common visual teaching tools that are linked to eight fundamental thinking processes which purport to improve cognitive skills

and academic performance across all content areas. The study focused on the impact this strategy had on attitudes and comprehension towards reading of urban elementary school males when used with the core basal program and African American children's read alouds. Quantitative data were gathered from 105 general education, special education, and itinerant personnel who completed a ten question multiple-choice survey. The qualitative portion of the study was conducted in two elementary schools with students from both general and special education classrooms selected through purposeful sampling. While both boys and girls benefited from the instructional aspects of this study, it was the 30 boys from the three classes that were the researcher's focus for the investigation. The data from this study was used to determine perceived influences of Thinking Maps® as a visual tool to aid teaching, thinking, and learning. The results are useful in providing insight into best practices for classroom instruction with general and special education students as well as future planning of professional development for teachers and other educational personnel. The mixed research design involved both qualitative and quantitative measures that determined how teachers used Thinking Maps® to facilitate comprehension. This study yielded significant information about strategies to promote reading comprehension and motivation to read in urban elementary school males.

CHAPTER TWO

REVIEW OF LITERATURE

This mixed research design study explored teachers' perceptions of their use of Thinking Maps® in a large urban Midwestern district and how classroom use of this strategy influenced attitudes and comprehension of elementary school males. This chapter examines relevant literature that consisted of the following: graphic organizers and their impact on meaning acquisition, an overview of Thinking Maps® including research on its effectiveness, comprehension development with read alouds, engaging boys with literature, and an overview of the core-reading program used in the district, *Open Court Reading*.

Graphic Organizers

This section examines literature on the history of graphic organizers, how they support comprehension, and assist struggling learners. The benefits of using computer assisted graphic organizers and its impact on motivation to read is also discussed.

History of Graphic Organizers

Graphic organizers have been widely used in classrooms as instructional tools in virtually every subject. They have been used to facilitate learning in reading, writing, science, math, and social studies. Incorporating graphic organizers into the curriculum supports students and teachers by providing a meaningful framework for relating existing

knowledge to new information (Kim, Vaughn, Wanzek & Wei, 2004). The graphic organizer is a descendent of Ausubel's advance organizer. Ausubel speculated that a learner's existing knowledge, termed as cognitive structures, influences learning.

According to Ausubel (1968):

It is possible in situations in which the learner's cognitive structure may be inadequate to provide relevant anchoring of concepts prior to learning. By appropriately providing relevant and inclusive introductory material in advance of learning will serve to provide ideational scaffolding for the stable incorporation and retention of the more detailed and differentiated material that follows (p. 148).

Robinson, Katayama, Dubois, and DeVaney's, (1998) review of literature revealed a graphic display or "Structured Overview" of words showing a hierarchical organization of important concepts that would improve students' understanding more than a written paragraph. Advance organizers were an aid to students in learning new material by previewing information to be learned. Graphic organizers are defined as visual and spatial displays designed to facilitate the teaching and learning of textual material through the "use of lines, arrows, and a spatial arrangement that describe text content, structure, and key conceptual relationships" (Darch & Eaves, 1986, p. 310). They have also been described as "spatial metaphors that indicate relationships among concepts in a node-link-node visual display. Nodes contain the key concepts and links depict unspecified relationships between nodes (Anderson, 1990; Jonassen, Beissner, & Yacci, 1993).

There are many types of graphic organizers identified in sometimes interchangeable terms such as concept webbing, concept maps, mind maps, semantic organizers (Bos & Anders, 1990, 1992); and cognitive maps using mnemonics (Boyle & Weishaar, 1997). These visual representations gained popularity in the 1970s and 1980s by assisting students in organizing their knowledge; encouraging divergent thinking, improving problem-solving abilities, and stimulating higher order thinking skills.

Graphic Organizers Support Comprehension

John Dewey and Piaget emphasized active engagement of students in their own learning. Bos, Anders, Filip, and Jaffe, (1985) found graphic organizers to be some of the most effective strategies to assist students in becoming active learners through acquiring new learning and understanding existing knowledge. When teaching comprehension they are useful in teaching all levels of Bloom's cognitive taxonomy inclusive of analyzing, synthesizing, and evaluating new information by organizing knowledge. They assist in helping students connect to prior knowledge which aids in understanding new ideas and concepts.

Paivio (1971, 1991) developed the theory of dual-coding for learning which supports the understanding and implications for using graphic organizers in improving reading comprehension. It assumes that memory consists of two separate, but interrelated systems for information processing. One is verbal and the other is non-verbal. Some researchers refer to the systems as linguistic and non-linguistic. The verbal system processes and stores linguistic information as words and sentences and the visual system

processes images represented by images in memory. Even though they can be activated independently, there are connections between these systems that allow for dual coding of information. Proponents of this theory posit that dual coded information is much easier to retain and retrieve because of the availability of two mental representations (verbal and visual) as opposed to one. Marzano, Pickering, and Pollock, (2001) indicated that graphic organizers “enhance the development of nonlinguistic representations in students and therefore enhance their development of that content” (p.73). He also stated that the more both forms are used, the better we are able to think about and recall information. Dual coding theory “accounts for the empirical evidence regarding reading comprehension, memory for what was read, and the aesthetic and thematic phenomena than do most current theories” (Sadowski & Paivio, 1993, p. 598). Graphic organizers provide visual images which link to verbal information. Combining linguistic with non-linguistic representations of what is to be learned enhances cognitive development and comprehension.

Moore and Readance’s (1984) meta-analysis of 23 different graphic organizer studies found that when graphic organizers were used as a follow-up to reading there were somewhat larger improvements in the learning outcomes. The studies evidenced gains in vocabulary knowledge greater than comprehension with the mean effect being more than twice as large. Results support the educational benefits when students create their own maps to reflect on and demonstrate their own knowledge.

Pressley, Wharton-McDonald, Mistretta-Hampston, and Echevarria (1998) indicated that evidence is overwhelming that upper grade elementary students can be

taught to use comprehension strategies with significant improvement in understanding written text following instruction. Reading comprehension is dependent on fluency, vocabulary development, and accessing prior knowledge and can be facilitated by the use of graphic organizers. Graphic organizers can be used as a pre-reading, during reading, or post-reading activity to highlight important concepts and summarize what was read.

According to Kirylo and Millet (2000):

The construction of graphic organizers is designed to activate a reader's prior knowledge, prepare students to understand, assimilate, and evaluate new information read, and to facilitate comprehension of text. As opposed to an instructional methodology that is teacher directed with a notable reliance on worksheets, rote learning, and minimal interaction with students, graphic organizers can be a useful tool to teach comprehension in a meaningful way during basal reading instruction (p. 182).

McCoy and Geller (2004) conducted a study to examine the effects of using concept based instruction on student understanding and retention of text material. Two classrooms were chosen with students who performed between the third and 98th percentile on a statewide standardized assessment of reading with an approximate equal distribution across classes. One classroom taught structured lessons in a traditional lecture format and the other classroom incorporated graphic organizers to teach content as an organizational strategy using the same textbook. Students presented with a concept based approach using graphic organizers performed much better on the open-ended

assessments that required them to illustrate the concepts. They also performed better on the reiteration test which showed consistent improvement in higher order thinking skills.

Graphic Organizers Assist Struggling Learners

Reading instruction gradually shifts away from decoding and learning how to read to comprehending text that is more complex. The complications some students experience may account for reading problems of the learning disabled. A deficiency in reading skills is the primary reason why students are referred to special education. According to the International Dyslexia Association, 15-20% of the population has a language-based learning disability and between 70-80% of people with poor reading difficulties are likely to be dyslexic (<http://www.interdys.org>).

It is a challenge for struggling learners to navigate through the user-unfriendly content-area textbooks. Mastropieri, Scruggs, and Graetz (2003) concluded from their research that textbooks are not reader friendly and that they are “inconsistently organized from chapter to chapter, lack good structure, provide insufficient definitions of essential vocabulary, and require inappropriate skill demands on learners” (p.103). As students progress through school, reading increasingly involves expository text that is more information driven. Students with reading problems are challenged by the academic domains of reading and interpreting the expository text (Bryant, Ugel, Hamff, Vaughn, Linan-Thompson, Hougen, 2000). When students arrive in class reading below grade level whether as a result of learning disabilities, language barriers, or low skill areas, teachers are challenged to deliver content. Graphic organizers may be used to assist in delivering content and enable students to grasp reading concepts successfully. Students in

special education have even greater obstacles to overcome. Struggling readers can benefit from such strategies as graphic organizers to assist in learning expository text (Bos & Vaughn, 2002). Students with reading problems have difficulty organizing and recalling information. Researchers have found that these students possess strengths in spatial or visual concepts and may be more adept at performing nonverbal tasks (Kim et al., 2004). One may conclude that visual displays showing connections of key terms and concepts improve recall and organization.

Nine treatment comparison design studies by Bos and Anders (1992) indicated consistent findings for the effects of graphic organizers on reading comprehension. Students with learning disabilities who used graphic organizers demonstrated significantly higher scores on researcher developed comprehension measures than students in comparison groups who received instruction using the dictionary. In eight of the nine studies, large effect sizes were reported. Boyle (1996) examined mnemonics with graphic organizers and the effect on literal and inferential reading comprehension. Thirty (sixth through eighth grade) students with mild disabilities and poor reading comprehension were taught to independently create cognitive maps from reading passages. They were randomly assigned to an experimental and control condition. The experimental group was given instruction on independent development of cognitive mapping from reading passages using a mnemonic and the control group received no training. Comparison with a matched control group indicated that students who were taught the cognitive mapping strategy demonstrated substantial gains in both literal and inferential comprehension measures in below and on-grade level reading passages.

In another study conducted by Boyle and Weishaar (2000), students with learning disabilities were taught to generate graphic organizers for use during reading and the control group was taught to use expert generated organizers (commercially made). Students who created their own organizers scored significantly higher on the Stanford Diagnostic Comprehension Test on literal and inferential comprehension than their peers who utilized commercially made graphics.

A meta analysis was conducted (Kim et al., 2004) which examined relevant research studies between 1963 and June of 2001 on the effect graphic organizers had on reading comprehension for students with learning disabilities. Twenty-one intervention studies were reviewed over 40 years. Collectively 848 students with LD and 724 students without disabilities participated in the studies. Two studies included sixteen students with educable mental retardation. They concluded that all graphic organizers inclusive of semantic organizers, cognitive maps, and framed outlines, were associated with improved reading comprehension for these students with learning disabilities. Overall results from this meta analysis indicated the following:

The effects of graphic organizers on the reading comprehension of students with LD revealed overall beneficial outcomes across the studies and support the use of semantic organizers, cognitive maps with and without mnemonics, and framed outlines to promote these students' reading comprehension. Across the board, when the students were taught to use graphic organizers, large effect sizes were demonstrated on researcher developed reading comprehension post-tests (p.114).

Visual displays of information help LD students to organize verbal information and improve recall. However, it is important to note that none of the studies yielded significant results with standardized reading tests. The researchers concluded that participants made “significant gains in the comprehension of the content taught, but whether such gains would generalize to other independent reading situations and what part the graphic organizers played in this process are not clear” (Kim et al., 2004, p. 115).

Gajria, Jitendra, Sood, & Sacks, (2007), conducted a research synthesis of twenty-nine studies designed to improve the reading comprehension of expository text for students with learning disabilities. Interventions that were found to be the most effective were advance and graphic organizers, visual displays, mnemonic illustrations, and computer assisted instruction. The researchers concluded that in addition to summarization, cognitive mapping could be utilized to identify and visually represent main ideas to facilitate comprehension.

Research Studies on Computer Assisted Graphic Organizers

Computer based graphic organizers favorably impacted students’ motivation and engagement, which is particularly important for struggling learners. The underperforming learner benefit’s by the use of technology because it has the potential to increase intrinsic motivation as well as support literacy (Leu, 2000).

Ritchie and Gimenez (1995) conducted a study to compare the academic achievement scores of 68 English and Spanish fourth graders using computer generated graphic organizers as compared to those that were hand drawn. Additionally the researchers looked at whether the learner’s dominant language (Spanish or English)

influenced the effectiveness of graphic organizers. Thirty-one students were English speaking, while the remaining 37 were Spanish-speaking students. Four equivalent versions of the computer-based program were used with two in English and two in Spanish both with embedded graphic organizers. Results indicated that the use of programs containing embedded graphic organizers enhanced the short term and long-term recall of fourth grade students. Secondly, results indicated that dominant language differences do not significantly impact the effectiveness of programs with embedded graphic organizers.

Royer and Royer (2004) compared the use of paper and pencil and computer tools for creating concept maps. The authors conducted a one-year study for creating concept maps with two biology classes taught by the same teacher. They sought to answer two questions: a) Are concept maps created with computer software more complex than with hand-drawn tools? in addition, b) Do students prefer to use the computer or pencil/paper to create graphic organizers? One class of eight girls and sixteen boys was the control group and a second class served as a treatment group of thirteen girls and sixteen boys constituted the treatment group. Students in the treatment group were introduced to Inspiration (2002) software that was used in the media center. Results indicated that more students preferred to use the computer rather than paper and pencil and were able to create maps that were more complex. Students using the Inspiration program indicated that it had many more ideas on it, helped them develop their concept maps more completely, and was a lot neater and more organized. The students also explained that creating the maps helped them to “understand the concept better, remember more things,

find more relationships, and organize their thoughts” (Royer and Royer, 2004, p. 76). Differences in engagement were also noted throughout the duration of this study. The researchers noted that the students’ motivation to develop concept maps with Inspiration was greater. Not one student using paper/pencil opted to revise their maps; whereas, every student using Inspiration opened the computer file and continued to develop and revise concept maps.

Blankenship, Ayres, and Langone (2005) conducted a study with three 15-year-old students with behavior disorders from a suburban high school who demonstrated difficulty with reading in content area courses. They were served in a self-contained classroom for students needing behavioral supports in order to meet academic requirements. Each student learned to use Inspiration software to create cognitive maps of class reading material. They followed the general education curriculum that required use of a certain text. Key concepts were tested from the units and chapters that were separated and analyzed. As the chapters were read, students generated concept maps using the software. All students had a low knowledge level of the content prior to the intervention. All scored below 15% correct on the oral chapter quizzes. After introducing the intervention, all students successfully scored above 75% correct on all chapter tests. Students learned material independently from the computer based cognitive mapping strategy. The students frequently expressed how much they liked the program to help them read and that it helped them identify important information. They repeatedly asked to use the software to map the novels they read in their language arts class and were motivated to apply their skill to read and comprehend the material. Within the

intervention phase the amount of referrals to the office for aberrant behavior decreased and students were able to work independently.

A total of 49 tenth grade students were included in a study to examine students' attitudes and perceptions toward the use of Inspiration 6.0 software (Boon, Fore, & Rasheed, 2007). Of the forty-nine students who participated, 29 were in general education, 12 students were classified as Learning Disabled, and eight were designated as Emotionally Disturbed. The students were enrolled in two high school inclusive world history classes, in which one class used a guided note taking format and the other class received technology based instruction in counter balanced order. Both groups were taught using each format of instruction. The classrooms were staffed with a general education and a special education teacher. After the instruction, students had to complete a Likert scale satisfaction survey and asked to comment further on their experience using Inspiration software. Using both quantitative and qualitative analysis, the results were overwhelmingly in favor of using Inspiration software. The majority enjoyed using computers to develop graphic organizers. The student survey indicated that the special education students believed they learned more of the information with Inspiration 6.0 than with guided notes.

Students with disabilities were much more positive towards the use of the software. In fact, the majority of the 49 students revealed that they learned more world history when they used graphic organizers for studying. They also felt the software had the potential to be used across other content areas. Using computers to develop graphic organizers has motivational value by helping struggling students to focus on tasks that

they may not otherwise attempt to complete in a conventional format. When teachers employ computer assisted graphic organizers as a learning tool with students exhibiting behavior and learning problems, it could favorably impact classroom management and reduce referrals to special education.

Summary of Graphic Organizers

Graphic organizers activate prior knowledge from learners to assist in connecting to new knowledge. They provide a visual pathway for recording relevant information about a topic before, during, or after reading stories. They have been utilized to increase reading comprehension skills by assisting students in recognizing story elements such as character, setting, plot, and setting (Dimino, Taylor, & Gersten, 1995); organizing and sequencing story information (Pearson, 1985); and thinking skills (Rankin, 1999). Graphic organizers have been used successfully with struggling learners to enhance comprehension skills by organizing verbal information thereby improving recall.

Overview of Eight Thinking Maps®

Dr. David Hyerle developed Thinking Maps® in 1988 as a foundation for thinking and learning (Appendix A). He is the Director of Research and Development for Designs for Thinking. He is frequently an invited keynote speaker and author of two books published by the Association for Supervision and Curriculum Development (ASCD) *Visual Tools for Constructing Knowledge* (1996) that is in the hands of 160,000 educators worldwide, and *A Field Guide to Using Visual Tools* (2000) which documents the effectiveness of Thinking Maps®. Dr. Hyerle also co-wrote *Thinking Maps: A*

Language for Leadership (2006). The purpose of Thinking Maps® is to use them as a “common visual language” in a learning community for transferring thinking processes, integrating learning, and for continuously assessing progress across content areas (Hyerle, 1996). The thrust of this learning strategy is for students to utilize it across all academic content areas from kindergarten through high school and beyond. Hyerle became interested in using visual mapping tools during his time as a writing teacher at an urban middle school in Oakland, California. Students brainstormed their ideas and demonstrated their understanding of how to convey their thoughts using semantic mapping and webbing. He noted that they became confused about how to organize, analyze, and evaluate their visual representations and to transfer those ideas to writing. This lack of transfer left Hyerle questioning, “What happens to the brain after the storm?” (Hyerle, 1995). This led him to develop visual tools linked to the fundamental thinking processes of: (1) describing, (2) brainstorming, (3) comparing and contrasting, (4) recognizing analogous relationships, (5) cause and effect relationships, (6) sequencing, (7) categorizing and classifying, and (8) whole to part relationships. To date, schools in “39 states and five foreign countries have implemented Thinking Maps®” (Hyerle & Yeager, 2007).

Theoretical Underpinnings of Thinking Maps®

Hyerle was influenced by Dr. Albert Upton, a professor of English and Russian Literature at Whittier College in southern California. He used Upton’s model as a guide to develop Thinking Maps®. Dr. Upton wrote a theoretical text entitled *Design for*

Thinking (1941) which defined fundamental thinking processes based on cognitive psychology, semantics, and problem solving. Dr. Upton theorized that by subjecting individuals to a special “system” of instruction that improves analytical abilities it could increase human intelligence dramatically. According to Hechinger (1960), Dr. Upton exposed 280 freshmen at Whittier College to a model which teaches the relationship between words and things, entitled “Graded Exercises in Analysis” designed to improve basic analytical abilities. At the beginning of the experiment, students were administered a standard I.Q. test that revealed an average score of 109.5. After seven months of applying a scientific method to language and thought, average I.Q. scores increased by an average of 10.5 points and one student gained 32 points. Upton aimed at the expansion of human capacity to understand the analogy between an idea, a word, or metaphor of what one knows and an idea one wants to understand. This model served as a guide to Hyerle as he developed Thinking Maps® as visual tools for learning.

Teachers and students in pre-kindergarten through twelfth grade as well as in the business sector use the eight Thinking Maps® to increase skills in comprehension, writing, and thinking in all academic disciplines. When an entire school incorporates the same visual language into daily classroom activities, it offers continuous support as students move from one grade to another. Creating graphic representations of learning is rooted in Paivio’s (1971) “dual coding” theory of information storage. This theory postulates that knowledge is stored in a linguistic and imagery form transmitted as mental pictures. The more individuals use both nonlinguistic (imagery) and linguistic representations; the recall of knowledge is greater. Nonlinguistic representations

elaborate or add to knowledge. According to Gerlic and Jausovec (1999), by explicitly engaging students in the creation of nonlinguistic representations brain activity is stimulated and increased. Thinking Maps® are one way to help students generate nonlinguistic visual images to represent thinking processes. Each of the eight maps is linked to a fundamental cognitive skill such as comparing and contrasting, describing, cause and effect reasoning, analogous relationships, whole to part thinking, classifying and categorizing, defining in context, and sequencing. Individual U.S. school districts since 1990 as well as schools in New Zealand and Singapore (<http://www.mapthemind.com/thinkingmaps/thinkingmaps.html>) have used the whole school design.

Different from Graphic Organizers

Graphic organizers and Thinking Maps® are visual concrete patterns that are useful for teaching and assessment across the content areas. While they share many similarities, there are some fundamental differences between the two visual tools. In Hyerle (2007), the Double-Bubble Map (Figure 3) appears in the training manual and PowerPoint presentation used for staff development. It illustrates the similarities and differences between graphic organizers and Thinking Maps®. The outside circles detail the differences and the inside circles represent how they are alike. There are five key qualities of the eight Thinking Maps® in addition to their link to a fundamental cognitive process or thinking skill. Hyerle (2004) indicated that they are consistent, flexible, developmental, integrative, and reflective. They are consistent because whatever map is

selected it is the same design across all academic content areas. The maps are flexible because they can grow over time as new learning takes place.

Thinking Map® Samples Developed by the Researcher

The Circle Map (Hyerle, 1989) is a map utilized to define a concept within context. It can also be used to access the readers' prior knowledge about a given topic as well as represent new learning. It helps learners to connect prior experiences with new information. It is symbolized with a small circle inside a larger circle (Figure 1). The concept such as words, phrases, numbers, drawings, or other representation is placed within the small inside circle. The outside circle includes information about the central idea. Figure one depicts a Circle Map completed by the researcher that could be used to demonstrate for teachers how to use it to gather biographical information.

After the Circle Map is introduced and completed, a frame or square is drawn around the map. The frame is a metacognitive graphic that represents the following questions: a) what is my frame of reference; b) what influenced my responses, interpretations, or feelings about the given topic. Students can discuss the content of their frames to share different points of view. The frame of reference is considered the most powerful part of the map because it tells what or who influenced your responses or in essence, "where you are coming from." Items written in the frame are determined by one's cultural experiences, values, and belief systems. It is important to note that the frame of reference can be drawn around any of the maps, but is usually always used with a Circle Map.

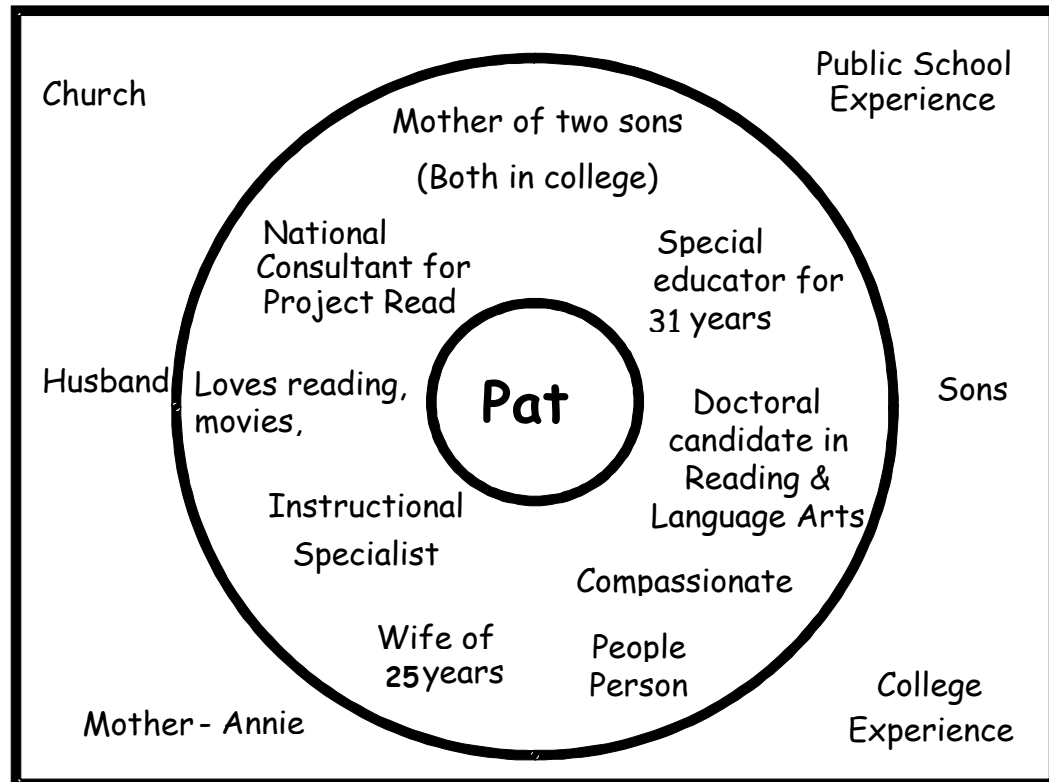


Figure 1. Circle Map developed by the researcher about herself.

The Bubble Map (Figure 2) is a visual tool for describing and identifying the traits of a given topic. Bubble Maps can easily be used to describe personality traits of characters in a story or attributes of any given topic across other academic content areas. This map is used only for the process of generating descriptive words (adjectives) and phrases about characters in a story, numbers, objects, etc. The describers or qualitative attributes about the topic are framed by the map creator's personal experiences and/or knowledge. The qualities can be emotional/aesthetic, factual, or opinions. Hyerle (1993) posits that the Bubble Map helps students to develop an awareness of the process of qualifying things which is essential for personal, interpersonal, and social growth.

The Double-Bubble Map is an extension of the Bubble Map in that the qualities of things are written inside circles. It is constructed using two separate Bubble Maps joined together. Each of the large circles contains different topics used for the purpose of comparing and contrasting (Hyerle, 1989). The outside circles detail the differences between the topics and the inside circles describe the similarities (Figure 3). In literature, it is often used to compare and contrast two characters, two selections by the same author, different versions of the same story, different settings, etc. Tree Maps are used for classifying and categorizing, an analytical skill needed for developing cognition and used for deductive or inductive classification (Hyerle, 1993, p. 140). It helps students see and organize relationships between groups of things. The Tree Map can be developed on a bulletin board or maintained in a student notebook for easy access when reading and writing to assist in acquiring vocabulary and conveying meaning from a

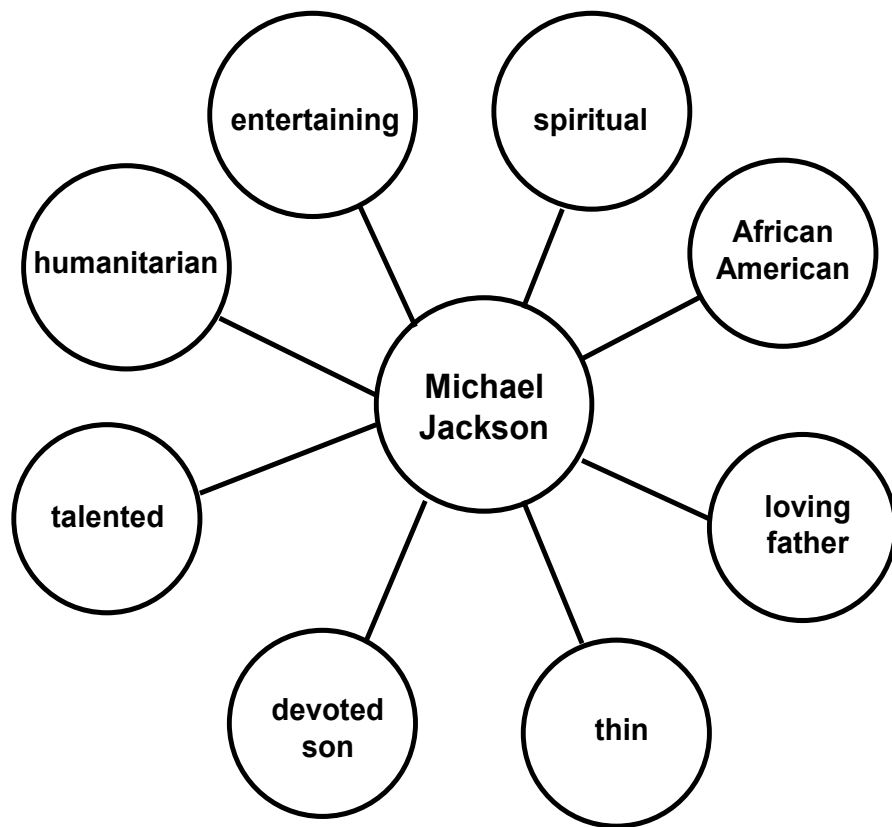


Figure 2. A Bubble Map describing entertainer, Michael Jackson.

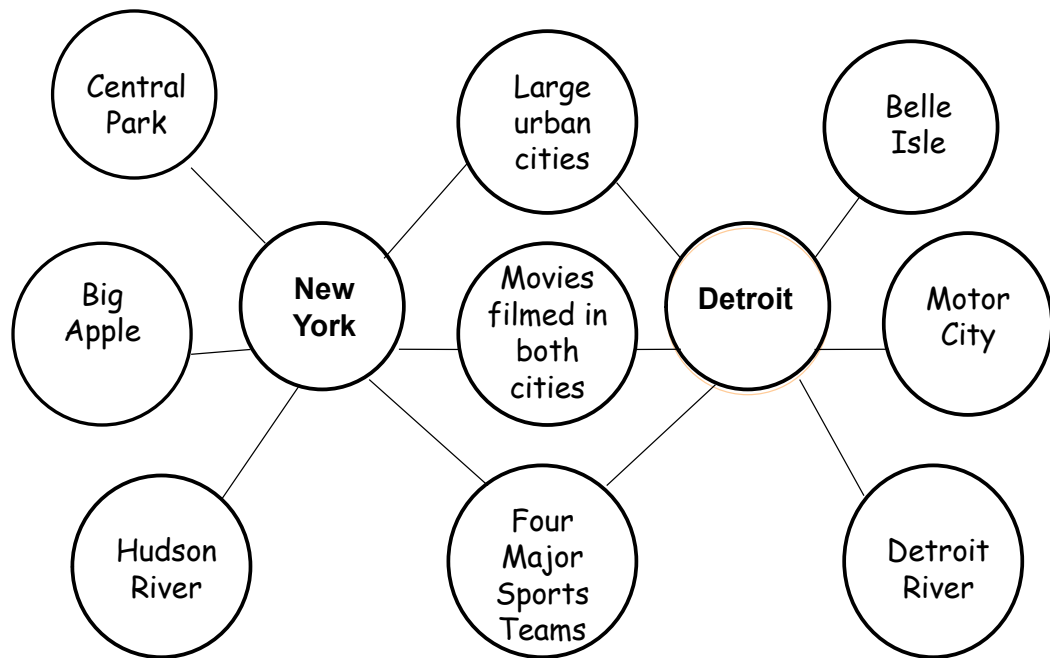


Figure 3. Double-Bubble Map comparing and contrasting New York to Detroit.

story. The Tree Map in Figure 4 is a graphic representation classifying details about President Barack Obama in the story *Barack* (Winter, 2008).

The Brace Map (Figure 5) is used for structural analysis of physical attributes of concrete objects. It can be also used to help students understand spatial relations from parts of a setting in a story, parts of a word, to the parts of a plant. It describes part to whole relationships. A Brace Map starts with a whole object identified on the left of the map, is broken down by its major parts, and sub-parts on the right. The brackets used in the Brace Map symbolize the equal = sign because the sub-parts can be added to

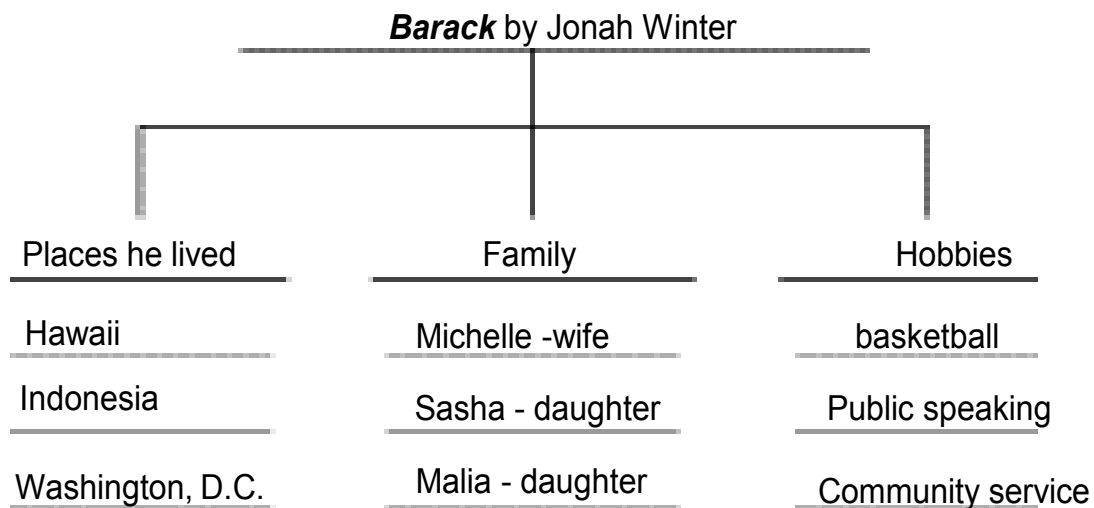


Figure 4. Tree Map detailing information on Barack Obama following a read-aloud.

complete the whole object. For example, when students listened to a story entitled *Doo Wop Pop* (Schotter & Collier, 2008) about a janitor in an elementary school, a Brace Map was used to help students tell more about the setting.

The Flow Map (Figure 6) is a series of rectangles with lines and arrows extending from left to right. It is used by students for sequencing, order, timelines, cycles, actions, steps, and directions (Hyerle, 2004). It is based on flow charts and helps to focus students on seeing the relationships between the stages and substages of events. In Figure 6, the researcher illustrated the sequence of legislative acts that impacted inclusion of students with disabilities in the United States. The smaller boxes under the large rectangle illustrate the substages or what is going on while the larger stage is taking place. This Flow Map was a slide developed and used by the researcher in a PowerPoint presentation on the laws governing inclusive practices of students with disabilities.

The Multi-Flow Map (Figure 7) analyzes cause and effect. In literature, it is a comprehension skill that is crucial in reading development and life in general. Payne (2003) quoted Reuven Feuerstein a clinical psychologist and Israeli educator regarding the need for students to have access to a story structure with cause and effect.

He posits that individuals in environments without routines and structure, consequence and sequence, cause and effect cannot plan. He stated the following:

If an individual cannot plan, he or she cannot predict.

If an individual cannot predict, he or she cannot identify cause and effect.

If an individual cannot identify cause and effect, he or she cannot identify consequence.

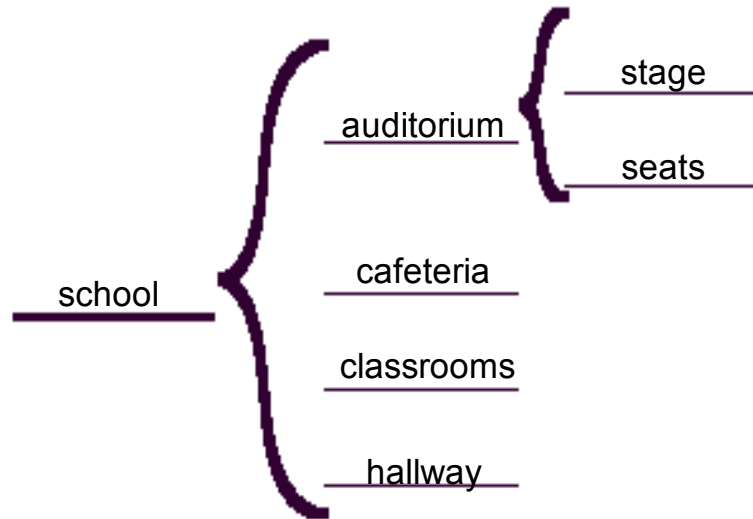


Figure 5. Brace Map of a school setting in the story *Doo Wop Pop*.

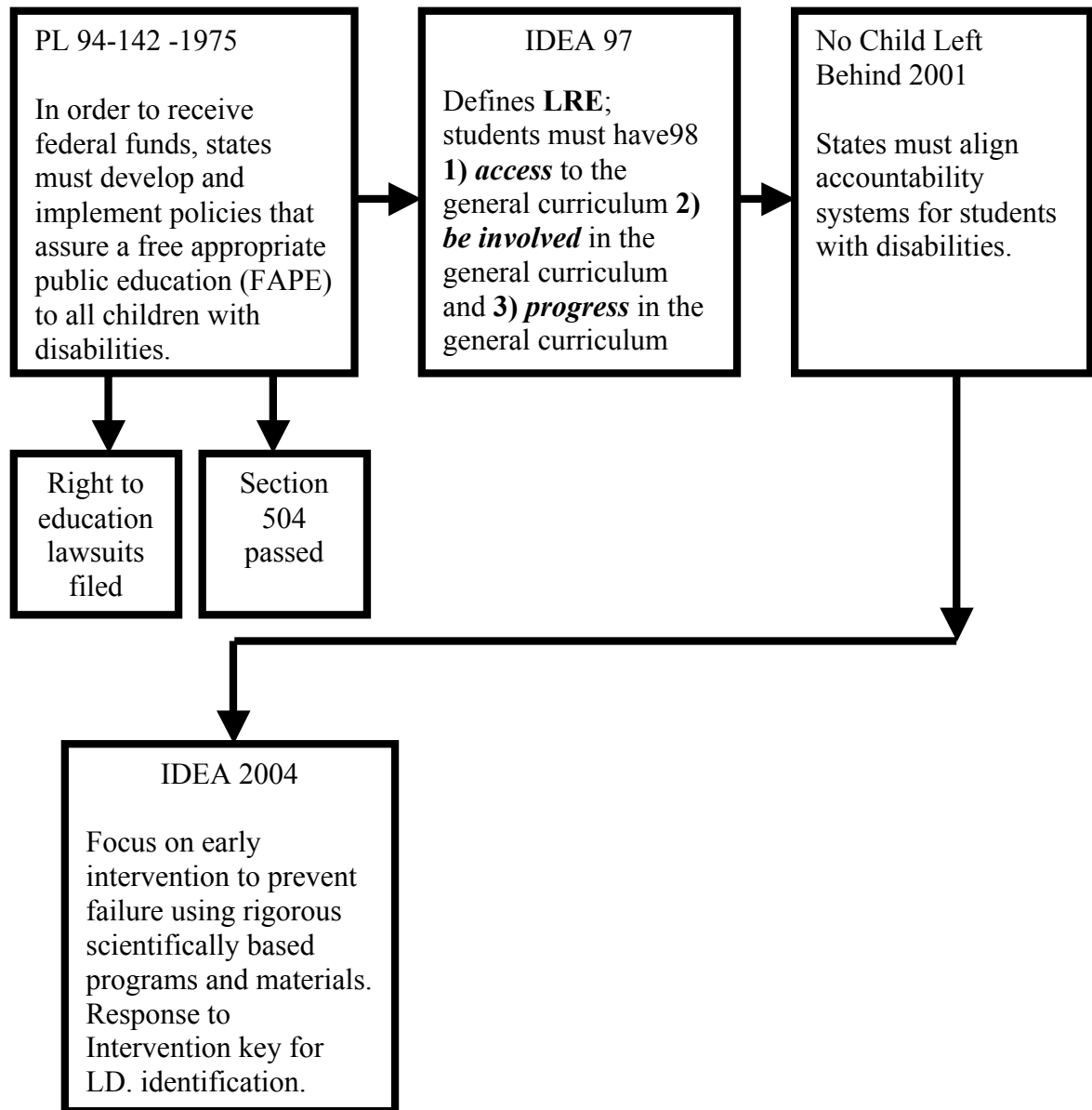


Figure 6. Flow Map on the sequence of legislation that impacted inclusion.

If an individual cannot identify consequence, he or she cannot control impulsivity.

If an individual cannot control impulsivity, he or she has an inclination to criminal behavior (p. 6).

Using the Multi-Flow Thinking Map® as shown in Figure 7 helps students to think critically about why an event occurs in a story or in life and the possible impact of that occurrence. This map begins with an event “War.” The boxes on the left are the causes, reasons, or why this particular event occurs. The teacher asks direct questions and probes students for the causes of this occurrence. The boxes on the right detail the effects, results, or the impact of the event.

The Bridge Map (Figure 8) was developed to help students identify relationships between words and concepts. The most important part of the Bridge Map is that it facilitates the ability to recognize the relating factor. It is the “similar phrase that fits both sides of the analogy” (Hyerle & Yeager, 2007, p.66). The first pair of things is on the top and bottom of the left side of the bridge. The second pair of terms that have the same relationship is written on the right side of the bridge. The analogy should be read as a sentence (i.e. substitute is a replacement for a teacher as understudy is a replacement for an actor. The relating factor is “is a replacement for.” Students can easily see the one-to-one relationship in this analogy and understand why they are related.

Implementation of Thinking Maps®

Implementation of Thinking Maps® requires one full single day of training and two or more follow-up days throughout the school year. Teachers must acquire one resource manual that includes blackline masters, eight Thinking Map® classroom

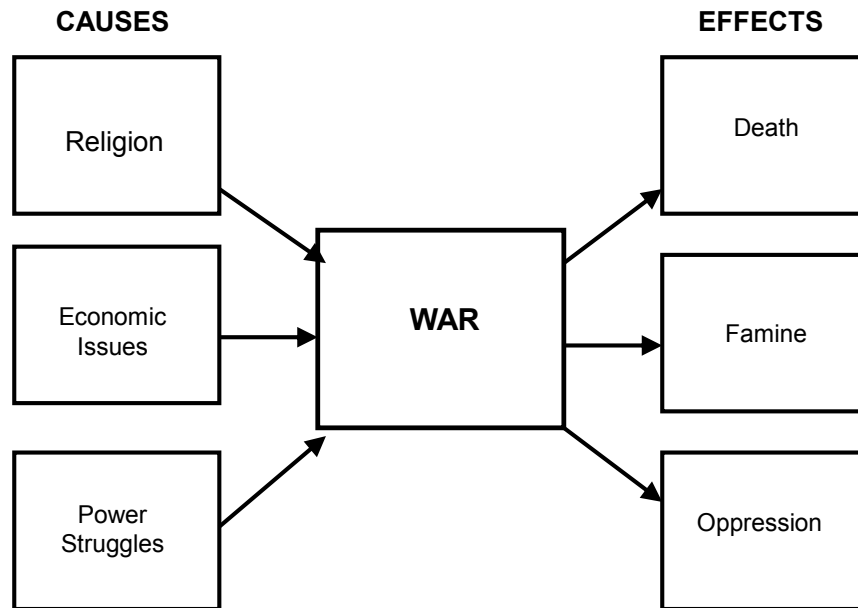


Figure 7. Multi-Flow Map on the causes and effects of war.

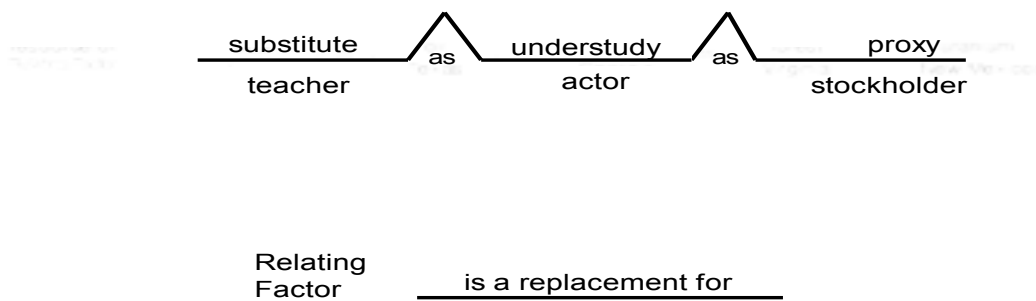


Figure 8. Bridge Map of analogous substitution relationships.

posters, lesson plans, and ideas for teaching the maps. The first manual published in 1995 used for training until 2007 has been used by schools throughout the world. The 2007 edition is entitled *Thinking Maps: A Language for Learning* (Hyerle & Yaeger, 2007).

Effectiveness of Thinking Maps®

Approximately 4000 entire school faculties have implemented Thinking Maps® across the country and abroad. They connect teachers, students, and administrators around the need for teaching higher order thinking skills. Thinking Maps® instruction is credited with increased scores on high stakes tests for students in reading and writing. Specific training is offered in writing using *Write... from the Beginning*, a program that around the need for teaching higher order thinking skills. Thinking Maps® instruction is credited with increased scores on high stakes tests for students in reading and writing. Specific training is offered in writing using *Write... from the Beginning*, a program that utilizes Thinking Maps® to equip students in kindergarten through fifth grade with the skills necessary for successful narrative and expository writing.

Many schools and school districts have reported considerable student gains on high stakes state tests in reading, writing, science, history, and math following implementation of Thinking Maps® (<http://www.mapthemind.com/research/html>); Hyerle, 1996). After countywide implementation of Thinking Maps®, the Brunswick County Public Schools located in Southeastern North Carolina reported significant growth in reading, writing, and math over a two-year period in grades three through twelve. It has approximately 10,000 students in 15 schools, eight of which were

elementary schools. Over half of the K-5 student population received free or reduced lunch.

Schools from several states around the country reported gains on different testing instruments after comprehensive training and follow-up coaching for a minimum of one school year. Increased test score results reported by administrators are supported by evidence that they are due to the use of Thinking Maps® by students. In 1996, the Margaret Fain Elementary School located in urban Atlanta, Georgia reported an increase in reading scores from 29% to 69% on the Georgia State Test of Basic Skills. At East Burke Middle School in North Carolina with a student population of 775 students, scores in reading rose from 65.3% before Thinking Maps® to 78.9 % on the ABCs of Educational Assessment after implementation. Newsome Park Elementary, a Title I school located in Newport News, Virginia implemented Thinking Maps® in 1997-98 and the Write...from the Beginning in 1999-2000 improved in all content areas for third and fifth grades. Carl Waitz Elementary in Mission, Texas reported that reading scores rose from 62.7% to 88.2% in 1994 on the Texas Assessment of Academic Skills. All the schools in Catawba County, North Carolina were trained in Thinking Maps® from 1993-1998. Several of the schools exhibited significant growth over multiple years in reading and writing on the North Carolina State End-of-Year Tests. Among them is Claremont Elementary where writing scores increased from 33% to 46% to 68% at the fourth grade level during 1993 through 1996. In Cabarrus County, North Carolina, A.T. Allen Elementary reported an increase in reading scores from 77% to 89% in 1998 on the same state test after implementation of Thinking Maps®. An inner city Long Beach, California

K-5 school of 1200 minority students (85% primarily Spanish speaking) used Thinking Maps® over a three year period to help translate language and thinking from Spanish to English. The principal Stephanie Holzman stated that it became the “first language for thinking thus supporting the languages, content learning, and cognitive development of our multilingual population” (Holzman, 2004, p.108). Roosevelt school was expected to gain 11 points on the standardized state tests, but exceeded that goal with a 60-point gain. Growth was exhibited across three subgroups: Hispanic, English-language learners, and students of low socioeconomic status.

Several books, articles, master’s theses, and dissertations were written that focus on the wide range of applications of Thinking Maps® from preschool through college. One such book is *Student Successes with Thinking Maps* (Hyerle, 2004) which contains a series of articles on how these visual tools can be used at every level and explains the “what, why, and how” of this useful program. Ball (1998) conducted a 16-week study at a junior college on the effects of Thinking Maps® on specific reading skills taught to both an experimental and control group. As an English instructor she found that many of her students had difficulties processing information. Reading scores from the ACT varied with some as low as fourth grade level. The students in the experimental group were taught a reading concept using a Thinking Map® and the control group was taught the same reading concept without using a Thinking Map®. A different map was taught each week and integrated with a reading concept:

Week 1- building vocabulary

Week 2 and 3 - context clues related words

Week 4 – figurative language

Week 5 – Parts of a textbook. Survey, Question, Read, Recall, Review (SQ3R)
and Preview, Question, Read, Self-Recite, Test (PQRST)

The results revealed a highly significant correlation between the uses of Thinking Maps and improved reading comprehension scores of her students (using a controlled, pre-post design and the Stanford Diagnostic Reading Test; form G for pre-test, form H for post-test).

Summary of the Overview of Thinking Maps®

Thinking Maps® are useful visual tools for learning and promoting higher order thinking skills across content areas. All of the maps support a developmental, instructional, and learning approach because they can be used to promote thinking skills from early childhood through high school and beyond. Use of Thinking Maps® helps the learner to integrate content knowledge with thinking skills and promote self-reflection by the learner as well as provides a form of assessment for the teacher. Implementation within entire schools and school districts has proven beneficial to students, staff, and administrative personnel in increasing reading and writing achievement. When it becomes a common visual language, students learn problem solving skills, how to network information, and construct knowledge.

Comprehension and Read Alouds

The significance of read alouds and their effect on reading achievement was recognized after the Commission on Reading's report *Becoming a Nation of Readers* (Anderson, Heibert, Scott, and Wilkinson, 1985). The authors acknowledged that “the

single most important activity for building the knowledge required for eventual success in reading is reading aloud to children” (p. 23). In the 21st century, more teachers have classroom libraries and read aloud to their students than they did thirty to forty years ago (Brabham & Lynch-Brown, 2002). One important method of strengthening comprehension strategy usage is from using read alouds of quality literature. Many children who enter school at the kindergarten level enjoy listening to stories and are excited about reading. Much of the instruction focuses on phonological awareness and print features. As the grades progress, students still love listening to stories while they gradually encounter more and more complex text. Read alouds help to build language, listening skills, and background knowledge. Recent research has established that effective read-alouds contribute to students' comprehension development (Fisher, Flood, Lapp, & Frey, 2004; Hickman, Pollard-Durodola, & Vaughn, 2004).

Rosenblatt's Teachings a Key Element for Comprehension

It is important to note the teachings of Louise Rosenblatt (1974, 1998) when promoting comprehension skills with read alouds. Rosenblatt reminds us that literature is not to be taught as fragmented data to be tested. Young readers in the elementary and secondary grades can become too focused on garnering facts from the text and teachers are so concerned about teaching to standards based tests that they do not allow students time to read for aesthetic purposes. The aesthetic reader pays attention to feelings, qualities, emotions, ideas that unfold as they read the text. Rosenblatt (1980) indicated that teachers in earlier years preserved the spontaneity of children as they transacted with

the text. Rosenblatt tells us that children are not empty vessels that must be told what and how to think. Instead, they come to us with their own assumptions, belief systems, culture, and experiences which they use to make sense of text. Rosenblatt taught us that we must respect what the reader brings to the text. The readers' response to the text influences their interpretation of the world. As we navigate in a society of standards based education, large scale testing appears to drive curriculum and oftentimes diminishes the creativity of teachers. Rosenblatt's impact on elementary and secondary education has affected the way teachers present literary material. Her philosophy is that teachers should not force students to adopt an efferent stance when presenting stories, poems, or plays. The efferent stance (quantitative) is more concerned with reading analytically, pulling out factual information, while the aesthetic stance (qualitative) is more concerned with meaning, and the affective domain. She warns teachers not to preface aesthetic reading by requiring information or to demand summaries, paragraphs, character analyses, or thematic content too soon after reading. They should not use texts read aesthetically for explicit teaching of reading skills. Instead, she helped teachers of younger readers to attend to the social and aesthetic sensibilities of children as much as their logical and cognitive development. When we see classrooms with lively and rich discussions of literature we are witnessing Rosenblatt's transactional theory at work.

Unfortunately, much of our society and our schools conspire against the kind of discussion approach to the teaching of literature that Louise advocated for all of her life (Pradl, 2005). Rosenblatt's principles of active readers transacting with the text as

discussing character traits and behavior, word connotations, and sharing multiple viewpoints should not be the exception, but the norm.

Comprehension Strategies

At the core of every definition of comprehension is some variation of constructing meaning from the text. It is a process that emphasizes purposeful strategic problem solving as the reader engages with the text. Durkin (1993) defined comprehension as “intentional thinking during which meaning is constructed through interactions between the text and the reader.” She concluded from her landmark 1978/1979 study that less than 1% of the reading period was spent teaching comprehension. Twenty years later Pressley, Wharton-McDonald, Mistretta-Hampston, and Echevarria (1998) reported little has changed. Many factors influence the process of acquiring meaning. Inclusive of these factors are the reader’s prior knowledge and experiences, the abilities and skills the reader brings to the text, and the writing quality of the text to be comprehended. When text is well organized comprehension is better. Comprehension improves when students’ prior knowledge is activated and students can connect to the text they are reading (Block & Pressley, 2002; RAND Reading Study Group, 2002). Teachers should assist in building background knowledge through read alouds, internet access, field trips, bringing in artifacts, DVDs, videos, pictures, etc., when the subject matter is unfamiliar. Current research suggests that comprehension strategies can be directly taught through teacher modeling and explicit instruction (Block & Pressley, 2002; Calfee & Patrick, 1995; Gaskins, 2003, Pressley, 2006b; RAND, 2002; Sweet & Snow, 2003). The key questions are: What strategies are appropriate to facilitate comprehension? When and how often

should those strategies be taught? More importantly how can teachers assist students to become self-regulated independent users of these strategies while fostering critical thinking.

Comprehension is one of the five key areas necessary for reading achievement mandated by the *No Child Left Behind* (2001) legislation. Comprehension strategies should be taught before, during, and after reading. Before reading teachers may activate prior knowledge and determine what students already know about a given topic. During reading students should be making connections with previously read text and/or background experiences. Students may visualize or picture in their mind's eye what is described in the text. Some may choose to draw about what was read to increase understanding the text. Children should be encouraged to ask questions such as, "Why is this the way it is?" Doing so aids in developing critical thinking skills. Predicting is a key comprehension strategy that helps students to use clues from the text and illustrations to determine upcoming events in the story. Summarizing helps students to make sense of the text and determine the big ideas that the author is trying to convey. Students should engage in monitoring and clarifying as they read to obtain meaning from the words and sentences. Monitoring and adjusting reading speed is an important strategy to use when reading complex material. Oftentimes one must re-read text to seek clarification. Understanding cause and effect, comparing and contrasting, drawing conclusions, and making inferences are among other important comprehension skills that help readers to develop a deeper understanding of the author's words.

Content knowledge and strategy instruction are two categories involved in comprehension instruction. However, there has been a greater emphasis on strategy instruction than content knowledge. The National Reading Panel's Report (NICHD, 2000) concentration on comprehension strategies in their meta-analysis of reading studies distracts from the other areas of comprehension instruction. According to Laing and Dole (2006) emphasizing strategy instruction gives the impression that it is the only part of comprehension instruction to be taught. They contend that a major focus for students is to understand the content of the text.

Comprehension strategies are not always easy to teach or for students to acquire. In Hilden's and Pressley's (2007) yearlong study in two middle schools they found that teachers struggled with how to teach the strategies explicitly. During the course of the study teachers had to select the texts to teach the specific strategies. They experienced difficulty because some students had deficits in vocabulary and word attack skills. This complicated their ability to teach strategies because students could not read or make meaning of the majority of the words in text. In some instances, students lacked background knowledge to make sense of the text. Teachers faced challenges in determining the appropriate amount of explicit comprehension instruction to offer. Reading assessment issues and frustration over the lack of students' self-regulated use of the strategies were other difficulties documented by the researchers. The study revealed important applications for comprehension instruction. First, teachers must be "self-regulated strategy users themselves in order to effectively teach the strategies to their students. This requires teachers to pay attention and practice the strategies when they are

reading on their own” (p. 71). Additionally, teachers should explain the strategies in a way that encourages students to use them. Clear explanations are crucial because students must be told how to use the strategies, which ones work, and those that do not work. Students did progress over the course of the year, but no student became self-regulated users of these strategies after one year. A significant conclusion from the Hilden and Pressley study provides the implications for this researcher’s study suggesting that it takes continued practice and reflection over years to help students become self-regulated users of strategies to improve comprehension.

For many students who struggle with decoding skills or who are just learning to read fluently, comprehension strategies may be taught effectively with read alouds. Text structure is the framework that contains critical features of reading material. Major elements of narrative story text structure consists of the setting, identifying major and minor characters, character analysis, (e.g. personality, appearance, comparing and contrasting characters), problem, attempts to find a solution to the problem, sequence of events, and theme. The early elementary grades are good times to teach text structure because it provides a foundation for comprehending more complex text as chapter books and novels are encountered in later grades. In the upper elementary grades, students encounter more multifaceted components of text structure. Among the elements of complex text structure students may have to identify characters’ influence on the plot, types of conflict as (e.g. man v. man, man v. machine, man v. environment, man v. himself), subplots within the main plot and how the characters’ actions impact the theme. Within the context of read-alouds, students have opportunities to discuss story elements

and make text-to-text connections. They provide ideal opportunities for comprehension instruction of narrative and expository text and provide a vehicle for students to use in discussion and the retelling of stories.

Visual tools as graphic organizers, also improve comprehension by helping students recognize text structure, monitor reading, predicting, and summarizing. Pressley (2002) reviewed 11 studies that used graphic organizers with readers in grades 4 through 8. The results of this meta-analysis revealed that teaching readers how to use graphic organizers helped them to organize ideas, recall what they read, and improved reading comprehension and achievement in the areas of social studies and science.

A study with 39 students investigated the effects of two approaches to story grammar instruction on the reading comprehension of first grade children with and without learning disabilities (Bui, 2002). The students were from an economically diverse student population from a small town Kansas City elementary school. Twenty children's picture books that were not familiar to the students were chosen as the primary instructional materials. There were three intervention groups. In Group A students were taught five story grammar elements using their personal experiences and how to recall and reflect upon one type of experience each week (e.g. favorite places). They were asked to tell the researcher about the experience, draw a picture, and write a sentence about the experience. Next, the teacher read an unfamiliar story and identified the story element part from each story. The students drew a picture and wrote sentences on an independent basis about that story element then integrated all of the parts into a story map. Group B students were immediately taught basic story grammar instruction without

activating prior knowledge. Group C students did not receive any story grammar instruction. They received the same comprehension instruction that the classroom teacher normally provided. Students received a retelling score for telling what the story was about in their own words. Students took an oral story retention quiz with two inference questions and eight factual questions. If the responses were on the list of acceptable answers they received one point. There was also a story grammar score where there were one to three questions for each of five story elements (e.g. setting). Results were favorable for the use of story grammar instruction as a method to improve the ability of first graders with and without learning disabilities to retell and identify story elements in narrative text. Students who integrated personal experiences performed better than all the other groups on all measures except the story retention measure.

In a study of the daily use of read alouds to teach content that was not in the core reading material of first graders, students were explicitly taught comprehension strategies and vocabulary (Santoro, Chard, Howard, and Baker, 2008). Teachers wanted to find ways to maintain student enjoyment during instruction. The researchers' task was to design and evaluate a curriculum framework for teaching comprehension of narrative and informational text to first graders during read aloud time. Among the strategies taught through read alouds were: making connections, predicting, justifying what will happen next and describing new information found in text. One of the strategies, "text talk" engages students in text based discussions (Beck & McKeown, 2001). Text based discussions were found to increase vocabulary acquisition and comprehension. To determine if the instruction affected comprehension, they looked at at-risk students as

well as those on track for comprehension development. Results indicated that students who were exposed to read-alouds with active text discussion and explicit comprehension instruction progressed in comprehension. They had longer retellings of narrative text with more in-depth comprehension than students who did not receive read-aloud lessons.

Picture books and informational books can be used together to build background knowledge, a key comprehension strategy. An example provided in Soalt (2005) discussed how an upper grade social studies unit on the Underground Railroad was taught using fictional and non-fictional text. She suggested using *The Underground Railroad* (Bial, 1999); *If you Traveled on the Underground Railroad* (Levine, 1993) as informational books to complement and reinforce the fictional accounts in children's literature books as *Aunt Harriet's Underground Railroad in the Sky* (Ringgold, 1992). This researcher would add *Moses: When Harriet Tubman Led her People to Freedom* (Weatherford, 2006) as additional fictional reading. Using both fiction and informational books help to "build background knowledge, vocabulary, and motivation for reading longer informational text" (Soalt, 2005, p. 682).

Summary of Comprehension and Read Alouds

Explicit strategy instruction has its place, but it should not impede children's enjoyment of literature. Teachers can use quality read alouds to assist with teaching complex comprehension strategies keeping in mind that "reading comprehension is deeply dependent on motivation" (Hilden & Pressley, 2007, p.286). Long term motivation over time is needed for students to learn complex comprehension strategies. Students have to be motivated to engage in independent reading and to use the strategies

successfully. Therefore, read alouds need to be carefully selected to engage student interest. Using quality informational text with fictional children's literature helps to supply background knowledge, which is necessary for comprehension.

Engaging Boys with Literature

Many books and articles have been written on the subject of boys and reading over the past several years, including titles as: *Boys, Literacies, and Schooling: The Dangerous Territories of Gender Based Literacy Reform* (Rowan, Knoble, Bigum, & Lankshear, 2001); *Reading Don't Fix No Chevys: Literacy in the Lives of Young Men* (Smith & Wilhelm, 2002); *Boys and Literacy: Exploring the Issues* (Maynard, 2002); *Misreading Masculinity: Boys, Literacy, and Popular Culture*, (Newkirk, 2002); *The Boys and Girls Learn Differently* (Gurian & Ballew, 2003); *Teaching Reading to Black Adolescent Males: Closing the Achievement Gap* (Tatum, 2005); *The Minds of Boys* (Gurian & Stevens, 2005); and *Reading for Their Life: (Re) Building the Textual Lineages of African American Adolescent Males* (Tatum, 2009). The increasing volume of articles and books on the subject of boys and reading suggest an increasing interest in how to improve reading achievement in males. Studies do not indicate why boys feel at odds with their literacy experiences in school, only that educational institutions must attempt to address their needs within the classroom.

Research on African American and Latino children who enter kindergarten indicate deficits in vocabulary, phonemic awareness, and sight word vocabulary. In *The Early Childhood Longitudinal Study* (Bowman, 2002) data were gathered on early reading skills in the fall of kindergarten comparing African American and white children.

Results revealed that after a year of kindergarten, African American males attained lower mean scores than females on all tests of literacy. Seven percent of African American boys were able to read as compared to 9% of African American females (Bowman, 2002).

Jawanza Kunjufu (1982, 1986, 1990, & 1995) gives a critical account of the development and guidance of African American male children in his four volume series *Countering the Conspiracy to Destroy Black Boys*. He cites statistics indicating that the black male prison population is greater than the black male student population on college campuses. Kunjufu states there is a disproportionate percentage of African American children placed in special education with the majority being male.

During his travels as a national consultant to many schools from pre-school through college Kunjufu discovered that black boys appear to lose some of their enthusiasm and interest in academics after third grade. In the early childhood grades when boys are placed in a more nurturing environment, they are willing to please, and exhibit an eagerness to learn. After third grade, boys appear to begin a downward spiral in what Kunjufu describes as the *Fourth Grade Failure Syndrome* (Kunjufu, 1982, p. 9). Among the key reasons for this decline in African American boys' achievement rate is a decline in parental involvement, increase in peer pressure, decrease in nurturing, deficiency of male teachers, and lack of understanding of how boys learn. Kunjufu highlights the need for schools to do a better job of developing African American boys to their fullest potential.

In a report entitled "Yes We Can: The Schott 50 State Report on Public Education and Black Males" found that black males in the state where the study was conducted

graduated at much lower rates (33%) than the nation as a whole (47%) during the 2007-2008 school year (<http://blackboysreport.org/node/80>). The report also indicates that the black male student population has more placements in special education at 3.96 percent as compared to their white, non-Hispanic peers. The CEO of the Schott Foundation, John Jackson, points to a lack of resources. The disparity between urban poor schools and affluent ones may contribute to the underperformance of African American males. Affluent schools have textbooks in the classroom and enough to send home with students. The schools have libraries stocked with an adequate supply of current quality literature as well as art, music, and state of the art science labs. Schools with a majority black population usually do not have these amenities which impacts achievement in urban males.

Insights into Boys and Reading

Tatum (2005) cited studies that indicated using literature with traditional male archetypes might be a viable entry point into literacy for boys. Developing a reading curriculum that appeals to boys is challenging because some males believe reading to be a passive female experience. Texts that “hook” boys into reading should be male oriented with male characters that contain issues boys care about and honor their identity. Many boys enjoy non-fictional texts that have information about real events and situations. Engaging boys with literature that holds their attention and encourages more reading currently is a challenge for many teachers and parents. Boys in particular need opportunities with literature that motivate them to read. A majority of elementary school teachers are female and they along with mothers are the primary literacy teachers. There

is a concern that female teachers may not be choosing literature that would most interest their male pupils. Teachers have been admonished for exposing students to female-friendly stories of love and romance rather than the types of adventurous tales which appeal to boys. More specifically, which authors appeal to our young urban males in grades one through eight? What reading material should teachers expose their male population to increase student interest in reading?

In a December 4, 2005 issue of the *Detroit News and Free Press* Sunday edition, the headline read, “Where are the Boys?” Writer Michael Hodges reported that female students outnumber men on campuses. Every year women students increase their presence on campus and men do not. Hodges cites Harvard clinical psychologist, William S. Pollack who heads the Center for Men and Young Men, calls schools “some of the most boy-unfriendly places on Earth” (p. 18A). He noted that boys learn to put words together and read, on average, “six months to a year later than girls...reading scores offer the clearest sign of disparity between the genders. In a trend that began in 1980, but has grown enough for the nation to take notice is that fewer men now attend and graduate from college than women. Gurian and Stevens (2005) noted that for the first time in history less than 44 percent of the nation’s college students are males. The dropout crisis has affected twelve of the nation’s biggest urban cities including the location of this researcher’s study. There are significant disproportions across ethnic, race, and income groups in the number of males who graduate from high school. In a report distributed by the Center for Labor Market Studies at Northeastern University in Boston (2009), nearly one in five U.S. men between the ages of 16-24 (18.9%) were dropouts in 2007. By the

time boys reach the eighth grade the gap widens further. Pollack suggested that boys struggle more in elementary school, are more prone to frustration, and less likely to seek higher education. According to the United States Office of Special Education Programs (2004), more boys than girls are diagnosed with attention deficit hyperactivity disorder (ADHD). Most research suggests that the condition is diagnosed four to nine times more often in boys than in girls. Gurian and Stevens (2005) make the following claims:

- Boys get the majority of D's and F's in most schools, some as high as 70%.
- Boys make up 70% of students diagnosed with learning disabilities.
- Boys make up 80% of students diagnosed with behavior disorders.
- Eighty percent of high school dropouts are young males.

The problems boys face in reading cross both ethnic and economic boundaries. Smith and Wilhelm (2002), found that boys generally take longer to learn to read than girls; they read less and are less enthusiastic about it; and they have more trouble understanding narrative texts yet are better at absorbing informational texts.

Effects of Poverty on Reading and the Urban Male

The circumstances impacting urban males can in part be attributed to the effects of poverty and how teachers can make a difference with positive literature opportunities. There is a correlation between low levels of reading achievement and socio economic status particularly in poor students in grades 4, 8, and 12 when compared to students who are not poor. This is particularly significant when African American urban males are considered. A report issued by America's Promise Alliance (2008) concluded that 17 of

the 50 largest cities in the United States had graduation rates lower than fifty percent with the district in this study having the lowest graduation rate in the nation. In the urban area referenced in this study, only 24.9 percent of the high school students graduate, which is troubling for a city that has high unemployment, poverty, and home foreclosures.

According to the 2009 U.S. Census Bureau American Community Survey, the poverty level for 2009 was defined at \$22,050 or less in annual income for a family of four. The percentage of Americans living in poverty in 2009 was 14.3%. Boys' failure in reading is more connected to their economic status. Gilbert and Gilbert (1998) wrote:

The intersections between socio-economic resources, geographical location, ethnicity, and race is critical here, as they demonstrate the groups of boys who are potentially more at risk for school failure. This is particularly noticeable in literacy results where, although gender remains a key predictor of success, it is clearly affected by a range of other social and cultural factors (p. 9).

According to Tatum (2005), there are at least four major barriers that impede reading achievement in urban black males: (a) a clear strategy is lacking to attain this goal; (b) no clear definition of literacy instruction's role exists; (c) no agreement among educators on how to provide effective reading instruction for struggling readers particularly past the primary grades; (d) the focus has been on strategy and skill instruction while ignoring curriculum orientation, forms of pedagogy; and (e) other effective factors. Teachers who provide effective reading instruction do not focus only on skills and strategies, but address multiple literacies. Tatum (2005) noted that "skills and strategies are only working tools; they have little utility for advancing students' literacy."

Tatum posits that simply providing a student with a hammer and nails does not mean they will come up with idea of building a house. Students have to see the “transformative possibilities” associated with the skills and strategies or they will be deemed useless tools. The tools should relate to the students’ lives.

Tatum (2005) continues, as teachers become invested personally beyond the curriculum, they must become aware that in order to reach urban males they should address their cultural, emotional, social, as well as academic literacy (Tatum, 2005). Cultural literacy is described as a heightened consciousness of historical and current events that shapes one’s cultural identity. Emotional literacy is helping the male student manage his own feelings and beliefs. Social literacy is the ability to handle a plethora of social settings with people who may not have the same views, yet still achieve a positive outcome. Academic literacy should be encouraged so that males can apply skills and strategies independently to handle cognitive tasks. Teachers should create a culturally responsive environment where literacies of urban males can thrive.

Literature Choices Impact Attitudes of Urban Males

Teacher awareness of literary works that influence boys’ motivation to read is crucial. They must be aware of how text and illustrations are important factors in increasing positive attitudes and comprehension of the reading experience. The impact picture storybooks have on children is strong and long lasting. An illustrator’s images and author’s text create a delicate balance to convey messages that can manipulate the reader’s perception of ethnicity, gender, and culture. Children choose to read literature

that connects with their own heritage and events in their lives. What they see or do not see may transform their racial constructs and impact their perceptions of people from youth into adulthood. Literature should encourage and promote the concept that all people should honor the ethnicity of an individual and extend that same respect for the cultures of others (Caver & Williams, 1995). Rudine Sims Bishop (1982) wrote:

A picture book integrates text and illustrations into an artistic whole; the pictures are as important as the text. Thus, the picture book illustrator plays a critical role in the creation of the images of African Americans that are offered to children through their books” (p. 58).

The year 2005 marked a significant anniversary in the history of multicultural children’s literature. It has been more than forty years since the publication of Nancy Larrick’s classic article *The All-White World of Children’s Books*. Larrick was the former president of the International Reading Association who conducted a landmark study on children’s literature. She became painfully aware of the grave omission of minority populations in children’s literature while talking with a young African American girl in a nursery school in New York City. The young girl asked while viewing a picture book, “Why are they always white children?” The girl’s question prompted Larrick to conduct an investigation into this matter. The results were shocking. Only 6.7% or a bleak total of only 349 books of the 5,206 trade books published over a three year period from 1962-1964 included even one African American child in either text or illustrations.

Chall, Radwin, French, and Hall (1979) replicated the study of Larrick’s research and reported significant gains with 14.4% of the 4,775 books (689 books) published

during the years 1973-1975 that contained African American characters. Chall et al. expressed cautious optimism about the noteworthy progress. Their content analysis depicted African American characters in a variety of settings and in important roles. By 1990, Rudine Sims Bishop noted that less than two percent of books published each year featured African American characters. Presently in 2008, the advancement of African Americans in children's literature has moved slowly in comparison to social and political gains in our culture. Mongo and Johnson (2004) peaked our level of consciousness when they wrote, "although literature in general has grown significantly, topics concerning African American children have somehow remained stagnant" (p. 125). There is a crucial role that literature plays in shaping children's images of themselves in our world. Teachers should be aware of their responsibility in choosing literature that reflects positive images of African American boys and girls. Teachers have an obligation to expose students to the truth about their heritage, culture, and lives. The powerful influence of children's literature must be considered by educators, authors, illustrators, publishers, and parents when inculcating America's youth to characters in children's literature. Eloise Greenfield (1975) stated:

Books that reach children should authentically depict and interpret their lives and their history; build self respect and encourage the development of positive values; make children aware of their strength and leave them with a sense of hope and direction (p.624).

Responses to Images in Children's Literature

In a study investigating African American student response to images of African Americans in picture books, McKenzie and Johnstone (1997) focused on picture books written from 1987-1997. McKenzie's independent study explored African American character illustrations in modern books and compared them with images developed in the late nineteenth and early twentieth century. He discovered that some of the same derogatory images that existed then were still in existence in modern texts. Johnstone's (1997) related study examined children interactions with the books they read and the role that characters and themes play in fostering that interaction. Both studies were designed for African American children to answer the question whether or not representations of African American characters in picture books influenced their preferences. They sought to determine the level at which African American students interact with the pictures surrounding the text and if that interaction played a major role in the books that they select for reading and re-reading.

The study provided some insights for teachers of factors to consider when selecting books for classroom use representative of a variety of cultures and experiences. The researchers felt teachers must remain aware and informed of images that could be detrimental to students' self-concept or those representations which perpetuate stereotypes and negative images of specific cultures. Both a quantitative and qualitative study was designed to provide measures to collect a range of responses from twenty, fifth grade students, nine girls, and eleven boys. Five picture books featuring African Americans as main characters were used in the study: *Amazing Grace*, *Yo! Yes?*, *The*

Snowy Day, Sam and the Tigers, and Little Black Sambo. The selected books were ranged on a continuum from “most positive” to “most negative” images. After reading each book the students were asked to complete a survey and take part in discussion sessions. Results indicated that the presence of stereotypical images did not affect which books students preferred to read. While they identified the stereotypical features of images, the students did not make judgments based on the offensive nature of these features. They were not aware of the context in which the stereotypes existed, but they often disliked the same racist, stereotypical images. Their findings suggested a need for teacher intervention in exposing students to literature that convey positive messages in text and illustrations.

Summary of Engaging Boys with Literature

A discussion was presented on the subject of boys and reading as it relates to providing opportunities for connectivity to literature that appeal to their interests. Urban African American males in particular are at risk for school failure due to problems in reading that influence their attitudes and motivation to read. The statistics are consistent that there is a gap in literacy development of boys as compared to their female counterparts. Males need appealing literature that peaks their interest and stimulates reading success. They differ from girls in the type of reading choices they make of reading material. Literary selections for classroom use influence students’ self-image, self-respect, and play a critical role in how boys are viewed by the world. Socio-economic status affects boys’ reading development. There is documented evidence that students from impoverished home environments have lower reading achievement than those of their peers who are not poor particularly in the intermediate and high school

grades. Teachers play a critical role in motivating male students to read by exposing them to authentic quality literature that depict their lives in both illustrations and text.

Historical Perspective of African American Males in Children's Literature

This historical perspective briefly summarizes images of African American males as depicted in literature for children from the late 1800s through the first decade of the twenty-first century.

Late 1800s to 1920s: Early Period

Historically images of black characters of and for children were depicted by non-African American writers and illustrators in stereotypical and derogatory manners (Williams & Caver 1995; Johnson, 1999; Martin, 2004). Books by white authors included Heinrich Hoffman's *The Story of the Inky Boys* from Struwwelpeter (1845) and Helen Bannerman's *The Story of Little Black Sambo* (1899), neither offered a flattering view of blackness. It could be argued that Bannerman and Hoffman were ahead of their time because they wrote about minority characters in an era when minorities in society and in children's literature were marginalized to the point of imperceptibility. However, Hoffmann's Black-a-moor character and Bannerman's *Sambo* both focused readers on their low socio economic class and depictions that were offensive stereotypical features. Joel Chandler Harris' *Uncle Remus Tales* (1881) is a collection of disdainful folktales allegedly told by slaves. Instead of virtue, he allowed helplessness to interpret the true nature of slaves (MacCann & Woodward, 1985). Harris' tales were almost impossible to read due to their attempt to write in heavy dialect. Broderick (1973) quoted a passage

from Harris' tales when Uncle Remus talked to a little boy found playing with the master's children. He remarks:

Dem Favers's wa'n't no 'count 'fo 'de war, end dey wan'n't no count endurin'
er de war, an dey ain't no 'count attereards 'en w'iles my hear's hot you ain'
gwine ter go mixin up yo' se'f wid de riff-raff er creashun (p.61).

This type of language perpetuated the myth that African Americans lacked intelligence and could not speak intelligible English.

For black parents and educators, finding positive representations of African American life, with positive images of black males and females were few and far between. The historical memory of many, reminds us of the time that if black parents were allowed into bookstores they could choose from such negative titles as *The Ten Little Niggers* (1875) published by the McLoughlin Brothers with later versions by the Brin Brothers and David Brett or *Mammie's Lil Chillun* (Williams 1904). Each had derogatory and stereotypical images of black males. Writers often created tales of kindly plantation owners and loyal happy slaves (Williams & Caver 1995; Martin 2004, Johnson 1999). Thomas Nelson Page's book, (1887) *In Ole Virginia* describes former slaves as loyal to previous slave owners, but too dumb to handle their own affairs away from the plantation. It appears that the writers were suggesting that it was a pleasant time for slaves.

African Americans males have been depicted negatively in children's literature from the mid 1800s through the 1970s. In Bannerman's *Sambo*, (1899) black males are portrayed as "smiling darkie" caricatures with curly afro hair and bright red lips.

Bannerman, an English woman, living in India wrote the story to amuse her own children. Many Americans overlooked the Indian setting and saw only an African child as the main character. Sambo became a generic name for black males at the turn of the century and into the 1900s especially in the United States (Martin, 2004). Hollywood used the name to refer to black shoeshine boys and bartenders. The Sambo figure became an icon depicting black men as childish who posed no threat to white society. The mass production of this stereotypical image of the black man was coupled in children's literature with heavy unintelligible dialect. This image of Sambo had the power to destroy the self-image of African Americans and damage the minds of white children by illustrating black males in a demeaning way. This book had wide spread exposure and was a best seller in England and the United States. Between 1900 and 1981, over fifty different versions were published in the United States. The concept of "Sambo" is still viewed as derogatory and elicits negative feelings from African Americans today. Yet, the story of Little Black Sambo remains in print with the latest publication being January 1, 2003 by HarperCollins.

Many stories written by African Americans in the 1800s were autobiographical or biographical in content and read by both Blacks and Whites. These stories were often published and distributed by churches. They were written exclusively to focus the reader on the gloomy plight of Blacks living in America as the story *Running a Thousand Miles for Freedom*, (1860) by William and Ellen Craft and later retold by Julius Lester. A British publication portrayed the interesting story of a couple attempting to escape from slavery. Ellen disguised herself as a white male planter and was accompanied by her dark

skinned husband who pretended to be her servant aiding them in their escape to freedom from Georgia to Philadelphia.

E. W. Kemble's *A Coon Alphabet* (1898) aligns itself with the author's racial stance. The term "coon" was synonymous with "nigger" and became an offensive label for blacks used by non-blacks. It is an abbreviation for raccoon, which lends itself to a dehumanizing comparison of African Americans with an animal with black circles around the eyes. The coon caricature is one of the most insulting of all anti-Black caricatures. As with Sambo, the coon was portrayed as a lazy, easily frightened, chronically idle, inarticulate, buffoon. The coon differed from the Sambo in subtle but important ways. Sambo was depicted as a perpetual child, not capable of living as an independent adult. The coon acted childish, but he was an adult.

1930s to Early 1960s: Trends Change

Racial unrest during the late 1930s through the 1960s lead to a period where there was a decline in African American male and female characters in children's literature (Sims, 1982). This may have harmed both black and white children alike. Some writers attempted to write stories presenting positive images, but many books still contained some stereotypical images. Eleanor Lattimore's book *Junior, A Colored Boy of Charleston* (1938) is about a young African American male who does several jobs to earn money to buy some skates and a doll for his sister. Junior's father is present in the story, but unemployed, which was another common portrayal of Black men. The mother works to support the family by doing domestic work for white people. One of his jobs was to

perform a sing and dance routine for white sightseers in Charleston. This story depicts large women as maids with aprons and head cloths. Children provided with such images most often viewed African Americans as inferior socially and occupationally. They were often portrayed as porters, maids, cooks, handymen, butlers, mammies, ineffectual servants, ranch hands, laborers and cleaners, elevator operators and washroom attendants.

The *Nicodemus* stories written in 1940-1942 by Inez Hogan were filled with negative stereotypes of African American males. *Nicodemus Laughs*, *Nicodemus Runs Away*, and *Nicodemus and the Goose* were all about a little boy and “poor, ragged, unkempt, and ignorant children on a plantation with objectionable illustrations” (Williams & Caver, 1995, p. 17). Some white authors in the mid 1900s did not create negative black images in children’s literature. This paradigm shift helped to prepare readers for books authored by African Americans who characterized blacks as positive and attractive.

In *Two is a Team* (Biem & Biem, 1945) Ted, who is black and his white friend Paul are best friends who are “just the same.” They are the same age and size and enjoy putting together a coaster. They work together finding the parts; argue over who gets to construct what and as a result become angry. Eventually they construct their individual coasters and race them down a hill crashing into a woman with groceries, a little girl with a doll, and a man walking a dog. They end up getting a grocery delivery job to earn enough money to repay all three people for the damage they had done. It is a story about how two boys from two ethnic groups cooperate and solve problems. Family stories as Ellen Tarry’s *My Dog Rinty* (1946) and Inez Hogan’s *Nappy Has a New Friend* (1947)

depict African Americans in a positive manner. Nappy is white and Tommy is black, are two boys who share a special friendship. Both boys like going to the dump to dig for “treasures” and both decide to put together an “integrated” circus.

There were significant advancements in pictorial images of African Americans. This was a reflection of the growing population of educated African Americans and publishing firms owned by African Americans. Carter G. Woodson established Black History Week in February. The National Council of Teachers of English (NCTE) published *We Build Together: A Reader's Guide to Negro Life and Literature for Elementary and High School*, (Rollins, 1941). Charlene Rollins investigated the treatment of blacks in children's literature and lack of positive images in the 1940s. She helped to formulate a listing of 72 titles of acceptable books about African Americans for school age children (Johnson & Mongo, 2004). It increased to ninety by the publication's second edition in 1948.

1970s: A New Day for African American Males

Tolerance and empathy for the plight of African Americans increased during this period. More books were published or rewritten with African American male characters. In an open letter to the *New York Times Review*, Julius Lester wrote that he would devote more time to writing books that will instill black pride and strength that was “deliberately kept from them...” (Johnson & Mongo, 2004 p. 129). The Coretta Scott King Award established in the 1970s influenced the quality of text and illustrations of the black experience in picture storybooks. It was created to recognize those authors and

illustrators whose books brought authenticity to African American culture in children's and young adult literature. After the first year, the award was specified as African American author or illustrator. The 1970s was the "Black is Beautiful" era when African Americans embraced their own natural hairstyles and African dress. The words of singer James Brown, "Say it Loud. I'm Black and I'm Proud," echoed the feelings of many blacks during this period. Beautiful picture storybooks were written in the 1970s that depicted a positive representation of African American males. Tom Feelings illustrated black children in a non-stereotypical way in *Moja Means One; A Swahili Counting Book*; *Jumbo Means Hell*; and *Black Pilgrimage*, all written and illustrated in the 1970s.

1980s: Greater Diversity

The 1980s brought about a greater variety of stories from an African American perspective. Rudine Sims-Bishop wrote about the era between the mid 1960s and 1980s in her book *Shadow and Substance* (1982). She divided children's literature into three categories: socially conscience stories, melting pot books and culturally conscious fiction. The socially conscience books were comprised of four different plot variations. The first type related to conflicts arising from the desegregation of schools. The second type of plot centered on how white children coped with prejudice while maintaining friendships with African American children. The third type of story was about how African Americans and whites used the system as marches, sit-ins, petitions, and other peaceful demonstrations to bring about change. The final type of socially conscience book was about African American children becoming friends with whites. The melting pot books

ignored sub-cultural differences such as extended families, but not the physical characteristics as skin color. Culturally conscious fiction presented realistic stories rich in textual and/or visual representations of African American experiences. According to Sims-Bishop (1982), some of the image-makers who made a huge contribution to African American children's literature are Lucille Clifton, Eloise Greenfield, Virginia Hamilton, Sharon Bell Mathis, and Walter Dean Myers. Illustrators who made significant contributions to depicting the African American experience are Jerry Pinkney, Tom and Muriel Feelings, and John Steptoe.

Caldecott Honor Book artist and multiple Coretta Scott Award winners Tom Feelings and Eloise Greenfield collaborated in 1981 to create a poetic look at African American children in the book *Daydreamers*. Feelings' illustrations elicit the essence of Greenfield's evocative words through his drawings of African American males and females caught in motion or silent and dreamy, yet all unique.

Jeanne Cobb (1995) did a study focusing on the image in children's fiction in books published between 1989 and 1991. It was a descriptive study involving both quantitative and qualitative content analysis. Four research questions were developed to determine the treatment of Hispanic Americans and African Americans in contemporary children's trade books listed by the Children's Book Council with respect to image, characteristics, and stereotyping. The participants involved 10 Hispanic American and 31 African American fictional books appropriate for the elementary level. Two instruments were used to compile the results: a list of verbal stereotypes from the research of D. Katz and K. Braly, and a character analysis instrument developed by B. Berleson and S. Salter.

They concluded that the number of fictional books on these two minority groups were: (1) appallingly limited; (2) the books were in general favorable in their treatment of these minority groups; (3) stereotypes were present, but mostly positive and not explicitly stated; and (4) images of socio-economic status of these minority groups were less favorable than descriptions of their physical appearance, attitudes, and interpersonal relationships.

1990s: Greater Visibility of Positive Male Images

The role of males in picture storybooks changed for the better. There were more positive images of African Americans engaged in activities that are unique to their cultural experience. Walters, Webster, and Cramer (1998) teamed together to create an extensive bibliography: *Never Ending...Never Done...Multicultural Literature for Younger and Older Children*. The bibliography contains over 1400 book titles dating back to the 1970s focusing on Africans, Asian, Latino/Hispanic, and Native Americans. Within this bibliography, a distinction is made between those works written and illustrated by someone from that particular ethnic group and those containing valuable observations by authors and illustrators outside of that experience.

Books which contained positive images of African American boys and men included *When I Am Old with You*, by Angela Johnson (1990) and illustrated by David Soman, about a young boy who demonstrates his love and adoration for his grandfather. He is willing to do whatever quiet activities his grandfather chooses such as playing cards or just sitting in the rocking chair swatting flies. The pictures depict a deep affection for each other. Johnson won a Coretta Scott King Honor award for this work. A Newberry

and Coretta Scott King Honor Book Award went to author Christopher Paul Curtis in 1995 for *The Watsons Go to Birmingham*. This award winning novel for middle school readers is about ten year old Byron who left Flint, Michigan, a town not far from Detroit, to visit his grandmother in Birmingham, Alabama. His parents felt that a slower pace lifestyle of the South would be better for their urban children. Their trip is right in the middle of the racially charged summer of 1963. They experience racial hatred that they were not accustomed to in the north.

Another Coretta Scott King and Newbery Award went to Christopher Paul Curtis for *Bud, Not Buddy* (1999). This book for middle school readers is set in the Depression era. It is about a motherless ten-year-old boy named Bud who is determined to find his father. He uses his only clue, a flyer about Herman E. Calloway who is a bandleader. Bud's journey leads him to hop trains, and have other adventures as he makes his way to find the family he never knew. Books about pride in hair texture of African Americans as *Happy to Be Nappy*, (hooks, 1997) illustrated by Chris Raschka began to appear. Nappy or kinky hair that once brought shame in so many illustrations of the 1800s became the center of identity formation for African Americans. They expressed pride in their hairstyles whether it be dreadlocks, afros, cornrows, or any other style that displayed cultural differences. Aside from skin color, hair was frequently cited as the most common signifier used to classify and judge African American men and women.

The 21st Century – Male Images Improve

Children's literature grew by leaps and bounds in the first five years of the new millennium. Blackness is celebrated and multiculturalism is embraced in picture

storybooks for children. *Shades of Black: A Celebration of Our Children*, (2000) brought together husband and wife team Sandra and Myles Pinkney to photograph African American children. As one good example, this book allows the reader to see that black people come in all hues, eye colors, and hair textures. It served to counteract negative images and value judgments of African American males and females.

Donna Rand and Toni Trent Parker (2001) teamed to compile an annotated guide to 350 books about the adventures and lives of African American boys and men entitled *Black Books Galore! Guide to Great African American Children's Books About Boys*. The selections are of every possible genre and from a diverse group of authors and illustrators. The books feature characters from all occupations, but they have many things in common. Most importantly, they are about positive, active male characters that are bright, strong, and capable.

Authors of the 21st century must continue to create more stories and novels about positive fictionalized and non-fictionalized African American characters in children's literature. Walters (2002, p. 75) notes at least nine key characteristics in Afrocentric books "suitable for all children's nutrition." The books should do the following things:

1. Provide positive images that leave lasting impressions.
2. Provide accurate, factual information that is enjoyable.
3. Provide cultural authenticity and cultural specificity.
4. Contain meaningful stories that reflect a range of African American values and lifestyles.
5. Provide a clear and positive perspective for people of color in the 21st century.

6. Present nonfiction that is relevant to today's issues.
7. Contain materials that are self-affirming.
8. Portray strong three-dimensional characters.
9. Contain attractive graphics.

Many of the twenty-first century authors and illustrators of African American children's literature offer youngsters authentic positive portrayals of male and female characters that inspire. Ellen Levine's (2007) story *Henry's Freedom Box* is a true account of Henry Brown a slave who mailed himself to freedom. Penetrating portraits reveal Henry's experiences, thoughts, and feelings. Ezra Jack Keats and Coretta Scott John Steptoe New Talent Award winning book *Freedom Summer* (Rappaport, 2005), recounts the story of two boys, one African American, and one white during the aftermath of the Civil Rights Act. Their friendship endures as the town's swimming pool is filled with tar, shops and roller rinks close, all in an effort to prevent inclusion of blacks. Nikki Grimes wrote a series of poems to tell stories about a character named Danitra Brown. One selection, *Danitra Brown Leaves Town* (2002), recounts the friendship between Danitra and a boy named Zuri Jackson.

Biographies were written for elementary age children illustrating the life of Martin Luther King, Jr.; David "Panama" Francis, a famous jazz drummer; Stevie Wonder, and the life of famed champion cyclist Major Marshall Taylor. *Martin's Big Words* (Rappaport, 2001) is a Caldecott and Coretta Scott King Illustrator Honor Award winning book that presents a picture book biography of the life of Martin Luther King, Jr. The author used quotes from many of Dr. King's speeches to tell the story of his life.

Many of the books were about males with musical talents as *David Gets His Drum* (Francis and Reiser, 2002), *Jamari's Drum* (Bynum and Jackson, 2004), *Little Stevie Wonder* (Troupe, 2005), and *The Music in Derrick's Heart*, (Battle-Lavert, 2000).

Almost all of the books were award winning books and those that did not win an award for writing or illustrations, were usually written by award winning authors. Many of the authors won awards such as the Coretta Scott King Honor Award, Caldecott, and Newbery Award for earlier literary works. Notable award winning authors are Walter Dean Myers, Angela Johnson, Jacqueline Woodson, and Nikki Grimes.

Some of the books of the 21st century are set in the early 1900s when segregation and Jim Crow laws ruled the land. *The Legend of Buddy Bush* (Moses, 2004) was set during a time when the, Ku Klux Klan terrorized blacks and lynching was the chosen method of practicing hatred. Buddy's 1947 arrest, trial, escape, and eventual acquittal rocked a community and sparked international interest. *Papa's Mark* (Battle-Lavert, 2003) is set right after blacks were given the freedom to vote. Unfortunately, many remained unable to vote because they could not pass literacy tests that whites were not required to take. *Papa's Mark* depicts a father Samuel T. Blow who is anxious to exercise his right to vote and works hard with the support of his young son to sign the ballot with a complete signature instead of an "X." The story had great significance as it pertains to the value of literacy.

Two influential books for middle school and high school male students are *the first part last* (Johnson, 2003) and *Bronx Masquerade* (Grimes, 2002). Both discuss very real issues that young males face today as teenage pregnancy, love, and friendship. These

novels include voices told through the eyes of adolescent boys which add credibility and make their stories more appealing.

On an elementary level, the warmth of the relationship between a grandmother and grandson was evident in the books *Full, Full, Full of Love* (Cooke, 2003) and *Little Cliff's First Day of School* (Taulbert, 2001). Both stories are about family and how much having a loving and supportive family means to a boy. The poem *A Wreath for Emmett Till*, (Nelson, 2005) was especially poignant and meaningful because 2005 marked the 50th anniversary of his death. Till's positive image, though short lived, is etched in the memory of African Americans as a symbol of why it is important to exercise hard fought equal rights such as voting to insure freedom of the race.

Summary of the Historical Perspective of African American Males in Children's Literature

A historical perspective of children's literature and the portrayal of black male characters was discussed from the late 1800s through the 21st century. Growth is noted in the quality and frequency of authentic portrayals of African Americans in text and illustrations of children's literature within the last twenty years. Reading strategies and skills combined with effective instruction of teachers who are willing to create a culturally responsive classroom environment may provide an impetus for boys to read. One way to influence attitudes towards reading of urban males is to expose them to quality children's literature. Teachers can, and have a responsibility to offer a wide selection of reading material that portray positive male images than can motivate boys to read for pleasure and some to become writers.

Overview of *Open Court Reading*

Open Court Reading grew out of the Science Research Associates (SRA) Reading Mastery program from the 1960s and 1970s. It began in Houston, Texas in the mid 1990s under the auspices of the National Institute of Child Health and Development (NICHD). Barbara Foorman of the University of Texas led a team of researchers at the Houston Medical Center to study the impact that a variety of reading programs had on reading achievement of low performing economically disadvantaged first and second grade children. They collected data on children in different classrooms in the Alief Independent School District in Texas, each using one of four different reading programs. Foorman and her team of researchers found that in classrooms where *Open Court Reading* was the core program, students improved in word reading more than children in other classes. They concluded that there were advantages for reading programs that utilize direct explicit instruction in the alphabetic principle for struggling learners (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998). The favorable outcome of this study translated into large profits for the publisher due to instructional policies dictated by *No Child Left Behind* and funding in many urban districts throughout the country as in Illinois, Texas, Michigan, and California.

What is Open Court Reading?

Open Court Reading is a language arts program considered by many to be a scientifically research-based curriculum with a foundation in systematic, explicit direct instruction of phonemic awareness, phonics and word knowledge, comprehension skills and strategies, inquiry skills, writing and language arts skills and strategies. It is an

intensive, rigid, and scripted program that some believe leaves little time for any individualization or differentiation. The literature in *Open Court Reading* is divided into several thematic units per grade level. It includes a variety of literary genre as realistic fiction, poetry, plays, fantasy, information articles, short stories, and essays. The program is organized into three strands. The green strand focuses on preparing the students to read using phonemic awareness, phonics instruction, and word knowledge. In the red strand, students read and respond to text with guided instruction in comprehension strategies and skills. The language arts strand is blue and covers writing and spelling.

Criticisms of Open Court Reading

The results of this study were scrutinized by critics because researchers were financially supported by *Open Court Reading's* publisher at the time, Blouke Carus (Moustafa & Land, 2001). In California, once the program was presented to the California State Assembly Education Committee in May of 1996 and accepted, it was purchased by McGraw Hill. Then another version was actually published. This occurred after peer review in the *Journal of Education Psychology* in 1998 using different data (Taylor, 1998). Another problem is that favorable data supporting this reading program from both versions of *Open Court Reading* came from classrooms where federal reduced and free lunches were at a minimum. Children who are not economically disadvantaged experience greater success on standardized exams than those living in poverty. According to Foorman et al. (1998), the school that had 71% of the students on the federal lunch program had the lowest achievement scores on the statewide test in the third grade. Other problems included issues with the way the data was aggregated and the operational

definition of reading used by Foorman. The definition equated reading with pronouncing print words out of context. The author's contention is that if a child can pronounce a print word then the child is reading without regard to comprehension.

Effectiveness of Open Court Reading

In California, a study was conducted comparing the average reading scores on the state test of classrooms using *Open Court Reading* against comparable schools using non-scripted programs in one large urban school district. It found no significant difference in the average second grade reading scores in *Open Court Reading* and comparison schools. Results indicated that no *Open Court Reading* school had positive differences of ten or more percentile points between second and fifth grade whereas 21% of the comparison schools did. Schools where *Open Court Reading* was used long term had negative differences of ten or more percentile points between second and fifth grade twice as often as schools using non-scripted programs. Communities where 97-100% of the children receive free or reduced lunches were significantly more likely to be in the bottom quartile of the state achievement test in reading than schools using non-scripted programs (Moustafa & Land, 2001).

The Lemoore School District in California credits *Open Court Reading* with helping their elementary students experience a steady climb in reading over a three year period. In 1998 scores in reading indicated that only 38 percent of their second graders were reading at or above the 50th percentile. By 2001 the scores increased to 51 percent. The Sacramento Unified School District reported similar growth after using *Open Court Reading*. Demographics for their district indicate 22 percent African Americans and 23

percent Hispanic students. Test scores for third graders went from 29 percent in 1997-1998 to 56 percent in 2001. Kelso Elementary in Inglewood, California reported growth after implementing *Open Court Reading*. Seventy eight percent of the students are on free and reduced lunch. Grade three student scores jumped 20 percentile points in reading over a three-year period. Curtis Creek School District in Sonora recorded an impressive increase in reading of second graders after using *Open Court Reading*. The second graders in their district went from 60 percent reading at or below the 50 percentile in 1999 to 80% in 2001. Public School 161 in Crown Heights, New York has a 90 percent of their student population is African American. After using *Open Court Reading* for three years, 80 percent of their third graders met the minimum requirement in reading and 38 percent of their third graders were reading at a sixth grade level. Further, they reported that their attendance was up and discipline was down. These and other success stories in Texas and Florida can be found by accessing Results with *Open Court Reading* at the following website (http://www.mheducation.com/programs/files/open_court_results.pdf).

Investment in Open Court Reading

The district in this study invested approximately \$19 million dollars in Open Court Reading materials and training during the 2001-2002 school year. In the district's response to the No Child Left Behind legislation and sagging reading scores, 80 percent of the staff and more than 10,000 hours of professional development was committed to learn the *Open Court Reading* methodology and best practices for teaching children to read. According to data reported during the 2002-2003 school year, the state's standardized test indicated reading scores for the district's fourth graders rose by 22

percent (33 percent to 55 percent), and by nine percent for the 7th graders. Gains were also reported in fifth grade science (seven percent) and social studies (one percent).

Summary of Overview of District's Core Reading Program: *Open Court Reading*

Open Court Reading is a commercially published program with an emphasis on phonemic awareness, phonics, fluency, vocabulary, comprehension, literature, oral language and writing. One of the strongest features of the program is that it has a differentiated instruction component complete with ideas on how to diversify lessons for struggling students. *Open Court Reading* has brought about positive effects in reading over the time it has been used in the district and in many other school systems as well, but for it to be effective there must be quality instruction. It is important to note that programs do not teach, teachers teach.

Summary of Chapter Two Review of Literature

This chapter discussed how using visual tools could help organize thinking and support comprehension in all learners. A specific focus of this chapter was on eight visual mapping designs called Thinking Maps®, which link to fundamental thinking processes. There was some discussion on how this “common visual language” was brought into school districts, its’ implementation, and effectiveness. The visual organizers described in this chapter can be used with read alouds as a strategy to increase reading skills and listening comprehension. Insights of urban male students and how teachers' literary choices may impact student attitudes and success in reading were also discussed.

An extensive look at the availability of children's literature and the portrayal of the African American male was reviewed as it impacted perceptions of readers throughout the 20th and into the 21st century. Finally, a discussion of the district's core reading program, *Open Court Reading* and its success around the country was detailed. The common thread throughout this chapter is what can be done to engage boys with literature in a meaningful teacher directed way where comprehension is increased and positive attitudes are fostered towards reading.

CHAPTER THREE

DESIGN AND METHODOLOGY

The purpose of this mixed study inquiry was to examine whether and how 105 educational personnel in a large Midwestern school district utilized Thinking Maps® with students in elementary school general education and special education classrooms. Akin to the overall purpose, this study examined the use of Thinking Maps® with 30 boys in three elementary classrooms: one second grade, one fourth grade, and one for youngsters with learning disabilities, with a focus on children's comprehension and attitudes toward reading with respect to the district's core reading program, *Open Court Reading*, and literature read-alouds.

According to McMillan (2004), a mixed method study is one in which “both quantitative and qualitative approaches to gathering, interpreting, and reporting data are used together in a single study” (p. 288). Using triangulation for the qualitative portion of the design allowed the researcher to provide a picture of the phenomena being studied, emphasizing quantitative results and qualitative process. Analysis and data gathering is not limited to one type, but can be collected sequentially and concurrently. The strengths of each method offset the weaknesses of the other method so that together they provide a more complete set of data (McMillan, 2004, p. 289).

This investigation was conducted across five consecutive months whereby quantitative and qualitative data were collected. The remainder of this chapter presents the mixed methodology for this investigation that includes: research questions,

participants and site selection, methodological instruments, data collection, and data analysis. The quantitative methodology will be followed by the qualitative.

Research Questions

The following questions were central to this study:

1. What are teachers' perceptions of their use of Thinking Maps® following district training?
2. How do Thinking Maps® influence attitudes and comprehension towards reading of urban male students in two elementary school general education classrooms?
3. How do Thinking Maps® influence attitudes and comprehension towards reading of urban male students in an elementary school special education classroom?

Quantitative Aspects of this Mixed Design

The quantitative aspects of this study involved administering a survey (Appendix C) to educational personnel who were trained in Thinking Maps®. The ten-question survey was designed to assess teachers' perceptions of Thinking Maps®. It was sent to 201 educational personnel. One hundred and five participants completed and returned the survey to the researcher. This data enabled a descriptive analysis of teachers' perceptions of their use of Thinking Maps® following training and the response to Research Question One.

Participants and Site Selection

A database of approximately 400 educational personnel trained in Thinking Maps® was provided to the researcher in September of 2007 by the special education department to send a cross-sectional survey for the quantitative portion of the study. The database was sent to the district's Office of Research, Evaluation, and Assessment by the researcher for approval in utilizing it to survey participants on their perceptions of Thinking Maps®. In the *year and a half* it took to acquire consent to conduct research many of the educational personnel in the database were no longer at the schools listed. From December 2007 through December 2008, there were 35 school closures and declining district enrollment. During the 2006-2007 school year the district boasted an enrollment of 118,394 students. The enrollment dropped to 94,054 by the end of December of 2008 (Council of Great City Schools, 2008). This impacted availability for surveying staff trained in Thinking Maps®. Many teachers were laid off, terminated, others transferred to schools that remained open, some retired, and one was deceased. The series of personnel changes made it difficult for the researcher to track potential participants to their specific work locations. Of those educational personnel named in the database, the researcher was restricted by the district from surveying directors, principals, and supervisors. Therefore, the database of potential participants was significantly reduced.

The researcher was asked by the Office of Research, Evaluation, and Assessment to provide a list of schools where surveys needed to be mailed. After reviewing the list of school closures, eliminating administrative personnel, and calling schools in an effort to

locate teachers who were trained in Thinking Maps®, 121 schools were selected. Each of the 121 schools selected by the researcher contained one or more teachers who were trained in Thinking Maps® during the period of November 2005 through December 2008. In some cases, the entire staff was trained. Due to district protocol, no survey could be mailed to a school without the approval of the school principal. The Office of Research, Evaluation, and Assessment faxed each principal the researcher's 63 page proposal rather than the researcher's 21 page summary to request permission to survey teachers. The principal was asked to read the proposal and sign the first page of a memorandum giving the researcher approval to survey teachers. The signed memo was then faxed back to the Office of Research, Evaluation, and Assessment and the researcher was notified. Whenever a principal granted consent, the researcher received an e-mail indicating the name of the school where surveys could be mailed. The e-mail always ended with the following with the last sentence written in bold capital letters.

“Please note, the Office of Research, Evaluation, and Assessment will contact the selected schools and provide you with the names of the schools that have agreed to participate in your research. **NO CONTACT SHOULD BE MADE WITH THE SCHOOLS AT THIS TIME.**” (Appendix Q)

Additionally, no reference could be made to the school principal that the researcher was a district employee or a certified district trainer for Thinking Maps®. Problems occurred when principals found that they lacked the time to read the long 63 page research proposal. This caused them to either put it aside or dispose of it. Many principals expressed their preference for a shorter one or two-page summary outlining the

researcher's mixed research design study. One principal reported calling the district's research department to seek clarification on the researcher's proposal. Due to the district's inability to answer questions about specific details, the principal declined to participate in the study.

One month after gaining approval for the study, only one principal had responded. After three months, a mere ten principals of the 121 schools selected by the researcher had replied and only 40 surveys returned. Some of the consenting school principals had just one person who was trained in Thinking Maps®. It is unclear whether all 121 schools initially selected were sent the proposal detailing the research study. By the end of four months, more principals granted approval directly to the researcher to use their school to survey teachers. This resulted in a total of 201 surveys mailed of which 105 participants returned them, thus representing a total of 43 schools.

Quantitative Methodological Instruments and Data Collection

This researcher developed instrument, *Survey of Teachers' Perceptions of Thinking Maps®* (Appendix C) was designed as a four page booklet to obtain demographic information, responses to ten multiple-choice questions about teacher perceptions of Thinking Maps®, and to enable narrative comments from those responding anonymously. The survey was piloted with a small group of special education Resource Room Teachers trained in Thinking Maps® who were attending a workshop during the 2007-2008 school year. The teachers concurred the survey was clearly understandable, short, and easy to complete. Each respondent took less than ten

minutes to complete the survey that served as an interviewing instrument to investigate the perceptions and frequency of use of Thinking Maps®.

Insights from the pilot administration facilitated the four-phase mail-out as recommended by Salant and Dillman (1994). The first mail-out was a short Advanced – Notice Letter (Appendix D) to all members of the sample. The second mail-out, one week later included the *Survey of Teachers’ Perceptions of Thinking Maps®*, the Consent Letter (Appendix E) and a preaddressed return envelope with postage. The third mail-out was the Reminder Notice ((Appendix F) to all members of the sample and this was sent four to eight days after the *Survey*. A fourth mailout consisted of a Personalized Cover Letter (Appendix G) and a preaddressed return envelope with postage was sent to all non-respondents. All mailings were sent via U.S. mail to each respondent’s worksite. The surveys were coded which enabled responses without compromising anonymity, but enabled follow-up letters to non-respondents.

Table 1 provides a summary of the 105 participants. Eighty-six worked as teachers within general and special education classrooms and 19 others were itinerant personnel. Itinerant personnel work in multiple school locations.

Survey questions were designed to gather data on the frequency of use and general perceptions of Thinking Maps® as an instructional tool in the classroom. It enabled a descriptive analysis of teachers’ perceptions of their use of Thinking Maps® following training and the response to Research Question One, “What are teachers’ perceptions of their use of Thinking Maps® following district training?”

Table 1

Summary of Participants in Quantitative Portion by General and Special Education

Classroom Setting	Teachers	Itinerant	Total
General Education	30	10	40
Special Education	56	9	65
Totals	86	19	105

The survey instrument and administration process described above was a cross-sectional, self-administered questionnaire designed specifically for this research with the data collected at one point and time as recommended by Creswell (2003).

Quantitative Data Analysis

Quantitative analysis for the *Survey of Teachers' Perceptions of Thinking Maps®* was analyzed using the *Statistical Package for the Social Sciences* to report numbers and percentages that described respondents' choices to the multiple choice questions. The narrative comments (Appendix R) were coded separately by each survey question. Information was reported for the 105 respondents who returned the survey.

Qualitative Aspects of this Mixed Design

The qualitative aspects of this study involved classroom observations of male students in three public school elementary classrooms from two schools in a large Midwestern urban school district as they engaged in reading activities with the use of Thinking Maps®. Because of the mixed research design of this investigation, the

qualitative portion utilized triangulation to allow the researcher to provide a comprehensive picture of the phenomena being studied. Formal and semi-structured conversational interviews of male students and teachers, participant observation, Thinking Maps® generated by the student, and a survey to examine students' attitudes about reading enabled the researcher to provide greater credibility in the findings. The focus was on students' comprehension and attitudes toward reading with respect to the district's core reading program, *Open Court Reading*, and literature read-alouds provided by the researcher. The use of Thinking Maps® yielded important information about strategies to promote reading comprehension and motivation to read in urban elementary school males. It provided additional insights into Research Question Two, "How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in two elementary school general education classrooms?" and Research Question Three, "How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in an elementary school special education classroom?"

Participants

The participants in the qualitative portion of this study included one second grade teacher, one fourth grade teacher, one learning disabilities teacher, 29 African American male students, one second grade Hispanic male student, and the researcher. The total classroom population in all three classrooms included 54 students (Table 2). The teacher participants were also included in the quantitative portion of the study. Through the

Table 2

Student Population within Each Classroom

Grade Level	Males	Females	African American	Hispanic	Caucasian
Second	11	13	23	1	0
Fourth	9	6	15	0	0
Learning Disabilities	10	5	15	0	0
Total	30	24	53	1	0

process of purposeful sampling three teachers trained in Thinking Maps®, from November 2005 through December 2008 were selected to participate. Purposeful sampling means that a particular program has been selected to study and specific individual teachers will be chosen who are informative about the topic (Creswell, 2003; Gall & Gall, 1996; McMillan, 2004). For this study, these are teachers who utilized Thinking Maps® as a strategy within the realm of daily classroom instruction to help students organize thinking and comprehend text on a consistent basis. The researcher, a district trainer for Thinking Maps®, selected those three teachers who were successfully integrating the program with reading instruction. All classrooms use *Open Court Reading* and were expected to follow the curriculum pacing charts. For students placed in special education, pacing and instruction were differentiated to accommodate the diverse needs of individual learners. While female students benefited from the treatment of Thinking Maps®; male students were the focal point in this study.

Site Selection

The qualitative portion of this study was conducted during the winter and spring of 2009 over a five-month period in two urban Midwestern public elementary schools serving between 98 and 100% African American students in kindergarten through fifth grade. The number of people living below poverty in the state where this study was conducted was 16.2% in 2009 as compared with 14.5% a year earlier (<http://www.census.gov/prod/2010pubs/acsbr09-1.pdf>). The poverty rate of children under 18 in the city where the district in this study is located was 36.4% in 2009 (U.S. Census Bureau, 2010). For one of the two schools information provided by the principal of the fourth grade and learning disabilities teacher revealed: 55 teachers, 328 students which includes 319 African Americans, four Caucasians, one Hispanic, two Asian Pacific students, and two Native Americans. The school had a library, but has not had an active librarian in many years. The school has made adequate yearly progress (AYP) for the last three years. The community surrounding the school has a plethora of vacant lots filled with an overgrowth of weeds and grass. Thirty-three percent of the students lived below the poverty level and 90% received free or reduced lunch. There are many historic sites within the radius of the school including a facility currently used to feed the homeless, a historic cemetery established in 1846, and a well known soda pop beverage company.

The second grade teacher worked at the second elementary school site that had a total of 23 teachers on staff and a school population of 376 students which included: one American Indian, one Hispanic, and 374 African Americans. The school made adequate yearly progress (AYP) for the last three years. It was one of six high performing

schools out of 300 elementary schools in the district that was awarded a \$100,000 Skillman Foundation's Good Schools: Making the Grade Initiative grant in 2007. Seventy-four percent (74%) of the students are eligible for free or reduced lunches. The school is located in a thriving community filled with occupied homes, a well known Catholic Church, a work training facility, and a public library. The school had a library, but no active librarian. These two school sites enabled studying the phenomenon of Thinking Maps® as it naturally occurred within the elementary classroom context, which is crucial in interpreting the behavior (McMillan, 2004).

Qualitative Methodological Materials

Materials in the qualitative aspects of this study consisted of: (1) reading selections from the students' anthologies in their core basal program, *Open Court Reading*; (2) read alouds of children's literature approved by the district's administrative personnel in the Department of Literacy and provided by the researcher; (3) the eight Thinking Maps® that related daily to facilitate comprehension; and (4) the Elementary Reading Attitude Survey (Appendix P) which was used to assess attitudes towards reading before and after instruction with Thinking Maps®.

Open Court Reading Anthologies

Student anthologies of the *Open Court Reading* basal program were organized in both narrative and informational text consisting of social studies, science, and other universal themes. Each unit was organized by a theme which gave the reader a point of reference to connect thinking, learning, and facilitate discussion. Stories were written in a variety of genres that reflected non-fiction and fiction. Poetry was included as well.

Selected Approved Children's Literature

The *Selected Approved Children's Literature Books* (Appendix L) for this study were chosen by the researcher and approved by the district's supervisor for Library Media Specialists and the Executive Director for the Department of Literacy. With respect to the developmental appropriateness of the children, the literature was intended to actively engage students with texts through meaningful dialogue and personally relevant character building questions. The selected literary works contained positive male and female characters that potentially motivated and encouraged all students, especially urban males, to achieve their personal best. Books chosen for read alouds were based on the genre and theme from *Open Court Reading* that the students focused on within a specific Unit. As a result of a grant awarded to the researcher, each teacher received fourteen new hardcover African American Children's literature books to add to their classroom library. Additionally each student received a new hardcover African American Children's literature book to take home. The books were chosen by the students and teachers from the approved literary works selected by the researcher at the conclusion of the study.

Multiple Thinking Maps®

Multiple Thinking Maps® (Appendix A) based on Hyerle's eight formats were generated prior to, during, and/or after listening to read alouds of children's literature or engaging in an *Open Court Reading* lesson to gauge students' use of Thinking Maps® to facilitate meaning.

Elementary Reading Attitude Survey (ERAS)

The Elementary Reading Attitude Survey (Appendix O) developed in 1990 by Michael McKenna and Dennis Kear is a public domain document that can be retrieved online (<http://www.reading.org/Library/Retrieve.cfm?D=10.1598/RT.43.8.3&F=RT-43-8> McKenna. PDF). It was administered at the onset and at the end of the study.

Qualitative Data Collection

Observations were documented as fieldnotes. Formal and semi-structured conversational interviews of the three teachers and 27 male students were conducted. The observations, fieldnotes, interviews and artifacts enabled understanding the phenomenon through various lenses and thus triangulation data sources, whereas the Elementary Reading Attitude Survey (ERAS) was used to examine the male students' attitudes towards reading. Artifacts were collected of student generated Thinking Maps® as they provided samples of students' performance. In addition, the researcher as a trained teacher and participant observer brought added pedagogical interpretive dimensions to the qualitative data collection.

Observations and Fieldnotes

Observations took place once a week in each classroom over a fourteen-week period. During the weekly visitations, notes were recorded in the researcher's journal that reflected observations of instructions inclusive of commentaries of the dialogues between the researcher, teachers, and students. The fieldnotes provided detailed raw data of what was observed, as well as, this researcher's interpretations (McMillan, 2004). Digitally taped recordings augmented fieldnotes during each visitation, which enabled the

researcher to verify, clarify, and repair observational notes during post observational review of the notes following each observation. Everything seen, heard, or experienced constituted observations. These fieldnotes were both descriptive and reflective. They were descriptive because they denoted pictures and images, words, maps, drawings, and other physical artifacts that were considered key data. They were reflective because the researcher brought her perceptions, ideas and hunches about what occurred. Oftentimes what appeared to be inconsequential added important insights garnered during this investigative process.

Interviews

Formal and semi-structured conversational interviews of the three teachers and 27 of the 30 male students were conducted using a framework of questions for which responses were recorded via journalistic notes that were verified or supported by audio tapings during each interview. The interviews allowed the researcher to gain a deeper insight into how using Thinking Maps® affected student achievement in comprehension and the teacher's perception of its effectiveness. Each interview was audiotaped to support relevant information to the interviews.

Teacher interviews began with questions from the survey. Additional probing questions (Appendix M) were included to obtain further information about the classroom use of Thinking Maps®. The teachers' individual classrooms were the location of their interviews which their planning periods in their individual classrooms. The interviews lasted approximately 30 minutes, thus, they potentially provided further insights to the weekly conversations and observations that were noted in the researcher's fieldnotes.

Exit interview questions (Appendix N) were posed face to face with 27 of the 30 boys who were in attendance at the end of the study. These interviews lasted approximately 15 minutes each. Semi-structured questions were asked to obtain in-depth information about using Thinking Maps® with literature read alouds. The second grade boys were interviewed one on one in the school library across the hall from their classroom. The fourth grade boys were interviewed individually in a lounge area of their school designated for teachers and itinerant personnel. The learning disabled male participants were interviewed one on one in a classroom next door to their teacher. Likewise, the exit interviews with the male students also enabled additional insights about the conversations, observations, and the boys' perceptions of their instruction.

Administration of the ERAS

The researcher administered the Elementary Reading Attitude Survey (Appendix O) at the beginning and end of the study. In order to prepare the youngsters to respond to the survey, the researcher enlarged the *Garfield* figures onto a transparency for the overhead projector to familiarize them with the response process. By discussing the emotion each *Garfield* character represented, it helped to familiarize students with their response options. Subsequently, for the actual administration process, each question was read aloud twice to the students; and each student responded on his or her survey copy by circling one of four *Garfield* cartoon figures that best described their feelings about reading. The *Garfield* figure on the far left was the happiest; the second *Garfield* is a little happy; the third *Garfield* is a little upset; and the last *Garfield* in the row is very upset.

Participant Observer Role

As a participant observer, the researcher interacted with the students and teacher while recording, gathering data, and observing (McMillan, 2004). In this role, the researcher established a rapport and built a relationship with the teacher and student participants.

Artifacts

The artifacts were Thinking Maps® that were hand drawn by the students either on an independent basis or with teacher guidance (Appendix S). Artifacts also included Thinking Maps developed and posted within the classroom by the teacher. Some Thinking Maps® were developed by the teacher using student input. The artifacts were used as a tool for discussion and observation to determine if students understood which thinking process was linked to each map.

Qualitative Data Analysis

The audiotaped interviews and digital recordings of students and teachers were transcribed verbatim and used to confirm the researcher's written notes. Student and teacher talk was coded separately using the constant comparative method of data analysis to examine for emerging themes and patterns (Glaser & Strauss, 1967). Data analysis for the qualitative portion involved a variety of steps. The data was organized and prepared for analysis. The interviews and fieldnotes were typed and sorted according to a coding system. After reviewing all the data and reflecting on the overall meaning, general ideas were extrapolated to gain an impression of the information. The information was organized into chunks. Each interview was analyzed to determine what main thoughts

were conveyed. The topics or themes were converted into major categories and an interpretation of the data was made (Creswell, 2005).

Data Collection Timelines

Data collection from the *Survey of Teachers' Perceptions of Thinking Maps®* began in February 2009 and was completed in June 2009. The triangulation design enabled the researcher to collect both the quantitative data and qualitative data simultaneously. Table 3 summarizes the notification methods used for survey participants.

The process for the qualitative portion of the study began in February 2009 that made way for the weekly participation of the teachers and students. The 14 weeks of classroom instructional interactions of this study spanned March 2 to June 12, 2009, responsive to holidays in accordance with the district's academic calendar. Table 4 outlines the timeline for the qualitative portion of the study.

Table 3

Data Collection Timeline – Quantitative Data

Data Source	Timeframe
Short Advance Notice mailed	February – May 2009
Consent Letter and Survey mailed	February – May 2009
Reminder Notice	March – May 2009
Personalized Cover Letter	March - May 2009
Data Collection	February – June 2009

Table 4

Data Collection Timeline – Qualitative Data

Data Source	Timeframe	Purpose
General Education Classroom	February 2009	Identified one second grade and one fourth grade classroom for observation; met with teachers and principal(s); distributed consent letters
Special Education Classroom	February 2009	Identified one learning disabilities classroom for observation; met with teacher and principal; distributed consent letters
Set up schedule for classroom visitations	February 2009	Determined best day of week for students and teacher; collected consent forms
Administered <i>Elementary Reading Attitude Survey</i> (ERAS)	February - March 2009	Determined attitudes about reading before Thinking Maps® instruction
Interviewed teachers using Survey of Teachers' Perceptions of their use of Thinking Maps®	March 2009	Accessed perceptions of Thinking Maps® and their impact on student attitudes and comprehension in reading
Observations of male students	March 3 - June 12, 2009	One day per/week visitations to each classroom for 14 weeks
Exit interviews of male students	June 2009	Determined impact of Thinking Maps® instruction
Administered ERAS	June 2009	Surveyed attitudes of students' reading following Thinking Maps® instruction
Interview of teacher	June 2009	Determined male student impact on reading

Summary of Chapter Three Design and Methodology

This chapter discussed the mixed research design used to collect and analyze data sources to address the three research questions about Thinking Maps®. Table 5 summarizes the data collection and analysis of both the quantitative and qualitative aspects of this study.

The Elementary Reading Attitude Survey provided quantitative estimates of students' attitudes towards academic and recreational reading. Scores offered qualitative insight into beliefs about reading and may suggest the need for further exploration into the student's interests through inventories, open-ended sentences, and interviews.

The quantitative portion of this study included a ten question multiple-choice survey that was sent to approximately 201 educational personnel who were trained in Thinking Maps® from November 2005 through December of 2008. One hundred and five respondents commented on their perceptions and frequency of use of Thinking Maps® as a common visual tool within the classroom. Questions about their observations of students' reading comprehension performance while using Thinking Maps® were posed then analyzed by the Statistical Package for the Social Sciences. This data was used to address Research Question One.

Methodological materials within the qualitative portion of the study included reading selections from *Open Court Reading*, children's literature books, eight Thinking Maps®, and the Elementary Reading Attitude Survey (ERAS). Qualitative data collection took place once per week from February 2009 through June 2009. It included individual interviews of teachers and male students within one second grade and one fourth grade

Table 5

Research Questions and Summary of Quantitative and Qualitative Data Collection and Analysis

Research Question	Data Collection	Analysis
<i>Quantitative</i>		
What are teachers' perceptions of their use of Thinking Maps® following district training?	Survey of Teachers' Perceptions of their use of Thinking Maps®	Statistical Package for the Social Sciences
	Commentary from survey	Verbatim Responses
<i>Qualitative</i>		
How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in two elementary school general education classrooms?	Researcher's Fieldnotes	Summarized Observation
	Interviews of second grade, fourth grade, and Learning Disabilities Teacher	Verbatim Responses
How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in an elementary school special education classroom?	Exit Interviews of Male Students in second grade, fourth grade, and LD classrooms	Verbatim Responses coded for patterns
	Audiocassette & digital taped recordings	Used to back up interviews
	Physical artifacts Student generated Thinking Maps®	Holistically interpreted by the teacher
	Elementary Attitude Reading Survey	Pre and post study comparison scores

the interviews, observational fieldnotes, student generated Thinking Maps®, and pre and post study comparisons of the ERAS. Topics were organized into major topics or themes and converted into major categories for interpretation of the data. The qualitative data addressed Questions Two and Three. Quantitative and qualitative data were collected concurrently over a period of five months.

CHAPTER FOUR

QUANTITATIVE RESULTS AND ANALYSIS OF DATA

The overall purpose of this mixed method research design was to examine if and how teachers in a large urban Midwestern district used Thinking Maps® (Appendix A) with students in elementary school general education and special education classrooms. A total of 105 participants responded to a ten question multiple choice survey. The general education and special education teacher participants taught within a variety of academic disciplines in elementary through high school grades. Itinerant personnel serviced one or more school buildings providing support in both academic and behavioral areas. Many of the elementary and middle schools in the district merged due to school closures; therefore, some of the teachers worked in schools that ranged in grade levels from kindergarten through eighth grade. Itinerant personnel who participated in the study were often assigned to all grade levels from elementary through high school. *The Survey of Teachers' Perceptions of Thinking Maps* was used to examine:

Research Question 1

1. What are teachers' perceptions of their use of Thinking Maps® following district training?

This chapter presents results for that question which is the quantitative portion of this investigation. Demographic information is provided to contextualize the 105 educational personnel: 19 itinerant and 86 classroom teachers, their students, and school levels with respect to the aforementioned survey. The school levels within the district of

this study are as follows: Elementary (K-5, K-6); Elementary-Middle (K-8); Middle (6-8); and High School (9-12). Table 6 indicates the number of teacher participants by school levels and mean years of teaching. The itinerant personnel had the longest average mean years of teaching ($m = 27.00$, $sd = 9.68$). Middle school teachers had the shortest mean years in teaching ($m = 14.60$, $sd = 8.59$). The 19 itinerant personnel service multiple grade levels in schools throughout the school district. They use Thinking Maps® for professional development, within small groups, or with individual students. They do not provide service in traditional classrooms. Some itinerant personnel were assigned to one school building while others travel between different schools daily. Table 7 describes

Table 6

Number of Participants and Mean Years of Teaching by School Level

Teaching Level	Participants	Percent	Mean Years of Teaching	SD
Elementary	58	55.2	18.68	9.74
Elementary- Middle	5	4.8	21.60	12.84
Middle	10	9.5	14.60	8.59
High	13	12.4	19.75	8.90
Itinerant	19	18.1	27.00	9.68
Total	105	100.0	20.09	10.16

each of the itinerant personnel by job title. The largest group of itinerant personnel were instructional specialists, with four assigned to general education and two working in special education. Most itinerant personnel surveyed in this study service teachers and students in all grades kindergarten through twelfth grade.

Demographic Information

The number of male and female students was reported on the survey. A greater number of male students were present at each teaching level. Eleven teacher participants did not reply to the question of class size at the elementary level, three did not respond at the elementary/middle level, nine did not reply at the middle school level, and four at the high school level. Some teachers noted that class size varied because they were responsible for teaching several classes. Class size of itinerant personnel was not reported by 17 of the 19 respondents because they do not generally have traditional classrooms in the urban district described in this study. One instructional specialist indicated a class size of 17 boys and 17 girls and one reading coach reported a class size of 15 boys and ten girls. Itinerant personnel were expected to support teachers by “pulling out” students or “pushing in” their services within the classroom setting. Results of the descriptive statistics used to summarize these data are presented in Table 8.

Table 7

Description of Itinerant Personnel

Job Title	<u>Teaching Level</u>			<u>Department</u>		<u>Total</u>
	Elementary	Elementary Middle	K-12	General Education	Special Education	
Instructional Specialist	2	2	2	4	2	6
Teacher Consultant	0	0	2	0	2	2
Reading Recovery Teacher Leader	1	0	0	1	0	1
Placement Administrator	0	0	1	0	1	1
Writing Coordinator	1	0	0	1	0	1
School Social Worker	0	0	1	0	1	1
Behavior Specialist	0	0	3	0	3	3
IEP Compliance Specialist	0	0	1	0	1	1
Literacy Coach	2	0	0	2	0	2
Counselor	1	0	0	1	0	1
Total	7	2	10	9	10	19

Table 8

Descriptive Statistics: Male and Female Students by Teaching Level

Teaching Level	Teacher Respondents	Males	Females
Elementary School	47/58	511	315
Elementary-Middle	2/5	33	22
Middle School	1/10	88	41
High School	9/13	108	57
Itinerant	2/19	32	27
Total	6	772	462

Table 9 presents the Thinking Maps® training for the number of survey participants by their respective year of training: 2005, 2006, 2007, and 2008. Results indicate that the largest group of educational personnel was trained in 2007. Each year the majority of participants who participated in Thinking Maps® training were working in elementary classrooms, followed by the second largest itinerant personnel group. Eleven participants gave no response when queried about their year of training. This may have indicated that they did not recall their year of participation in the staff development.

Self-contained special education and general education teachers were crosstabulated by teaching level for presentation in Table 10. The majority of participants (41) taught in a self-contained classroom on an elementary school level.

Table 9

Number of Teachers and Itinerant Personnel Trained by School Year

Teaching Level	Year Trained					<u>No Response</u>	<u>Total</u>
	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>			
Elementary	1	18	25	8	6		58
Elementary/ Middle	0	2	2	1	0		5
Middle	0	2	4	2	2		10
High	0	1	3	7	2		13
Itinerant	1	8	6	3	1		19
Total	2	31	40	21	11		105

Table 10

Number of Teachers by Level and Subjects Taught

Subject Taught	Teaching Level					<u>Total</u>
	Elementary	Elementary-Middle	Middle	High School	Itinerant	
All	32	0	7	2	0	41
All but science	1	0	0	0	0	1
ELA	0	0	0	3	0	3
ELA and Math	9	1	2	1	0	13
ELA, Math, & Science	0	0	0	1	0	1
Math	3	2	0	1	0	6
Science	1	0	0	1	0	2
Science & Math	0	0	0	1	0	1
Social Studies	1	0	0	0	0	1
Remedial Reading	0	0	0	2	0	2
No response	11	2	1	1	19	34
Total	58	5	10	13	19	105

The teachers were asked if they taught in special education. The results of the crosstabulation of their responses by their teaching level are presented in Table 11. The majority of teachers (69) reported they were working in special education.

The teachers were asked if they were certified in special education or general education. Their responses were crosstabulated by their teaching level. As the participants could have dual certification, the number of responses may have exceeded the number of participants. Table 12 presents results of this analysis. Based on the teacher responses, it appears that many teachers at all teaching levels held both general and special education certification. Seventy-eight of the 105 participants were certified in general education, with 67 certified in special education.

Table 11

Special Education Participants by Teaching Level

Special Education	Teaching Level					Total
	Elementary	Elementary -Middle	Middle	High School	Itinerant	
Yes	35	3	10	13	9	70
No	23	2	0	0	10	35
Total	58	5	10	13	19	105

Table 12

General and Special Education Certification by Teaching Level

Teacher Certification	Teaching Level					Total
	Elementary	Elementary-Middle	Middle	High School	Itinerant	
General Ed	46	4	7	7	14	78
Special Ed	35	3	10	11	8	67

Survey Question Results

Many participants added commentary to each of the ten survey questions, which added greater insight into their perceptions of Thinking Maps® as a teaching tool (Appendix R). General comments were written on the back of some of the surveys. Statistical results from the survey questions are described within the following tables.

Teachers at all levels were asked to indicate the number of days per week that they used Thinking Maps®. Table 13 presents results of this analysis. Their responses were crosstabulated by their teaching level. The majority of participants (58), used Thinking Maps one-to-two days per week on all levels, 18 reported they used this visual tool three-to-four days per week. Of the teachers who used Thinking Maps® five days a week, four were at the elementary level, one was at the middle school level, and one was an itinerant personnel. While the participants do not integrate Thinking Maps® daily, they find them to be valuable tools. Itinerant personnel tend to use them less frequently. They use them while delivering professional development in workshops or while offering teacher support.

Table 13

Frequency of Use of Thinking Maps® by Teaching Level

Frequency of Use of Teaching Thinking Maps	Teaching Level					Total
	Elementary	Elementary- Middle	Middle	High School	Itinerant	
5 days/week	4	0	1	0	1	6
3-4 days/week	8	0	4	4	2	18
1-2 days/week	37	4	4	8	5	58
Not at all	4	1	0	0	1	6
Total	53	5	9	12	9	88

The teachers were asked if they used specific types of maps to facilitate reading comprehension. Their responses were crosstabulated by the teaching level of the respondent. As the teachers were instructed to check all that apply, the number of responses exceeded the number of participants. Teachers at all levels were more likely to use the Bubble Map (95); the Circle Map (94); the Double-Bubble Map (65); the Flow Map (61); and the Tree Map (57) to facilitate reading comprehension.. The Brace Map (24); the Multi-Flow Map (23); and the Bridge Maps (20) were used less frequently. Table 14 presents results of this analysis.

The teachers were asked to provide their personal observations on whether Thinking Maps® improved their students' reading comprehension (Table 15). If they answered yes, they were asked to respond to four possible areas where there was evidence of improvement in comprehension demonstrated.

District scores were results relative to the statewide assessment of reading administered in October of each year to third through eighth grade students. Eleventh grade High School students were given a Merit Exam in March. It consisted of ACT Plus Writing® college entrance examination and job skills assessments in reading, mathematics, social studies, science, and locating information.

Lesson and Unit assessment scores were results revealed through progress monitoring tools embedded in the district's core reading programs. With the exception of two respondents at the elementary level, 98 teachers surveyed indicated that using Thinking Maps® had improved their students' comprehension. When asked how students' comprehension improved, the largest group of teachers (86) indicated that

Table 14

Thinking Maps® Used to Facilitate Reading Comprehension by Teaching Level

Types of Teaching Maps	Teaching Level					Total
	Elementary	Elementary-Middle	Middle	High School	Itinerant	
Circle Map	52	4	8	11	19	94
Bubble Map	53	4	9	12	17	95
Double-Bubble Map	39	2	5	6	13	65
Tree Map	31	3	7	3	13	57
Brace Map	8	1	4	2	9	24
Flow Map	36	1	6	6	12	61
Multi-Flow Map	8	0	4	0	11	23
Bridge Map	8	0	2	2	8	20

Table 15

How Thinking Maps® have Improved Students' Comprehension by Teaching Level

Evidence of improved comprehension	Teaching Level					<u>Total</u>
	Elementary	Elementary -Middle	Middle	High School	Itinerant	
Comprehension Improved						
Yes	54	4	10	13	17	98
No	2	0	0	0	0	2
Improved district test scores	3	1	5	2	5	16
Higher Lesson/Unit assessment scores	22	1	4	3	6	36
Improved ability to access prior knowledge	46	3	9	12	16	86
Improved test taking skills	16	2	6	6	9	39

Thinking Maps® improved their students' ability to access prior knowledge; 39 reported that this visual tool improved their students' test taking skills; 36 indicated that students had higher Lesson/Unit assessment scores; and 16 indicated improved district scores. The teachers were asked to indicate all that apply to their students. As a result, the number of responses was greater than the number of participants who reported their students' performances had improved.

The teachers were asked if Thinking Maps® improved their students' attitudes towards reading. If they answered yes, they were asked to indicate from four possible responses how attitudes have improved. They could also write in their own answers. The responses were crosstabulated by teaching level for presentation in Table 16. Eighty-nine teachers indicated their students' attitudes toward reading improved with the use of Thinking Maps®. Eighty-five teachers reported the students were more engaged in discussion of text; fifty reported increased interest in reading; 41 indicated students were more attentive during read-alouds; 13 noted students requested books to take home; and 11 noted "other" as a response then offered commentary.

The teachers were asked if they had observed students constructing Thinking Maps® on an independent basis as a strategy to assist with reading. Their responses were crosstabulated by teaching level for presentation in Table 17. At the Elementary, Middle, and Itinerant levels, 56 in all indicated their students constructed Thinking Maps® on an independent basis to assist with reading. The remaining 38 teachers who responded to this question did not perceive that their students were constructing Thinking Maps® independently.

Table 16

How Attitudes Towards Reading Improved Due to Thinking Maps®

Reasons for Improved Attitudes toward Reading	Teaching Level					Total
	Elementary	Elementary -Middle	Middle	High School	Itinerant	
Attitudes Improved						
Yes	48	3	10	12	16	89
No	6	1	0	1	0	8
Students more attentive during read alouds	22	0	5	6	8	41
Students more engaged in discussion of text	45	3	10	10	17	85
Increased interest in reading	24	1	4	9	12	50
Students are requesting to take books home	9	0	1	1	2	13
Other	6	1	0	2	2	11

Table 17

Independent Construction of Thinking Maps® by Teaching Level

Students are Constructing Thinking Maps® Independently	Teaching Level					Total
	Elementary	Elementary -Middle	Middle	High School	Itinerant	
Yes	33	2	6	4	11	56
No	18	3	3	9	5	38
Total	51	5	9	13	16	94

All participants responded to a series of specific *yes* or *no* questions regarding the use of Thinking Maps® with literature, whether they created a classroom library, and if their school had a library with a librarian. Their responses to each of these questions are presented in Table 18. Eighty of the 94 respondents reported that they use Thinking Maps® with literature.

Many of the survey participants at all teaching levels (76) responded that their schools had libraries, but no librarian. Only 40 reported that their school library was staffed with a librarian. Itinerant personnel service multiple buildings; therefore, eleven of the nineteen participants chose one of their buildings to use in response to this question. Seven itinerant indicated that the school they serviced had a school library and only three indicated that it was staffed with a school librarian. Most of the participants at

Table 18

School Questions by Teaching Level

	Teaching Level					
Questions	Elementary	Elementary -Middle	Middle	High School	Itinerant	Total
Use Thinking Maps® with Literature						
Yes	48	3	9	8	12	80
No	4	2	1	4	3	14
Have a school library						
Yes	49	4	8	8	7	76
No	9	1	1	5	4	20
School has a librarian						
Yes	22	1	8	5	4	40
No	36	4	2	8	8	58
Participant has a classroom library						
Yes	52	4	8	7	7	78
No	6	1	2	6	2	17

all levels (78) had classroom libraries which is a requirement adopted by the urban district in this study. The teachers were asked if they had taken follow-up training for Thinking Maps®. If they answered yes, they were asked to indicate the types of training they had completed. Table 19 presents the results of their responses by teaching level.

Teachers at all levels, (57) reported they had participated in additional follow-up training for Thinking Maps®. When asked what types of training, the largest group of respondents (42) indicated they had completed the “Thinking Maps® Going Deep,” workshop; 23 teachers completed “Thinking Maps® Building Vocabulary” and 15 teachers completed the “Thinking Maps® Sense of Story” training. The Thinking Maps® follow-up trainings consisted of one six-hour workshop or two three-hour workshops designed to reinforce the initial introductory training. The training allowed teachers to gain greater insights on how to use Thinking Maps® across the academic content areas as math, literature, and vocabulary. The “Going Deep” workshop series reviewed concepts learned during the initial training and gave participants more opportunities for application of the maps across a variety of academic disciplines.

Summary of Chapter Four

Chapter Four presented the quantitative analysis of the 105 teacher participants who responded to the *Survey of Teachers’ Perceptions of Thinking Maps®*. Collectively, 86 held responsibilities at the elementary, elementary-middle, middle school, and high school levels and the remaining 19 were itinerant personnel. This portion of the study addressed Research Question One: “What are teachers’ perceptions of Thinking Maps® following district training?” A ten question multiple-choice survey was administered to

Table 19

Completion of Follow-up Training for Thinking Maps® by Teaching Level

Follow-up Training	Teaching Level					Total
	Elementary	Elementary -Middle	Middle	High School	Itinerant	
Follow-up Training						
Yes	27	3	7	9	11	57
No	31	2	3	4	6	46
Thinking Maps® Going Deep	24	1	4	5	8	42
Thinking Maps® Building Vocabulary	10	2	3	2	6	23
Thinking Maps® Sense of Story	8	0	1	2	4	15

respondents who taught students in kindergarten through twelfth grade. All of the teachers reported that they used Thinking Maps® as a visual tool and determined that they facilitated comprehension as evidenced by teacher observation and higher scores on district and student assessment tests from the basal reading program.

The survey participants reported that attitudes toward reading were positively impacted by the use of Thinking Maps® as students were more engaged in the discussion of text. Teachers used Thinking Maps® with literature in schools where many contained libraries that were not staffed with a librarian. The Bubble Map was the map most often constructed followed by the Circle Map. The Bridge Map and Multi-Flow Map were the least likely to be utilized. Participants noted that their students constructed maps independently. Most (54%) of the survey participants sought follow-up training after receiving the initial training. These results and their implications will be discussed in Chapter Six.

CHAPTER FIVE

QUALITATIVE RESULTS AND ANALYSIS OF DATA

The qualitative portion of this mixed method research design study examined the use of Thinking Maps® with boys in three urban elementary classrooms: a second grade, a fourth grade and a learning disabilities classroom. The focus was on students' comprehension and attitudes toward reading with respect to the school district's core reading program, *Open Court Reading*, and read alouds of literature books. The use of Thinking Maps® with quality literature yielded important information about developing strategies in urban elementary school males for reading comprehension and motivational learning factors. The inquiry was conducted over five consecutive months, February through June, 2009, during the regularly scheduled reading periods of 30 males in three classrooms within two urban elementary schools. Inasmuch as there were a total of 54 students: boys and girls, in the three classrooms, all children participated in all instructional activities, yet it is only the data that pertains to the boys as they are the focus of this study, that is included below.

This chapter presents the data for the qualitative portion of the study. The researcher's observations were documented by fieldnotes and backed-up by digital and audiocassette tape recordings. These tapes provided recordings of classroom activities during the researcher's classroom visits. Subsequently the researcher transcribed the audio tapes. Additionally, the researcher interviewed the three teacher participants guided by a set of questions (Appendix M) and 27 of 30 male students in exit interviews using

developmentally appropriate probes (Appendix N). Numerous sample Thinking Maps® (Appendix S) developed by the students and the teachers in concert with the *Open Court Reading* program and the quality literature books (Appendix L) validate the use of maps over the course of the study. The Elementary Reading Attitude Survey (ERAS- Appendix O) enabled a descriptive examination of the male students' attitudes toward reading. The aforementioned data provided answers to the second and third research questions pertinent to this study. Those questions are once again stated.

Research Questions 2 and 3:

2. How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in two elementary school general education classrooms?
3. How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in an elementary school special education classroom?

In order to enable a thorough and thoughtful portrait of the teacher and male student participants, the researcher believes the length of this chapter is warranted. For each of the three classrooms the following delineates the presentation order of information. Classroom-by-classroom there is a description of the teacher participant; the interview responses from that teacher; descriptions and exit interviews of the male participants in that classroom; and the researcher's fieldnotes that clarify to extend both the content and context relevant to that classroom. Following this comprehensive overview of each classroom, the results of the ERAS are presented followed by

composite summaries of the teachers and the male students enabling the responses to Research Questions Two and Three.

Qualitative Data from the Second Grade Classroom

The second grade teacher, Mrs. Jones had 11 males who participated in the study. Her class was selected because of her commitment to teaching with Thinking Maps® as a visual tool on a daily basis since the beginning of the school year.

Description of the Second Grade Teacher Participant

Mrs. Jones had extensive training in Thinking Maps®. She received her initial training in another district by a national consultant. Later she attended both beginning and follow-up training workshops in the district where this researcher conducted the research study. In-house district trainers that focused on how to use Thinking Maps® for vocabulary development and reading comprehension provided her follow-up training. Mrs. Jones taught elementary school for 20 years. She earned certifications in kindergarten through ninth grade and in art. She often provided staff development to her peers within the school on Thinking Maps®. Mrs. Jones believed that Thinking Maps® contributed to higher assessment scores and improved students' ability to access prior knowledge. She reported that there is a marked difference in student attitudes during read alouds, increased attention, and interest during reading. Mrs. Jones gave the researcher information about each male student. She mentioned that none of the male participants have fathers in the home. More insight about Mrs. Jones and her perception of Thinking Maps® was revealed in her interview and reported in this chapter.

Interview of Second Grade Teacher - Mrs. Jones

The interview questions appearing below were posed by the researcher during a face-to-face interview with Mrs. Jones.

1. Do you use the Thinking Maps® program across other academic areas as Math or Social Studies?

Mrs. Jones: Absolutely and science too and spelling; I use it in language arts; I tried the Brace Map with suffixes and prefixes and base words. So we started off with a word like un-wind-ing and then we broke it down to the base word.

2. Which Thinking Maps® do you find the most effective?

Mrs. Jones: The Double-Bubble because kids love to say the name and the way we can use the colors to separate; it's a really good visual for them.

3. Which Thinking Map® do you use the most?

Mrs. Jones: Lately because a lot of things have been new, we've been using the Circle Map. The kids are still trying to do it in a Bubble Map form. But I am trying to get them to see that in the Bubble Map those are only adjectives ... so the Circle Map is coming up quite a bit and in other areas, as is the Flow Map.

4. Which Thinking Map® do you observe your students constructing most frequently?

Mrs. Jones: The Bubble Map and Double-Bubble Map. They do the Bubble the most often even when they don't use it with adjectives. That's when I tell them you should use a Circle Map. They like to draw the Double-Bubble, but since we are doing these things in science they will just start making their Flow Map ahead of time or just start making the squares.

5. How have Thinking Maps® impacted your students' critical thinking skills?

Mrs. Jones: I think it makes it a little easier to process, instead of me asking all the questions. A lot of times they will ask me the questions. A good reader is the one who asks the questions. A group of them, even the ones who can't put it on paper like Lloyd or have as many challenges are coming up with some good questions ... they could do their own research if they had direct instruction.

6. Were you trained in Thinking Maps® by a national consultant from the company or a district consultant?

Mrs. Jones: I was trained in another district and it was a couple of sessions over the summer. I thought it was really good, but it was too intense for me to really process where I could feel comfortable using them, then when I did the district training then “aha,” it started clicking because there were more examples. I thought the training was actually better district wise and maybe that’s because we were using district (core curriculum) materials or maybe I was just more comfortable. I don’t know, but I understood it better the second time around. Then I kept going to the workshops whatever kind was offered. I did the overview, then the vocabulary, then the digging deeper, and all that kind of helped me.

Probe: That helped it to gel for you?

Ms. Jones: Yes.

Probe: So you took your initial training in another district?

Mrs. Jones: Right.

Probe: Was that training offered by someone in the district or did they bring in a national consultant?

Mrs. Jones: I think it was a national consultant...It was my friend, a principal who had a friend in XYZ district who sent me over there...I don’t remember because it was a while back...it was around 2002 or 2003 when I had the initial training...I was in the XYZ district as a guest...I took notes and got the binder.

7. Do you find that Thinking Maps® are more effective, less effective, or just as effective as graphic organizers used with *Open Court Reading*? Briefly explain.

Mrs. Jones: More effective, because I can use them for tests. I can’t use a graphic organizer for a test because that’s just organization. But just like I said with the Bubble Maps, if they don’t just write adjectives, if they write out what they are thinking that’s an alternate assessment for me. I use it as another way to get grades. It’s an assessment tool and it’s differentiated because I have those who can’t do it.

8. How do Thinking Maps® impact reading achievement in your male students?

I didn’t think of it as achievement in that sense. But for recall, yes. Recall and summarizing, it helps. Every now and then you’ll hear somebody say (e.g. “Can I do a Thinking Map on that?”) I hear that out of the boys more so than the girls like Jason, Lloyd, and Martin. Lloyd is a relatively new student, but he fell right in. I always model everything and he’s kind of picked up on it.

9. What are the general attitudes of your male students towards reading? What makes you think so?

Mrs. Jones: They're okay as long as I put it as a competition, because if I say okay it's boys against the girls, or it's not "Boys Rule Day," it's "Girls Rule Day," or make it a challenge, then I get a lot of energy out of them. If we're just doing it, I do it by the tables because I don't do it individually. As long as I can make it fun, it's good.

Probe: What about the African American children's literature? How is that impacting the students?

Mrs. Jones: They are excited to hear the stories...they are anxious. They love to be read to and put their two cents in about whatever it is I'm reading. We get interrupted sometimes like today with the praying mantises; it's hard to get back on track.

Probe: How many praying mantises do you have (in a net)?

Mrs. Jones: About a 150; and I was able to capture the picture and Lloyd said, "They're coming out, and they look like little worms."

Probe: That makes a good Flow Map.

Mrs. Jones: Yes! And that's what we did. Because I'm doing my life cycles. All the time they do the Flow Map...It's still posted... the one we did for the butterfly. We have the mill worms going. We used the Flow Map for spelling. We will put our spelling words or vocabulary words in alphabetical order. We used the Flow Map for that because that really helps those who are not comfortable with knowing the alphabet by hard [from the students' memory].

Probe: Anything else?

Mrs. Jones: The kids really enjoy making the maps and when you're here. They love showing them off for you.

10. Do Thinking Maps® help facilitate writing? Why do you say so?

Mrs. Jones: This is what I'm working on because we started a new unit today. One of the questions was a compared experience. I told the kids that, "There's that word compare, so what kind of map could you use?" (Mrs. Jones pulled out an example of a map of a prewrite that a boy did on his own.) They know whenever they see compare or contrast; they automatically know to make a Double-Bubble Map.

Descriptions and Exit Interviews of the Second Grade Male Participants

Descriptions of each male participant was provided by Mrs. Jones which contributed to the researcher's observations obtained from each visit. Greater insight into the thoughts of each second grade boy about reading and Thinking Maps® were disclosed in one-on-one interviews conducted by the researcher at the end of the study.

Ten boys: Jason, Lloyd, Martin, Charles, Parker, Billy, Timothy, Jerome, Freddy, and Juan participated in exit interviews with the researcher. The boys' completed interviews are presented in their entirety. The interview questions appearing in bold print below were posed by the researcher during face-to-face interview with each of the boys.

Jason. Jason was a bright eight-year old who was exposed to many positive experiences by a supportive mom. He has two grown brothers and no dad in the home.

1. Do you like to read? Why? If no, why not?

Jason: Yes, because it's fun.

2. Do you think you are a good reader? Why? If no, why not?

Jason: Yes, because I work really hard at it.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Jason: Yes, my momma; one time a week.

4. How many storybooks do you think there are in your home?

Jason: Eight.

5. Do you go to the library? If yes, how often do you go?

Jason: Yes, every Monday sometimes.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Jason: Yes...*Bippity Bop Barbershop*.

7. How do you feel about using Thinking Maps®?

Jason: Good...because they are fun to do.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so?
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Jason: b – They was fun; you can do anything with them... you can use them on other stuff like personalities and stuff.

Probe: What maps did you use on personalities?

Jason: The Bubble Map.

Probe: Did you have a favorite Thinking Map®?

Jason: The Bubble Map because you can do anything with them.

Probe: Anything else you want to say about Thinking Maps® or reading?

Jason: [no response]

Lloyd. Lloyd was described by his teacher as a bright, articulate, seven-year old student who thought beyond the questions. He was eager to participate and enjoyed reading even though he stated that he “really doesn’t have any books at home.”

1. Do you like to read? Why? If no, why not?

Lloyd: Yes, because it’s fun.

2. Do you think you are a good reader? Why? If no, why not?

Lloyd: Yes, because I like to sound the words out that are too hard for me.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Lloyd: No.

Probe: Did someone use to read to you?

Lloyd: Yes, my grandma.

Probe: Did your mom read to you?

Lloyd: I can't really remember, because it was like long ago?

Probe: Right now, no one is reading to you at home like your teacher reads stories to you?

Lloyd: No.

4. How many storybooks do you think there are in your home?

Lloyd: I don't really have any books at home. I have one that I got today and I might get another one that you are going to give me.

5. Do you go to the library? If yes, how often do you go?

Lloyd: No, I don't know where one is at.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Lloyd: Yes – favorite book is *Six by Six*.

Probe: Remember the books I brought your teacher; did you like any of those books? Which one of those books did you like?

Lloyd: *Big Jabe* and *Salt in His Shoes*.

7. How do you feel about using Thinking Maps®?

Lloyd: I feel good because I can compare things to other things.

Probe: Do you have a favorite Thinking Map®

Lloyd: The Double-Bubble.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
 - a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Lloyd: b – Because I can understand what the story is telling me from the beginning.

Probe: Anything else you want to share about Thinking Maps® or the books?

Lloyd: I wanted you to read *Ron's Big Mission*.

Martin. Martin was a good student. He was a tall seven-year old who was a behavior challenge all school year because he often talked out of turn. His teacher reported that he used to fight all of the time prior to coming to her class. Martin liked to do his academic work and cared about the quality of his work. He always responded to questions with quality answers.

1. Do you like to read? Why? If no, why not?

Martin: Yes, because reading is important. If you don't know how to read, you can't read the words.

2. Do you think you are a good reader? Why? If no, why not?

Martin: Yes, because I always get an A on reading.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Martin: My mom; sometimes; four times a week; one time this week; she read more to me as a little boy.

4. How many storybooks do you think there are in your home?

Martin: A lot; I can't count them all; 50.

5. Do you go to the library? If yes, how often do you go?

Martin: I only went two times in my other school; 10 times this year.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Martin: Yes, my favorite book is *Dizzy* and another favorite is *Hewitt Anderson's Great Big Life*.

7. How do you feel about using Thinking Maps®?

Martin: Happy; I like doing the Double-Bubble.

Probe: What do you do with the Double-Bubble?

Martin: Compare.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.

Why do you say so?

- c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Martin: b [However, he did not respond why.]

Probe: Anything else you want to say about using Thinking Maps® with your Open Court Reading lessons or stories that your teacher read to you?

Martin: I like the Flow Map too cause you use it in order.

Charles. Charles was a very bright eight-year old student who was easily distracted according to his teacher, Mrs. Jones. Judging from his work, which was

usually correct, he is paying some attention. Charles was in the process of being evaluated by a doctor for Attention Deficit Disorder.

1. Do you like to read? Why? If no, why not?

Charles: Yes because it's fun.

2. Do you think you are a good reader? Why? If no, why not?

Charles: Yes because my mom tells me all the time.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Charles: Yes, three times week.

4. How many storybooks do you think there are in your home?

Charles: 21

5. Do you go to the library? If yes, how often do you go?

Charles: Yes, I only go to the library one time a week.

Probe: Did you go this week already?

Charles: No.

Probe: When are you going?

Charles: In six days.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Charles: Yes, my favorite book is *The Three Little Pigs*.

Probe: Of the books I brought your teacher, which is your favorite?

Charles: *Barack*.

7. How do you feel about using Thinking Maps®?

Charles: Fun.

Probe: What's fun about them?

Charles: The way you do them.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Charles: b - The way they tell me about the story.

Probe: What did they tell you about the story?

Charles: How they live.

Probe: Do you have a favorite Thinking Map®?

Charles: Yes, the Flow Map.

Probe: What do you do with the Flow Map?

Charles: Put things in order.

Probe: Anything else about the Thinking Maps® or books?

Charles: No.

Parker. Parker was a seven-year-old average student. He appeared well rounded and enjoyed reading. Parker loved sports and he loved school. He attends to academic tasks especially reading.

1. Do you like to read? Why? If no, why not?

Parker: Yes, because it's fun and you can learn more things.

2. Do you think you are a good reader? Why? If no, why not?

Parker: Yes, because I read a lot of books at home.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Parker: No.

4. How many storybooks do you think there are in your home?

Parker: A lot; probably 30.

Probe: So you read those books on your own?

Parker: Yes.

5. Do you go to the library? If yes, how often do you go?

Parker: Probably two days.

Probe: Two days a week?

Parker: Yes.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Parker: Yes...my favorite book is *Doo Wop Pop*.

7. How do you feel about using Thinking Maps®?

Parker: Good, because it's fun.

Probe: What's fun about them?

Parker: You get to know more things in a story.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

b. Thinking Maps® helped me to understand the stories.

Why do you say so?

c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Parker: b- Because it has details in it.

Probe: Anything else?

Parker: No.

Billy. Billy, an eight-year-old student was retained and thus in second grade rather than third. According to his teacher, he had “bad” attendance. His mother had him when she was thirteen. He appeared to have a great deal of influences from teenagers. Billy had poor academic skills and was receiving the services of a Resource Room teacher.

1. Do you like to read? Why? If no, why not?

Billy: Yes, because it [helps me] learn.

2. Do you think you are a good reader? Why? If no, why not?

Billy: Yes, because I be reading books at home.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Billy: Yes, my mom; two times a week.

4. How many storybooks do you think there are in your home?

Billy: Five.

5. Do you go to the library? If yes, how often do you go?

Billy: Sometimes; once a month.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Billy: Yes... [my] favorite book is *Dinosaurs*.

Probe: Were any of the books I brought one of your favorites?

Billy: *So Much*.

7. How do you feel about using Thinking Maps®?

Billy: I like them because I can use folktales with them.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Billy: b – They helped me for... I don't know.

Probe: Did you have a favorite map?

Billy: A Bubble Map.

Probe: What do you use a Bubble Map for?

Billy: You put things in there; I forgot.

Probe: Do you go with Ms. Kelly [Resource Teacher] sometimes?

Billy: Yes.

Probe: Is she your resource teacher?

Billy: Yes.

Probe: What does she help you to do; how does she help you?

Billy: She helps me with my maps.

Probe: What does she help you to do better?

Billy: Count money.

Timothy. According to his teacher, eight-year-old Timothy was a “smart” young man who produced work that was “always right.” His father is incarcerated and his mother died when he was four or five years old. His dad’s girlfriend and her mom are

raising him. Many of his oral responses are unrelated to the topic of discussion. For an eight-year, Timothy's reasoning and cognitive processing skills were low.

1. Do you like to read? Why? If no, why not?

Timothy: Yes, sometimes it can give you information and sometimes I just like reading.

2. Do you think you are a good reader? Why? If no, why not?

Timothy: Yes.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Timothy: No.

Probe: When you were little did anyone read to you at home?

Timothy: I don't know.

4. How many storybooks do you think there are in your home?

Timothy: One.

5. Do you go to the library? If yes, how often do you go?

Timothy: No, we don't have a library around here.

Probe: No library you can walk to....do you have a library card?

Timothy: No.

Probe: So you never borrowed books from a library?

Timothy: No.

Probe: There is a library on [street name]; you can have your mother take you there ... you can check the books out that your teacher reads to you [When the researcher referred to his mother, he did not confirm or deny that he had a mother; his dad's girlfriend is acting as a surrogate mother.]

6. Do you like the picture storybooks that you read or listen to in your classroom?

Timothy: Yes, my favorite book is *Henry's Freedom Box*.

Probe: Why?

Timothy: It shows you about freedom and you get to be free.

Probe: Is that the one you chose to take home?

Timothy: No, I chose *By My Brother's Side*.

Probe: Your first choice was By My Brother's Side and your second choice was So Much.

7. How do you feel about using Thinking Maps®?

Timothy: Great.

Probe: Why do you think they are great?

Timothy: Because it makes you smarter.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.

Why do you say so?

- c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Timothy: b – You can figure out more information from the books and from your teacher and it's good to read books, so you can learn information a lot of times or sometimes.

Probe: Anything else you want to share about reading or Thinking Maps®?

Timothy: I have some maps to show you. They're in the classroom.

Probe: Okay. Do you have a favorite Thinking Map?

Timothy: My favorite Thinking Map is... all of them.

Jerome. Jerome was an eight-year old with no father figure in the home. He often challenged the authority of his mother and teacher. When Jerome raised his hand to respond to questions, oftentimes he did not have an answer.

1. Do you like to read? Why? If no, why not?

Jerome: Yes. I like Math more, but I know how to do math. I just have to work on putting it quick into my head.

2. Do you think you are a good reader? Why? If no, why not?

Jerome: No, sometimes I always mess up on reading.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Jerome: No, I read to my sister and my momma, so I can practice.

4. How many storybooks do you think there are in your home?

Jerome: Sixteen.

5. Do you go to the library? If yes, how often do you go?

Jerome: Yes, I went there four times. My mother says she is going to bring me there after my birthday and she says she is going to get me a new library card.

Probe: So you say you have been there four times? You mean four times in the last year?

Jerome: Yes.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Jerome: Yes, my favorite book is *Max Found Two Sticks*.

7. How do you feel about using Thinking Maps®?

Jerome: I think its fun because you have to put a lot of details in it so you can get graded. And you can do different stuff instead of doing the same thing.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Jerome: b – Because when I put more details to it and I show Ms. Smith, she says I have to put more details to it and that's all about the stories and what she be saying to us.

Probe: Do you have a favorite Thinking Map®?

Jerome: The Bridge Map.

Probe: What do you use the Bridge Map for?

Jerome: If they go to each other.

Probe: Can you give me an example?

Jerome: Bike is to cycle as skate is to board.

Probe: How about this one: yellow is to sun as white is to?

Jerome: (pause) Sky?

Jerome: My mother bought me a board so I could practice my Bridge Maps; and I did a Bridge Map and I keep practicing and practicing til I get better.

Freddy. Freddy was a nine-year old who should be in the fourth grade. He had been retained twice and had endured a lot of teasing and peer pressure. He repeated kindergarten and first grade. He was also being serviced by a Resource Room teacher.

1. Do you like to read? Why? If no, why not?

Freddy: Yes, because you can learn more and more and then you can get better at reading.

2. Do you think you are a good reader? Why? If no, why not?

Freddy: Yes

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Freddy: Yes, my auntie and sometimes I be reading by myself.

Probe: What kind of books do you like?

Freddy: Characters and cartoons (books).

Probe: How often does she read to you?

Freddy: One [time a week].

4. How many storybooks do you think there are in your home?

Freddy: I be going to the library around the corner and gettin' some.

Probe: How many do you have at home?

Freddy: Like two.

5. Do you go to the library? If yes, how often do you go?

Freddy: Yes, I get some books then I take them home then bring them back.

Probe: How often do you go to the library?

Freddy: Every day when my auntie come over. When my auntie come over then I'll go.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Freddy: Yes, my favorite book was *So Much* and *Ron's Big Mission*, but she never read that.

Probe: Do you want her to read that one?

Freddy: Yes.

Probe: I have the book in my car. I will get it and give it your teacher to before I go.

7. How do you feel about using Thinking Maps®?

Freddy: Good or Great.

Probe: Why do you say that?

Freddy: So you can get information and ideas.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

b. Thinking Maps® helped me to understand the stories.

Why do you say so?

c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Freddy: b - It helps me learn.

Probe: How?

Freddy: To identify myself.

Probe: What map did you use to identify yourself?

Freddy: A Double-Bubble

Freddy: To the family in the book *So Much*.

Probe: How did you use it with that story?

Freddy: The family and the friends.

Probe: Did Thinking Maps® help you make a difference or no difference in understanding the stories?

Freddy: Difference. It made a difference in thinking.

Probe: How?

Freddy: Using my head.

Probe: What's your favorite map?

Freddy: The Brace Map.

Probe: What do you do with a Brace Map?

Freddy: You break it down.

Probe: Why do you like that map better than the other maps?

Freddy: It's funner than the other ones.

Juan. Juan was the only Hispanic male in this class where all the other boys were African American. He was a seven year old foster child. According to Mrs. Jones, Juan's second grade teacher indicated he was suicidal. He peeled his cuticles so low they bled. Juan was withdrawn and rarely smiled. He seldom if ever completed assigned academic tasks in a satisfactory manner. Juan did not think he was a good reader and no one read to him at home.

1. Do you like to read? Why? If no, why not?

Juan: Yes. (doesn't know why).

2. Do you think you are a good reader? Why? If no, why not?

Juan: No, because I can't read that good.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Juan: No.

4. How many storybooks do you think there are in your home?

Juan: I have a lot.

5. Do you go to the library? If yes, how often do you go?

Juan: Once a year.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Juan: Yes... (no favorite book).

7. How do you feel about using Thinking Maps®?

Juan: (long pause)

Probe: Did you like them or not like them?

Juan: Not like them.

Probe: Why did you not like them?

Juan: Don't like them that much.

Probe: You don't know why you don't like them that much?

Juan: No.

Probe: Is it because they give you trouble?

Juan: Yes.

Probe: How do they give you trouble?

Juan: Nothing.

*Probe: You said you don't like them, but you don't know why you don't like them?
Let me give you some ideas. Do you think drawing them is hard?*

Juan: Yes.

*Probe: Do you know what map goes to what thinking skill? So...if I said what goes in
a Flow Map would you know?*

Juan: No.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

b. Thinking Maps® helped me to understand the stories.

Why do you say so?

- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Juan: c (no further response)

Probe: Anything else you want to share about Thinking Maps®?

Juan: No.

Probe: Was there one map that was easier to make than the others?

Juan: No.

Probe: Did you have a favorite book?

Juan: No

Probe: I am still going to give you a book.

Juan: Me, My Dad, and something [referring to the book *Dad, Jackie, and Me* (Ulberg, 2008).]

One student, Paul should have been a third grader, but was retained and received daily support services from the Resource Room teacher. He had poor attendance in that he was only in school two to three days per/week. Mrs. Jones reported that he made an effort and had good oral responses. Paul was not interviewed because he was absent and never returned to school during the research study for the exit interview.

In summary, with respect to the second grade boys' perception of reading and exposure to books (Table 20), all 10 boys said they liked to read. Eight of the 10 said they were good readers. The frequency of them being read to at home ranged from zero to four

Table 20

Second Grade Boys' Perception of Reading and Exposure to Books

Participant	Likes to read	Perceives self as a good reader	Frequency of being read to at home	Number of Storybooks in the home	Go to the Library
Jason	Yes	Yes	1	8	Every Monday sometimes
Lloyd	Yes	Yes	0	0	No I don't know where one is at
Martin	Yes	Yes	4	A lot; 50	Ten times this year
Charles	Yes	Yes	3	21	I am going in six days
Parker	Yes	Yes	0	A lot; 30	Probably two days a week
Billy	Yes	Yes	2	5	Sometimes; once a month
Timothy	Yes	Yes	0	1	We don't have a library around here
Jerome	Yes	No	0	16	Four times in the last year
Freddy	Yes	Yes	1	2	Every day when my auntie comes over
Juan	Yes	No	0	I have a lot	Once a year

times a week; with zero being the norm for five of the boys; and four, three, two, and once per/week respectively for the remaining four of the five boys. One student did not address this probe. According to the boys the number of storybooks in the home were as follows: 0, 1, 2, 5, 8, 16, 21, (*a lot*) 50, (*a lot*) 30, and *a lot*. When queried about use of the library there was a range of responses.

Fieldnotes from the Second Grade Classroom

It was evident from the moment one entered Mrs. Jones' classroom that she used Thinking Maps® consistently. There were maps on the bulletin boards, on chart paper, walls, the chalkboard, and even on the door to her classroom. Her students maintained daily journals using Thinking Maps® to facilitate understanding of reading selections, workbook tasks, spelling, and vocabulary in the core reading program of *Open Court Reading*. She used Thinking Maps® across the content areas; for example during one science lesson the students created a Flow Map to sequence the metamorphosis of a butterfly. Additionally, Mrs. Jones constructed a Brace Map to assist students in learning the parts of a butterfly. An oversized Brace Map was placed on the door of her classroom to help students understand seasonal change from winter to spring and the parts of the butterfly (Figure S1).

In another science lesson, students learned how mealworms developed. Each student did a Flow Map on the development of a mealworm (Figure S2). There were four maps prominently displayed on large chart paper around the classroom. One was a Circle Map on the recent presidential election. Students constructed Thinking Maps® for the

presidential candidates in their journals. Martin drew a Bubble Map (Figure S3) after listening to a story about the president of the United States entitled *Barack Obama: Man of Promise, Son of Hope* (Grimes, 2008). This activity could be used as a springboard for writing a biographical essay on President Barack Obama's life.

There was a large bulletin board size Tree Map on reading genres (Figure S4). Eight commercially made maps distributed by the Thinking Maps® Company were posted on a bulletin board. Students were very eager and proud to show the researcher their own generated maps in composition books from stories read in *Open Court Reading* (Figure S5).

Mrs. Jones completed three major projects in which Thinking Maps® played an integral part. These included science projects and others based on text from the basal reader. One of the projects centered on the Open Court Reading Unit of Fossils. After reading the expository text, "*Fossils Tell of Long Ago*," Mrs. Jones and students developed ideas for an enlarged classroom Circle Map given to her by the researcher.

The words *Dinosaur Fossils* were written in the middle (Figure S6). Students brainstormed what they knew about dinosaur fossils while the teacher wrote their responses on the map. The map was posted on the wall in the hallway outside of her classroom along with a dinosaur exhibit that included handmade fossils, dioramas, pictures, figurines, and written work about dinosaurs. Students developed maps to accompany the Unit. After reading about dinosaur fossils in *Open Court Reading*, Lloyd drew a Bubble Map (Figure S7) using adjectives about fossils and a Circle Map (Figure S8). Timothy was creative in drawing a brontosaurus instead of a circle shape for the main

topic in his Bubble Map (Figure S9). This activity can be used as a springboard for writing a paragraph on dinosaur fossils.

Every Thursday was called “Boys Rule Day” because Mrs. Jones knew that the researcher’s primary purpose was to observe male students as they integrated Thinking Maps® with African American children’s literature and *Open Court Reading*. On Thursdays, male students knew that they would be singled out for questioning by their teacher about stories and skills in *Open Court Reading* and in picture storybooks. The students also knew that the researcher would be especially interested in the Thinking Maps® they developed to accompany their reading selections. During story time they were asked to sit on the carpet to listen to a story while the girls sat at their desks. Before, during, or after each story or *Open Court Reading* lesson all the students constructed a Thinking Map. Each student had a composition book filled with maps already completed from September 2008 through February 2009. The maps represented stories and lessons from *Open Court Reading*. During each of the researcher’s visits the boys were eager to show the researcher the maps they had drawn on each visit. In order to be equitable, Mrs. Jones used another day of the week as “Girls Rule Day.”

The researcher selected African American children’s stories based upon the thematic unit the students were working on throughout the school year. The researcher selected three books each week for the teacher to read to students in addition to stories from *Open Court Reading*.

During the 2008-2009 school year, the teacher completed lessons from the following Open Court Reading Units: Sharing Stories, Kindness, Look Again, and

Fossils. The researcher began the study while students were working on an expository text from the unit Look Again about how animals camouflage themselves for protection from enemies. In one of the stories, “How the Guinea Fowl Got Her Spots” students used a Tree Map to categorize the characters in the story.

Spelling words from the *Open Court Reading* series were introduced each Monday. A Tree Map was developed by the students to classify students’ spelling words for the week. This activity assisted the second grade boys in looking for spelling patterns (Figure S10). There were concept words introduced in the Spelling and Vocabulary skills workbook. In the expository text on *Fossils*, the spelling and vocabulary workbook page required the students to learn the concept words: e.g. **petrified**, **preserved**, and **fossils**. Mrs. Jones used a Circle Map divided into four sections to introduce each word. She wrote the vocabulary word in the center of the Circle Map and drew spokes within the circle dividing it into four sections (Figure S11). In one section, the student must define the word; the next section contained the word written in sentence context; the third section contained a synonym or antonym for the vocabulary word; and the final section was an illustration of the word. Using Thinking Maps® to help students with vocabulary knowledge was a significant supplement to the curriculum because due to the unpaid bills from the previous year, the District could not obtain additional comprehension or spelling books from the publishing company. Teachers were asked to copy workbook pages which took time and required ongoing access to a working copier. Being able to draw Thinking Maps saved time and money.

One of the first African American children's literature books Mrs. Jones read to her class was *Henry's Freedom Box* (Levine & Nelson, 2002). Students answered each of the six comprehension questions developed by the teacher. Two explicit questions were asked to obtain literal information, two implicit questions that required inferential comprehension, and two word-meaning questions. Students made a Bubble Map describing the character of Henry. Henry was a boy born into slavery who mailed himself in a wooden box to a state where he could be free. Martin constructed a Flow Map illustrating and detailing the sequence of events in the story (Figure S12). Martin's illustrations and Lloyd's writing depicted Henry's life from the time he was sold by his ailing slave master until the end of the story when he was mailed in a box, arrived in Philadelphia and finally obtained freedom (Figure S13). Some of the Thinking Maps contained only pictures without written text; however, the students were able to sequence the events in the story. Following a lesson about Harriet Tubman, Lloyd drew a Double-Bubble Map comparing Henry with Harriet Tubman (Figure S14).

When students listened to the story *Max Found Two Sticks* (Pinkney, 2005), Lloyd constructed a Bubble Map describing Max the main character who was fascinated by drums. When Mrs. Jones read *Doo Wop Pop* (Schotter & Collier, 2008) about a singing school janitor, the boys did a Brace Map detailing the setting. The story takes place in a school. They wrote the word "school" on the first line in the Brace Map then wrote responses detailing parts of the school depicted in the story (e.g. cafeteria, auditorium, classroom, etc.). After which students wrote down the subparts of the auditorium as the stage, curtains, seats, and movie screen.

During the month of April, Mrs. Jones was excited to share seven new books that she purchased for her classroom library. Four were African American children's literature books. They were *Remember the Bridge: Poems of a People* (Weatherford, 2002); *Feast for Ten* (Falwell, 2008); *Beatrice's Goat* (McBrier & Lohstoeter, 2002); and *Grandfather and I* (Buckley, 2004).

For the duration of the study, the researcher observed Mrs. Jones reading African American children's literature and constructing Thinking Maps®. Oftentimes it appeared that she used the maps to facilitate comprehension of the read alouds more than the core reading program selections. By the end of the study, the boys had definite ideas of which stories and Thinking Maps® they enjoyed interacting with the most.

Qualitative Data from the Fourth Grade Classroom

The fourth grade teacher, Mrs. Rosenberg had nine males who participated in the study. This classroom was selected because there was evidence of the use of Thinking Maps® with *Open Court Reading* on a consistent basis.

Description of the Fourth Grade Teacher Participant

Mrs. Rosenberg, a fourth grade teacher, embraced the concept of Thinking Maps® early on when it was first introduced to the district. She was trained by in-house district trainers and continued to attend follow-up workshops each time they were offered. She had been teaching for 15 years with earned certifications in both Science and Social Studies. Upon the completion of the study, Mrs. Rosenberg was one month away from receiving her National Board Certification. She had student developed Thinking Maps® posted in the hallway outside of her door and around the classroom (Figure S 23).

There were several Flow Maps with hand drawn colorful pictures depicting the sequence of events from students' fourth grade *Open Court Reading* anthologies. She used Thinking Maps® daily and believed that by using the maps, students received higher scores on their core basal reading lessons and unit assessments. Students in her classroom demonstrated adeptness at determining which map to use to display a specific thinking process and oftentimes told her which map they wanted to use and constructed them on an independent basis. She believed Thinking Maps® helped her students to go deeper with stories and to look for details.

Interview of Fourth Grade Teacher – Mrs. Rosenberg

The interview questions appearing below were posed by the researcher during a face-to-face interview with Mrs. Rosenberg.

1. Do you use the Thinking Maps® program across other academic areas as Math or Social Studies?

Mrs. Rosenberg: Yes I do.

2. Which Thinking Map® do you find the most effective?

Mrs. Rosenberg: I really like the Flow Map because the students retell the story in their own words in the way they see and understand the story.

3. Which Thinking Maps® do you use the most?

Mrs. Rosenberg: Probably the one I use the most is the Tree Map.

Probe: What do you use the Tree Map with?

Mrs. Rosenberg: Well we use it in spelling, with phonics...

Probe: Do you ever use it with Open Court Reading stories?

Mrs. Rosenberg: We did that once, but I don't remember what we used it for. It was at the beginning of the year and we used it with one of the stories. I think there were a

lot of details and a lot of parts to it. Oh, it was the medicine past and present story because it had a timeline. But it also had a list of things that happened, so we used it for each series of people and events that happened through medicine's history.

4. Which Thinking Map® do you observe your students constructing most frequently?

Mrs. Rosenberg: They like the Double-Bubble or the Bubble. If you asked them which one they had a choice they would use the Double-Bubble for everything.

5. How have Thinking Maps® impacted your students' critical thinking skills?

Mrs. Rosenberg: Well like with the Double-Bubble, it's helped them focus. So they have to pay more attention to detail. They have to know that when they place one Bubble in one spot, they have to place the exact same corresponding Bubble on the other spot and that makes them look at both sides and think through what is the same, what is it that's different, And the placement of the Bubble helps them go through the steps and the stages.

6. Were you trained in Thinking Maps® by a national consultant from the company or a district consultant?

Mrs. Rosenberg: Consultant for the district.

7. Do you find that Thinking Maps® are more effective, less effective, or just as effective as graphic organizers used in *Open Court*? Briefly explain.

Mrs. Rosenberg: Way more effective. I cannot stand the graphic organizers that are used in *Open Court*. I only used one graphic organizer from *Open Court* the whole year. I always find that there is some sort of Thinking Maps® to use instead. To me the graphic organizers just don't cut it. It doesn't help them look for the details. Thinking Maps® help them go deeper with what they're doing and think more. It gets them to use their mind and their ideas. Looking for details.

8. How do Thinking Maps® impact reading achievement in your male students?

Mrs. Rosenberg: When they use the Flow Map, I see that they pay attention to details so their retelling of the story is a lot more in depth; they look for more details. Even my poorest reader can give me more details if they are using a Thinking Map®.

9. What are the general attitudes of your male students towards reading? What makes you think so?

Mrs. Rosenberg: I think that a lot of my boys like to read.

Probe: Did they like to read at the beginning of the year?

Mrs. Rosenberg: No, they hated reading. They thought, “Oh no I have to read again,” but now they know. We have a routine. They know on Monday, we’re going to read the story for the first time. They know on Tuesday they’re going to read the story and they’re going to read for a grade. And on Wednesday they’re going to listen to it on tape, and Thursday they’re going to listen to it on tape. Unless of course it’s a really long story then it’s going to take us two days to read the story. They know what’s expected of them. Really even my poorest reader likes to read aloud and volunteers. I don’t have any boys who don’t like to read. I really don’t. Even my little boy who reads on a second grade level wants to volunteer to read. He wants to read. So they all like reading.

Probe: Do you think Thinking Maps® had anything to do with it?

Mrs. Rosenberg: I think its my methods because it’s a very structured class.... They need that routine; they need that consistency. We use Thinking Maps® all the time. I think that’s helped in some ways because they know there’s a way to understand the story better or a way to look at the story better.

10. Do Thinking Maps® help facilitate writing? Why do you say so?

Mrs. Rosenberg: We use it in writing and they ask for Thinking Maps®. Like when *Open Court* says to do a graphic organizer, I go, okay what Thinking Map® can we do instead because they [the students] want the Thinking Map®; they don’t want the graphic organizer in the workbook. They do; I’m not just saying that. It’s easier for them to understand and it’s easier for them to put their stuff together. I still have kids who don’t want to write. I definitely started the year with using the Thinking Maps® instead of graphic organizers. Like when they were writing autobiographies, we did the Circle Map when they talked about themselves. Then we did a Bubble Map on the best day of their lives. The event was in the middle and all the adjectives that expressed that day were in the outside Bubbles. Then they used that to write a paragraph for their autobiography about the best day of their lives. Then we used the Flow Map when we did a timeline of their life. They had all those pieces to put together and they wrote their autobiographies.

Probe: Anything else you want to add?

Mrs. Rosenberg: I just love using Thinking Maps®!

Descriptions and Exit Interviews of the Fourth Grade Male Participants

Mrs. Rosenberg gave the researcher in-depth descriptions of each male participant involved in the study. Nine boys: Joey, Peter, Mike, Tommy, Carl, Justin, Jake, Johnny, and Ryan participated in exit interviews with the researcher. The boys' completed interviews are presented in their entirety. Two of the boys, Billy and Ryan, received support from a special education Resource Room teacher.

Joey. Joey was Mrs. Rosenberg's favorite pupil. As a ten-year old, he came to her classroom at the beginning of the school year without the ability to write a paragraph and was uninterested in reading. He had grown over the past school year into an all "A" student with only one "B" in Science. His reading tests grades were great. Mrs. Rosenberg describes Joey as artistic, spoiled and smart.

1. Do you like to read? Why? If no, why not?

Joey: Yes, I like to read scary books; some people get scared and some don't.

2. Do you think you are a good reader? Why? If no, Why not?

Joey: Yes, I think I'm a good reader because I read more than a 100 words.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Joey: No...

Probe: Did anyone ever read to you when you were growing up?

Joey: Yes, my dad had read to me.

Probe: How many times did he read to you?

Joey: Every night before I went to bed.

Probe: He's not doing that anymore?

Joey: No

Probe: Do you want him to?

Joey: No

Probe: Why?

Joey: I'm too big and too old.

Probe: Well Mrs. Rosenberg reads to you.

Joey: She reads to the whole class.

4. How many storybooks do you think there are in your home?

Joey: Like regular storybooks that you read out of?

Probe: Yes, like the kind Mrs. Rosenberg has been reading to you. Picture storybooks.

Joey: Well I'm the only one with picture storybooks and I have a box full...like 25.

5. Do you go to the library? If yes, how often do you go?

Joey: Sometimes every Saturday and sometimes like once every two weeks.

Probe: Do you check out books or do you stay at the library and read them?

Joey: I stay at the library and read them and sometimes I check them out.

Probe: So you have a library card?

Joey: Yes.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Joey: Yes.

Probe: Do you have a favorite book?

Joey: *Hip Hop Speaks to Children.*

7. How do you feel about using Thinking Maps®?

Joey: I feel great because if you use Thinking Maps® you're going to understand more about what you're reading about.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

b. Thinking Maps® helped me to understand the stories.

Why do you say so? _____

c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Joey: b- It helped me to understand the stories like *I Told You I Can Play* when somebody reads that, you probably won't get a great understanding, but when you do Thinking Maps® everyday you can understand it better.

Probe: Do you have a favorite Thinking Map?

Joey: The Bubble Map.

Probe: What does that help you to do?

Joey: It helps you get details.

Probe: What is the Bubble Map used for? Do you remember?

Joey: It is used to describe a person.

Probe: Do you just put a person inside of that center bubble or can you put anything inside of that center bubble?

Joey: Just the person that you are describing.

Probe: Can you use other things besides people?

Joey: Yes.

Probe: Yes, like you can put an apple inside the center Bubble then how would you describe the apple?

Joey: [researcher motioned with hands placing round circles in the air while asking "What can go in this bubble?"] The apple is red, ["What about this bubble? [it] has a

stem,["And this bubble?"] the apple is hard...

Probe: You can put anything inside that center bubble. It can be a person, a thing, and you can even put a number inside the bubble. If I put six inside of this middle bubble, I can put $3+3=6$, $6+0=6$, can you think of another one?

Joey: $5+1$, $4+2$...

Probe: Good, all of those are ways to describe the number six. So you can describe it in several ways. Anything else you want to say about Thinking Maps® or the books you read?

Joey: What kind of book am I going to get?

Probe: It will be up to you to choose the book you like.

Peter. Peter was a ten-year old who might be placed in a learning disabilities classroom due to reading difficulties. Mrs. Rosenberg reported that he is repeating the fourth grade and does not do his homework. He may be failing the fourth grade again. He said he did not like to read at all and does not think of himself as a good reader because, "Sometimes I be messing up on words."

1. Do you like to read? Why? If no, why not?

Peter: No, sometimes I like to read to see how fast I can read, but I don't like reading all the time because I just don't like it.

Probe: Do you think it's the type of books you are getting or listening to?

Peter: Some of the... I like some of the books that I read, but...

Probe: Is there a type of book you would like better?

Peter: Martin Luther King books.

2. Do you think you are a good reader? Why? If no, Why not?

Peter: Sometimes I can read good and sometimes I be messing up on my words.

3. Does anyone read to you at home? If yes, how frequently does someone at

home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Peter: Like I show my momma a book that I want to read to me and she can see how I read; I read to her.

Probe: How often do you read to her?

Peter: Every time I get a book that I would like to read, like my Michigan book, I show it to my momma.

4. How many storybooks do you think there are in your home?

Peter: Twenty-something.

5. Do you go to the library? If yes, how often do you go?

Peter: Sometimes I go with my momma's friend every three months.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Peter: I like some of them, but not all of them.

Probe: Which ones did you like?

Peter: *Hip Hop...Jackie, Dad, and Me, Coming on Home Soon.*

7. How do you feel about using Thinking Maps®?

Peter: b Because you have to figure out important words in the stories and the pictures help you understand it.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.

Why do you say so? _____

- c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Peter: b Because you have to figure out important words in the stories and the pictures help you understand it.

Mike. Mike was a nine-year old who might have Attention Deficit Hyperactivity Disorder according to Mrs. Rosenberg, his teacher. He had a lot of potential and could read. He took care of his baby brother and often got up in the middle of the night to give him a bottle. His grades have dropped over the school year and he had been tardy 39 times.

1. Do you like to read? Why? If no, why not?

Mike: I'm good at it, but no because I think like some books are boring.

Probe: What books do you like?

Mike: Action books, comic books.

2. Do you think you are a good reader? Why? If no, Why not?

Mike: I am. I think I'm a good reader because every grade I get on reading in my class I get an A or a B.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Mike: No.

Probe: When you were growing up did anyone read to you?

Mike: Not that I remember.

4. How many storybooks do you think there are in your home?

Mike: A whole lot; I just don't read them all the time. I know I taught myself to read at the age of 5 in this school in kindergarten.

Probe: You taught yourself to read? Why do you say you taught yourself to read?

Mike: Because one day I just picked up a book and I just read it at the age of five in kindergarten.

5. Do you go to the library? If yes, how often do you go?

Mike: You mean the library at school or the “City” Library?

Probe: The “City” Library.

Mike: I only went there once

Probe: You only went once in your life?

Mike: Yes.

Probe: Do you have a library card?

Mike: I used to.

Probe: But you don’t go to the library anymore?

Mike: No.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Mike: The ones that you be bringing?

Probe: Yes.

Mike: Yeah I like those.

Probe: Why do you like those?

Mike: Because they aren’t boring and they’re fun.

Probe: So what were the other kind of books that you listened to before I started bringing books? Did Mrs. Rosenberg read to you?

Mike: She read us the *Open Court* books.

Probe: Did you have a favorite book?

Mike: *Hip Hop Speaks to Children.*

7. How do you feel about using Thinking Maps®?

Mike: I don’t like them all the time because usually the easy ones are the Bubble Map.

Probe: And that’s why you don’t like them because they are too easy or what?

Mike: They're too hard. One minute we gotta do a Circle Map, then next time we gotta do a Bubble Map, which is the easy one, now we gotta do a Flow Map, and the Brace Map and I just don't get all of them, the only one I get is the Bubble and the Double-Bubble, and the Circle Map.

Probe: That's okay though. If those are the ones you understand the best, that's okay as long as you know how to use them the right way. Do you have a favorite Thinking Map®?

Mike: The Bubble Map.

Probe: What do you use the Bubble Map for?

Mike: You use it like to tell, tell (long pause) a person's personality like in the book [*Because You're Lucky*] about the uh...two kids, that one kid that got adopted. We had to do him, what he liked and what he didn't like and about his personality.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Mike: b (However, he had no further response)

Probe: Are you sure that's how you feel...be honest?

Mike: Some of the time...some of the time I understand it and sometimes I don't because usually I don't be listening to the story, sometimes I be sleep.

Probe: Now you said your favorite map is the Bubble Map and that you use that to look at personalities.

Mike: Like...likes and dislikes?

Probe: Anything else you want to say about Thinking Maps®?

Mike: No I'm done.

Probe: Anything else you want to say about the books you read?

Mike: I think some were fun and some of them I didn't like. I mean not that I didn't like, I just didn't understand it or didn't get into it.

Tommy. Tommy was a fetal alcohol syndrome baby. The State monitors him developmentally because he is part of the system. He had excellent recall and read well. At nine years old, Tommy had difficulty with fine motor skills, articulation, handwriting, and he stuttered.

1. Do you like to read? Why? If no, why not?

Tommy: Yes, I like to read. It can help you read and get better.

2. Do you think you are a good reader? Why? If no, Why not?

Tommy: Yes because I like to read.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Tommy: No.

Probe: Anyone ever read to you?

Tommy: Yes.

Probe: Who read to you?

Tommy: My cousins.

Probe: What kind of books did they read to you?

Tommy: They read me some fairy tales and some books off of the cartoon network and stuff like that...one to two times a week.

4. How many storybooks do you think there are in your home?

Probe: Did your cousins bring the books to you or did you already have the books at home?

Tommy: I had the books already.

Probe: How many books did you have?

Tommy: About 30.

5. Do you go to the library? If yes, how often do you go?

Tommy: No...I will be going because my mother is going to teach me how to use e-mail.

Probe: Why do you need to know how to use e-mail?

Tommy: It's like on my website page on WWE, I need e-mail cuz there is certain stuff that I need to get in.

Probe: What kind of stuff do you need to get in?

Tommy: Like to see the videos; certain videos that I haven't seen.

6. Do you like the picture storybooks that you read or listen to in your classroom

Tommy: Yes, *Hewitt Anderson's Great Big Life*.

Probe: Why do you like that book?

Tommy: It was funny cuz he was short...and he was acting like he was going on adventures and then he had fell asleep in his daddy's hand.

7. How do you feel about using Thinking Maps®?

Tommy: I like using Thinking Maps® because they can help you describe people and tell you what happened first or it can tell you what happened when they did it or something like that.

Probe: You said it helps you to describe. What map do you use to describe?

Tommy: The Bubble Map.

Probe: Do you have a favorite Thinking Map®?

Tommy: The Flow Map.

Probe: What did you do with the Flow Map?

Tommy: Tells you what happened first, next, and last

Probe: Why do you like the Flow Map

Tommy: It helps me to understand what I am supposed to be doing and it just helps me; I don't really do the Bubble Map like that, but I do the Flow Map a lot. When my teacher will do stories and it just helps me to understand what happens first and last.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Tommy: b Because of what I just said. It just helps me...I can understand what's going on in the story and give good details when my teacher asks me.

Carl. Carl was an 11-year old who has had behavioral difficulties in school. He appeared to be an angry boy. He was supported by the Resource Room teacher and was blossoming well in her smaller environment. He functioned at a second grade level in most academic tasks. Carl's mother was an alcoholic.

1. Do you like to read? Why? If no, why not?

Carl: A little bit. I don't like to read cause I don't know how to read like that.

2. Do you think you are a good reader? Why? If no, Why not?

Carl: No.

Probe: Why?

Carl: I don't know.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Carl: Yes.

Probe: Who?

Carl: My sister [reads to him] one time a week.

4. How many storybooks do you think there are in your home?

Carl: Six.

5. Do you go to the library? If yes, how often do you go?

Carl: No.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Carl: Yes.

Probe: Do you have a favorite book?

Carl: Yes, *Hip Hop Speaks to Children*.

7. How do you feel about using Thinking Maps®?

Carl: Very good.

Probe: Did you have a favorite Thinking Map®?

Carl: *Jackie, Dad, and Me*.

Probe: What map did you use with that story?

Carl: A Thinking Map®.

Probe: Which one?

Carl: A Flow Map.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.

Why do you say so? _____

- c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Carl: c Because when she reads it out loud I understand the story.

Probe: So the Thinking Maps® didn't really help you understand the story.

Carl: No.

Probe: Did it help you more that she read it out loud?

Carl: When she read it out loud it helped me more.

Probe: Did you have a favorite Thinking Map®?

Carl: The Double-Bubble.

Probe: What did you use the Double-Bubble Map for?

Carl: Say how two characters are alike and how they different.

Probe: Anything else?

Carl: No.

Justin. Justin was an energetic, delightful, and articulate ten-year old who embraced life with zest and enthusiasm. He liked to read some of the time and described himself as a good reader because, "I don't never mess up on words." Justin's father had been incarcerated, but now that he is out; they visit each other frequently.

1. Do you like to read? Why? If no, why not?

Justin: Some of the time, when I get very bored, I like to read books.

2. Do you think you are a good reader? Why? If no, Why not?

Justin: Yes, I don't ever mess up on words and I study them all the time.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Justin: No one reads to me at home, only when I was little...my mom and dad used to read to me one to two times a week.

4. How many storybooks do you think there are in your home?

Justin: A lot. They are in my basement.

5. Do you go to the library? If yes, how often do you go?

Justin: No.

Probe: Why don't you go to the library?

Justin: I don't go to the library because I be too busy with my work.

Probe: What about on weekends?

Justin: On the weekends I go anywhere my mom goes or with my dad.

Probe: There is a library at your school.

Justin: Yes.

Probe: Why don't you use that library?

Justin: I didn't know, we get to go the library at the weekends.

Probe: Do you get to go to the library in your school?

Justin: No...only it was in 3rd grade and 2nd grade cause we had a library at our old school, but it (the school) got shut down.

Probe: But do you go to the library in your school now?

Justin: Yes in 3rd grade, but not in 4th grade.

Probe: You don't go down to the library now?

Justin: No.

Probe: Can you check books out?

Justin: Only on free days; you can ask Mrs. Rosenberg if you can take the book out and bring it back on Monday.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Justin: Yes. I like the illustrator how they drew all the pictures, they did the best they can.

Probe: Did you have a favorite book?

Justin: Yep, *Brothers in Hope* and *Hip Hop Speaks to Children*.

7. How do you feel about using Thinking Maps®?

Justin: It helped me more to think about all the stories, it helped me to understand more.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Justin: b Because you...umm...what was the question again? I know it help me understand the stories because my teacher read it to us and then we all learned and she told us to do it by ourselves then we correct ourselves.

Probe: Did you have a favorite?

Justin: The colorful Thinking Map; *Grandma's Hair...*

Probe: That's a book, I mean a Thinking Map® that you liked.

Justin: The one we made a colorful Circle Map, it was about *Dad, Jackie, and Me*. We used a Double-Bubble Map with blacks and whites; with *Dad Jackie and Me*, they spiked him and was talking about him.

Probe: What Thinking Map do you like the best? [researcher named all the maps]

Justin: Out of all? The Tree Map because it gives you more information than what you know.

Probe: Anything else you want to say about Thinking Maps®?

Justin: I'm glad someone invented Thinking Maps®.

Probe: Why do you say that?

Justin: Because it helps a lot of people these days and it going to give you a better education.

Probe: What about the books I gave your teacher to read to you?

Justin: They were great books and we all enjoyed it.

Jake. Jake was a ten-year old with a history of behavior problems in Mrs. Rosenberg's classroom. She reported that he picked on everybody. Eventually she asked the principal to transfer him to another fourth grade classroom about four weeks before school was out to maintain peace. Jake said reading was his favorite subject and believes he is a good reader.

1. Do you like to read? Why? If no, why not?

Jake: Yes, reading is my favorite learning subject.

2. Do you think you are a good reader? Why? If no, Why not?

Jake: Yes cause I have a nice voice and I know how to pronounce them right and don't stutter.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Jake: Not really, I just read on my own.

Probe: When you were younger did someone read to you?

Jake: I don't remember.

4. How many storybooks do you think there are in your home?

Jake: Five.

5. Do you go to the library? If yes, how often do you go?

Jake: Yes, when I am at my grandma's house, it's a library by her house on State Avenue and I go there. I usually go to the library like three times a month.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Jake: Yes

Probe: Did you have a favorite book?

Jake: Like an *Open Court* Book?

Probe: Any book. What about the ones I brought to your class?

Jake: I like the one you had read to me.

Probe: Because You're Lucky.

Jake: Yes.

7. How do you feel about using Thinking Maps®?

Jake: I like Thinking Maps®. I usually don't do the Thinking Maps®, but when I did do them, the first time I did a Flow Map in Mrs. Rosenberg's class.

Probe: What is a Flow Map used for?

Jake: You like write what happened in that little part of the story and then you draw a picture of it.

Probe: Now Jake you were transferred out of Mrs. Rosenberg's class into another fourth grade class. When you go to the other class do you listen to stories and do Thinking Maps®?

Jake: We listen to all the stories but we don't do no Thinking Maps®

Probe: Do you want to do them or you don't care?

Jake: If I can, I will do them.

Probe: It doesn't matter whether you do them or not?

Jake: It don't really matter, but I do like doing them.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Jake: b It kind of helped me. It helped me so I can remember it. It is like a note. So it did kind of help me a little bit.

Probe: Do you have a favorite Thinking Map®?

Jake: I like the Double-Bubble Thinking Map®.

Probe: What do you do with the Double-Bubble Thinking Map®?

Jake: That story with the doctor girl [that was in] the *Open Court* book; she was like a doctor in her neighborhood and she went around taking care of people that she knew. I keep on forgetting what kind of doctor she was. But then [there was another] doctor [who was] working at the hospital. We had like a big old circle [Circle Map] and [wrote] the doctor who worked at the hospital and another circle and we put the doctor that worked around the neighborhood and then we wrote all the ideas about what they do and how they get paid. Like those that worked at the hospital got paychecks and stuff. When they do it, they help you in emergency and stuff; they help you there. The doctors in the neighborhood didn't have hospitals and stuff.

Probe: Anything else you want to say?

Jake: She [doctor in the neighborhood] was walking around helping people and we had to put all the ideas [in the Circle Map] about what she did and how she helped people. She didn't go to college for it because it was back in the 1800s. She just knew it from watching stuff. They didn't have hospitals and stuff.

Probe: Did you want to say anything about the books you read?

Jake: Most of the books we read, I liked them.

Probe: Do you like the Open Court stories the best or the books that were brought in?

Jake: Brought in...because they had more pictures and I liked the way they talked.

Probe: Do you have an interest in a certain type of story?

Jake: I like funny stories.

Johnny. Johnny was a mature ten-year old who was diagnosed with Oppositional Defiant Disorder and Attention Deficit Disorder. He enjoyed classical music and reading. He received the support of several related services from a School Social Worker, a Resource Room teacher, private psychologist, and Occupational Therapist. He keeps a stress doll on his desk to squeeze when he gets angry.

1. Do you like to read? Why? If no, why not?

Johnny: Yes, it's important for the education of life. It needs to be read in a good time and space. Like my mother always says "Reading is different books that you read at different times." like I get *Dragonball Z* books. My momma says you can't always keep on reading the same books because the book is not the real world. So it's important to read different types of books, cuz *Dragonball Z* is a non-fiction book and is not the real world.

2. Do you think you are a good reader? Why? If no, Why not?

Johnny: Yes, because I take my time most of the time. I know I'm a good reader cuz when I read *Dragonball Z* or read *Transformers*

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Johnny: My momma some of the time; one to two times a week

4. How many storybooks do you think there are in your home?

Johnny: Thirty-nine books on the shelf, three on the shelf, 9x3...is 3x3117 books.

5. Do you go to the library? If yes, how often do you go?

Johnny: Yes, that's where I get my *Dragonball Z* books.

Probe: Oh so you checked your books out?

Johnny: Yes.

Probe: But the books that you have at your house, do you own those books? Or are

they books that you check out?

Johnny: I own the books.

Probe: How often do you go to the library?

Johnny: Every ... once it opens up because today we're going because we have to return, but it ain't even the due date of the return book. But I need to take it back because I need to figure out what's gonna happen in the next volume.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Johnny: Yes.

Probe: Do you have a favorite book?

Johnny: *Co Co's Kitten.*

Probe: Now, of the books that I gave your teacher to read, which one of those do you like?

Johnny: *Ron's Big Mission.*

7. How do you feel about using Thinking Maps®?

Johnny: The Thinking Maps®...I like how that we are doing colorful Thinking Maps®; now that we do those, those are pretty fun.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Johnny: b, Thinking Maps® helped me out a lot cause at my old school we never did Thinking Maps®. We wrote a paragraph and that was supposed to be our rough draft, then they would keep our rough draft. Then we had to think the whole thing over again and write my final draft, so we never used Thinking Maps®.

Probe: Do you use them for writing? What do you get from them?

Johnny: I get from them a lot because it's a lot easier than having to think it from my head. I don't have to memorize it. It's better than nothing. That's what helps me out because then I don't have to memorize it anymore.

Probe: Do you have a favorite Thinking Map®?

Johnny: The Circle Map, the Bubble Map, the Flow Map, and the Tree Map; oh what else..., and the Multi-Flow Map, and the Double-Bubble Map.

Probe: Which one is your best one? Which one do you like the best?

Johnny: The Tree Map.

Probe: The Tree Map? Why do you like the Tree Map?

Johnny: Because it looks like a tree. I can just make a poster on the tree like the one they showed in cyberspace. They made a thinking map of a tree branch doing math instead of English. It was so fun, except they doing math instead of English.

Probe: Tell me something... do you know what you use the Tree Map for?

Johnny: I use the Tree Map so I can give a lot of details, so I can put details under each. Most times I draw some leaves, but I don't do that much or I'll get off...

Probe: Off task?

Johnny: Yes

Probe: Anything else?

Johnny: Well I might as well come out with it. Maybe I shouldn't say this, I just don't know. It's funny, cuz everything I like to do a Tree Map on, but the rest of the class likes to do Bubble Maps. That's cuz Bubble Maps are easy, but I like to do something at my level, [something] that's accelerating, nothing that a kindergartener [would do].

Ryan. Ryan was a ten-year-old Resource Room student who was included in the fourth grade class most of the day. His Individualized Education Plan (IEP) is for emotional issues. In the fourth grade setting he is responsive and made an effort to attend to academic tasks.

1. Do you like to read? Why? If no, why not?

Ryan: Yes, it helps your mind get bigger.

Probe: What can you do with a bigger brain?

Ryan: You can be smarter for 5th grade, for 6th grade and all the other grades, and go to college.

2. Do you think you are a good reader? Why? If no, Why not?

Ryan: Yes, I am a good reader because I can pronounce the words by myself. If I need help I'm not afraid to ask.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Ryan: No.

Probe: When you were little did anyone read to you?

Ryan: Yes.

Probe: Who?

Ryan: Mom and Dad.

Probe: They don't read to you now?

Ryan: No.

Probe: How often did they read to you?

Ryan: They read to me one or two times per week.

4. How many storybooks do you think there are in your home?

Ryan: One.

5. Do you go to the library? If yes, how often do you go?

Ryan: I go to the library when I got time on the weekends.

Probe: Do you have a library card?

Ryan: No, but I'm going to get one.

Probe: So you don't check books out of the library, you just go?

Ryan: My dad checks out books for me.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Ryan: My favorite book is *Max Found Two Sticks*.

7. How do you feel about using Thinking Maps®?

Ryan: I feel good about it because if you don't pull out a Thinking Map® and then you have all these ideas in your brain and they won't be able to get let out.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

- b. Thinking Maps® helped me to understand the stories.

Why do you say so? _____

- c. Using Thinking Maps® made no difference to me understanding the story.

Why do you say so? _____

Ryan: b, I say so because if I read a story, I need to at least write it out , so I can remember it...so I can show it to my parents.

Probe: Do you have a favorite Thinking Map®?

Ryan: *Dad, Jackie, and Me.*

Probe: No that's the name of a story; do you have a favorite Thinking Map®? You know the Thinking Maps® are the Circle Map, Bubble Map, Double-Bubble Map, Flow Map, Multi-Flow Map...

Ryan: Oh, I like the Flow Map because after you get done reading, you get to draw pictures with it.

Probe: What does the Flow Map help you to do?

Ryan: It helps me to put it all in order from one to ten.

Probe: Anything else you would like to say about Thinking Maps® or books you read in the class?

Ryan: Well, the book that I did not get to see was *The Gospel Cinderella*.

Probe: I think your teacher is going to order it and you can borrow it from her next year.

In summary, with respect to the fourth grade boys' perception of reading and exposure to books (Table 21), five of the boys said they liked to read. Seven perceived themselves as good readers. Carl said, "No." to indicate he was not a good reader and Justin said he was a good reader, but only liked to read "some of the time." The frequency of boys being read to at home was zero. According to the boys, the numbers of books available in the home for reading ranged from one to 39. One said he had "a whole lot" [of books], and another said "a lot."

None of the fourth grade male participants were read to at home, but recalled being read to as young boys by their parents. Joey, a fourth grader, was not presently being read to at home, but was read to nightly as a young boy by his father. He felt that he was too big and too old to be read to now. Of the nine interviewed, six recalled being read to as little boys by a family member. Tommy, Justin, and Ryan were read to by one or both of their parents when they were younger. Peter said that he reads to his mother, so she can "see how I read."

When queried about their visits to the library, the boys gave a range of responses as shown in Table 21. Peter goes to the library about once every three months with his mother's friend and has about 20 something storybooks. Mike thinks some storybooks are boring and recalled going the public library only once in his life. He said he once owned a library card and that he had a whole lot of storybooks, but does not like to read

Table 21

Fourth Grade Boys' Perception of Reading and Exposure to books

Participant	Likes to read	Perceives self as a good reader	Frequency of being read to at home	Number of Storybooks in the home	Go to the Library
Joey	Yes	Yes	0	25	Once every two weeks
Peter	No	Sometimes	0	20 something	Every three months
Mike	No	I am	0	A whole lot	Once
Tommy	Yes	Yes	0	About 30	No
Carl	No	No	0	6	No
Justin	Some of the time	Yes	0	A lot	No
Jake	Yes	Yes	0	5	Yes
Johnny	Yes	Yes	0	39	Yes
Ryan	Yes	Yes	0	1	Yes

them. Five of the fourth grade males reported going to the library, three do not go and the remaining two go on an infrequent basis. According to his exit interview, Mike found books to be boring and preferred action and comic books. Mike stated that he did not remember anyone reading to him when he was growing up and had only been to the library once in his lifetime. Joey and Johnny had the most storybooks in the home and spent more time going to the library. Joey's Thinking Maps® reflected a quality of thoroughness that the other boys did not exhibit (Figures S23, Figure S26, and Figure S27). Carl had very few books in the home, did not go to the library, and was not read to by anyone in the home.

Fieldnotes from the Fourth Grade Classroom

Within two years, Mrs. Rosenberg attended three sessions on Thinking Maps®, the introductory training day, then subsequent professional development opportunities. These follow-up trainings titled, a) “Thinking Maps® Going Deep”; b) “Thinking Maps® Building Vocabulary”; and c) “Thinking Maps® Sense of Story,” emphasized professional development across the academic content areas, as well as using the maps with children's literature and math. When this study began midway through the school year, Mrs. Rosenberg had been using Thinking Maps® with her fourth grade class since the beginning of the fall semester. Student-developed Thinking Maps® were displayed on the wall outside of her classroom, the chalkboard, and on a bulletin board inside her room (Figure S15). She had a literacy rich environment complete with an extensive classroom library and a bulletin board that was labeled “Put *Said* to Bed.” Students often

added words to the board that were synonymous with the word “said” (e.g. murmured) to demonstrate vocabulary expansion.

Mrs. Rosenberg read more African American children’s literature books to her students than the other two teachers involved in the study. She reported that many of her boys did not like reading at the beginning of the school year especially Joey, Peter, Mike, and Carl. They did not like to read aloud or pick up a book at all. Carl and Peter struggled with reading. She said Peter had problems “getting his words out.” Joey hated reading and his grades reflected that until he realized he was better at it than he thought; then his grade improved.

As the school year progressed, all of the boys became more interested in reading and all of their attitudes changed for the better. Mrs. Rosenberg noted a lot had to do with having the children’s literature books provided by the researcher being read aloud. The researcher recalled Mike, one day, saying they [storybooks] are a lot of fun. Mrs. Rosenberg read *Doo-Wop Pop* (Schotter, 2008) five times because both she and the students loved it so well. This story is about a former a cappella doo-wop singer working as a school janitor that details how using music helped five shy students face their fears. The students used the rhythms and sounds of their school to develop coordinated song and dance routines and their classmates loved it. It is a story based loosely on the real life experiences of two *doo-wop* singers who because of unfair contractual situations were denied royalties to their music, so they took menial jobs or non-celebrity jobs in a high school.

During the study, the researcher noted that Mrs. Rosenberg demonstrated the use of Thinking Maps® to assist with comprehension of read-alouds from the literature books provided by the researcher more than those from the *Open Court Reading* lessons. She was the only teacher who researched each book title to determine the content, appropriateness for her students, and awards each book had earned. She had concerns about the quality of *Read and Rise* (Pinkney 2006), but found the other book titles to be acceptable. On one of the visits, the researcher brought in a box with the fourth grade Leveled Library, which accompanies *Open Court Reading*. We looked at each book and found only one book with an African American character which was a pencil drawing of a boy on the cover, *The Toothpaste Millionaire* (Merrill, 2006).

Each visitation to Mrs. Rosenberg's classroom began with her placing a book on the document camera which projected an image of each page on a screen. Mrs. Rosenberg read from the book then queried students using the format supplied to her by the researcher Appendix M. Mrs. Rosenberg designed many questions about each story and used them to guide classroom discussion and promote critical thinking. Sometimes before beginning a new story a Circle Map was drawn on the chalkboard to access prior knowledge. After the story was read, it was followed by the development of another thinking map depending on how she wanted to access their understanding of the story. On one visitation, the researcher observed Mike writing the words first before drawing the boxes in his Multi-Flow Map. When asked why he did not draw the Thinking Map® first, then write in the boxes, he stated, "If I write something long, it may not fit in the boxes."

In the first four weeks of the study, Mrs. Rosenberg guided the boys by helping them select which map to use with each story. She assisted them by discussing each story in-depth and developing their ideas to write inside the map. The boys mainly constructed Bubble Maps and Double-Bubble Maps. At this point in the study, the researcher noted a limited amount of Multi-Flow Maps and no Bridge Maps. As a result, the researcher demonstrated how to use the Multi-Flow Map and provided examples. By the end of the study, the boys were able to consider which of several Thinking Maps® that best correlated to the thinking process they were trying to achieve.

For example, the story *Because You're Lucky* (Smalls, 1997) was about a young boy, Kevin, who came empty-handed to live with his aunt and cousins. He did not have clothes or even a toothbrush when he showed up at his aunt's front door. Kevin's cousin Jonathan was less than cordial and made it very difficult for him to live with them because he did not want to share his toys, clothes, or room. After Mrs. Rosenberg finished reading the story, she asked students what map they would like to use with this story. Justin said, "I am going to use the Double-Bubble Map to compare Kevin with Jonathan" (Figure S16). Joey said, "I am going to draw a Circle Map and put *"family* or *"lucky*" in the middle." Tommy made a Bubble Map to describe Kevin. Tommy was praised for adding the word "muttered" and Joey added the word "murmured" from the story to the "Put *Said* to Bed" bulletin board. Another student added the word "chattered." As noted earlier, this was a bulletin board used to collect synonyms for the word "said" thereby facilitating the students' vocabulary expansion.

Mrs. Rosenberg used a Circle Map divided into sections to assist students with recall of vocabulary from the stories in *Open Court Reading* (Figure S17). Much like Mrs. Jones, she divided the circle into sections as the synonym, antonym, illustration, and sentence context. All of which served to reinforce vocabulary knowledge. One of the thematic Units from *Open Court Reading* was on Communication. The researcher left two books to correlate with that theme, *Dear Mr. Rosenwald* (Weatherford, 2006) and *Coming on Home Soon* (Woodson, 2004). *Dear Mr. Rosenwald*, (Weatherford, 2006) is a true story about schools built in the 1920s. Inspired by Booker T. Washington, Julius Rosenwald then president of Sears and Roebuck donated millions of dollars to build schools for African American children in the rural South. The community helped to raise additional funds for furniture, equipment, supplies, buses needed to open the school. Peter drew a Flow Map sequencing the events in the story (Figure S18).

By the conclusion of the study, Mrs. Rosenberg stated that she never realized how many of her students never had a bedtime story read to them. She stated that from now on she would integrate read alouds as part of her weekly routine. The boys became so engaged with each story and the construction of Thinking Maps that by the end of the study they recalled the book titles and plots from the stories that Mrs. Rosenberg read to them many weeks prior. The boys made independent decisions on which Thinking Map to use with a story based on the thinking process.

Qualitative Data from the Learning Disabilities Classroom

Mrs. Smith is a learning disabilities teacher with 10 males who participated in the study. They ranged in age from seven to 11 years old. The researcher utilized her

classroom because all of her male students were diagnosed with a learning disability in reading. She thought that using Thinking Maps® would enhance their learning while providing a strategy to improve critical thinking. Mrs. Smith along with her staff colleagues were the first teachers in this district trained in Thinking Maps®. Mrs. Rosenberg, the fourth grade teacher participant in this study was also trained at that time. Mrs. Smith was excited about the study being conducted in her classroom. She believed it would provide her with an opportunity to solidify her knowledge of Thinking Maps®, assist her in improving her students' comprehension, and add quality literature to her classroom library. Mrs. Smith agreed to integrate Thinking Maps® on a daily basis.

Description of the Teacher Participant of the Learning Disabled

Mrs. Smith has been a special education teacher for the past 19 years. She is certified to teach Learning Disabled (LD), Mildly Cognitively Impaired (MICI), Physically or Otherwise Health Impaired (POHI), homebound, and Emotionally Impaired (EI) students. She also is certified to teach Social Studies. Mrs. Smith was trained in Thinking Maps® in 2006 by the researcher; however, she did not attend the entire training course nor has she had any follow-up training or support. She uses Thinking Maps® three to four days per week. The maps she used most frequently to facilitate reading were the Circle, Bubble, and Double-Bubble Map. Sometimes she used the Flow Map to assist students with sequencing events in a story. She believed that Thinking Maps® are an excellent visual tool to improve students' ability to access prior knowledge and they empower students to be more independent in acquiring meaning when reading.

Ten of the boys out of 15 were part of the membership in Mrs. Smith's learning disabilities classroom at the beginning of the study.

Interview of the Learning Disabilities Teacher – Mrs. Smith

The interview questions appearing below were posed by the researcher during a face-to-face interview with Mrs. Smith.

1. Do you use the Thinking Maps® program across other academic areas as Math or Social Studies?

Mrs. Smith: I would say yes, but we have used the Bubble Map. I didn't so much push the names of the maps. We've used the Bubble Map. I just said let's just put this in the center and see what we can add to it. So what I am doing now is making sure they know what the names of the maps are. I didn't do that before.

Probe: Even more important is what thinking process is linked to it so that they can start picking it up on their own. So if you say do a Bubble-map on the character of John in their story, they'll know that they are describing John.

2. Which Thinking Maps® do you find the most effective?

Mrs. Smith: Actually, we have been using the more simple ones as the Circle Map and the Bubble Map and we talked about the Flow Map in terms of sequencing; just making sure things are in the correct order. What happened first, what happened second, as simple as I can keep it. They have a lot of trouble with the Tree Map. We have been using vocabulary from the story with the maps. The simple concept works best and because I am working with a large group and so varied in terms of the age range.

Probe: Tell me about the type of class you have.

Mrs. Smith: I have 15 students. They range in ages from seven [years old] through 11 and grades one through five. It's quite a challenge to get my little ones to understand sometimes what it is we are trying to do. Many of them are diagnosed ADHD, some are on medication, and so we have many challenges as we move through these lessons.

Probe: Do you have groups?

Mrs. Smith: We have groups.

Probe: How many groups do you have?

Mrs. Smith: We only have two groups. And when possible most of it is whole group, but when we break down for the vocabulary and reading I have two groups. All of the students are functioning close to first grade in both reading and math.

3. Which Thinking Map® do you use the most?

Mrs. Smith: Bubble Map and the Circle Map.

4. Which Thinking Map® do you observe your students constructing most frequently?

Mrs. Smith: They like the Double-Bubble or the Bubble. If you asked them which one...they had a choice, they would use the Double-Bubble for everything.

5. How have Thinking Maps® impacted your students' critical thinking skills?

Mrs. Smith: The Bubble Map helps them go through the steps and the stages.

6. Were you trained in Thinking Maps® by a national consultant from the company or a district consultant?

Mrs. Smith: Consultant for the district.

7. Do you find that Thinking Maps® are more effective, less effective, or just as effective as graphic organizers used in *Open Court*? Briefly explain.

Mrs. Smith: Way more effective.

8. How do Thinking Maps® impact reading achievement in your male students?

Mrs. Smith: It helps them to increase their understanding of stories.

9. What are the general attitudes of your male students towards reading? What makes you think so?

Mrs. Smith: They don't like it because they are struggling readers.

10. Do Thinking Maps® help facilitate writing? Why do you say so?

Mrs. Smith: Yes.

Descriptions and Exit Interviews of Learning Disabled Male Participants

Mrs. Smith spent a considerable amount of time informing the researcher about the male students in her classroom. Each student had his own unique set of learning problems, but the common thread among all of them was that none read on grade level. They were segregated in their learning disabilities classroom most days with little opportunity for inclusion with their non-disabled peers. Parental support varied among the boys and only two of the boys had a father figure in the home.

Eight males: Bobby, Cortez, Marcus, Jimmy, Douglas, David, Raymond, and Georgie participated in exit interviews with the researcher. The boys' completed interviews are presented in their entirety.

Bobby. Bobby was a verbal eleven-year-old student who used critical thinking skills very well. He excelled in Math, but not reading. According to his teacher he can barely write or read. Bobby was not mainstreamed into a Math class. Bobby's reading comprehension according to school achievement testing was at a kindergarten level. His reading and speech were delayed.

1. Do you like to read? Why? If no, why not?

Bobby: Yes, because you can learn from books and you can read more better.

2. Do you think you are a good reader? Why? If no, Why not?

Bobby: Yes, because I read books on the weekends and every time I get out of school.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Bobby: Yes, my mom and her boyfriend; two times a week.

4. How many storybooks do you think there are in your home?

Bobby: I read *Spongebob*, *Ninja Turtles*, the *Obama* book, and a game book.

Probe: So about how many books is that?

Bobby: About five books.

5. Do you go to the library? If yes, how often do you go?

Bobby: Yes, when we not doing nothing...mostly every Wednesday.

Probe: Do you check out books or do you stay at the library and read them?

Bobby: Sometimes we check out and sometimes we leave them there.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Bobby: Yes.

Probe: Do you have a favorite book?

Bobby: *Big Jabe*.

7. How do you feel about using Thinking Maps®?

Bobby: Good.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Bobby: b Because I'll read the story and I can't understand it, then I will do a Bubble Map and then I'll do a summary about it.

Probe: Did you have a favorite Thinking Map®?

Bobby: The Double-Bubble, cause it can talk about one person and another person and you can talk about both of them.

The researcher probed further with the learning-disabled boys to assess understanding of the maps due to the teacher beginning *consistent* instruction at the onset of the study during second semester. The researcher conducted an informal assessment of each male participant involved in the exit interview. After flashing a picture of one of the Thinking Maps®, the student stated the name of the map and made a comment demonstrating understanding. Bobby stated the following: Circle Map - describe the story; Bubble - describe the person; Double-Bubble – describes two people and what they have in common; Tree [did not know thinking process], Flow – first, next, and last.” Bobby could not identify the Brace Map, Multi-Flow Map or Bridge Map, but did know that the Brace Map was used to “break things in half.”

Cortez. Cortez was an eleven-year old reluctant student who enrolled in this LD classroom within the last two months of the study. He is transient most of the time in that his family moves a lot during the school year. He comes to school only two to three days a week. Cortez’s high absenteeism has negatively impacted his academic performance. Cortez does not like to read because he says, “I be getting stuck on some words.”

1. Do you like to read? Why? If no, why not?

Cortez: Yes, I feel good about it cause I will be able to get a job.

2. Do you think you are a good reader? Why? If no, Why not?

Cortez: No, cause some words I be getting stuck on.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Cortez: My momma...she’ll read me a book then she’ll ask me to read; she do it 2 times a week.

4. How many storybooks do you think there are in your home?

Cortez: Two.

5. Do you go to the library? If yes, how often do you go?

Cortez: No.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Cortez: Yes.

Probe: Do you have a favorite book?

Cortez: No.

7. How do you feel about using Thinking Maps®?

Cortez: Good.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Cortez: b It helped me, cause when I was doing it, I learned how to do it.

Probe: Did you have a favorite map?

Cortez: The Circle Map.

Probe: Why? What do you do with the Circle Map?

Cortez: Write the name of it in the middle, then you got to tell the story.

In an informal assessment, Cortez identified the Circle Map, Bubble Map, and Double–Bubble Map. He did not know how the maps were used. He could not identify any of the other maps.

Marcus. Marcus was functioning at a second grade level. At nine years old, he exhibited limited decoding skills. He was recently placed in the learning disabilities classroom from a second grade general education setting. He was considered extremely low in all areas of reading.

1. Do you like to read? Why? If no, why not?

Marcus: Yes, cause it's fun and you might learn new stuff.

2. Do you think you are a good reader? Why? If no, Why not?

Marcus: Yes, because I can read good.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Marcus: Yes, my daddy. Every time as soon as I get home. I do my homework and read a book. Then I go outside and play.

4. How many storybooks do you think there are in your home?

Marcus: A lot.

5. Do you go to the library? If yes, how often do you go?

Marcus: Yes, I have a library card; I go every Tuesday.

Probe: Do you take books out and take them home?

Marcus: Yes, I take them home and read them.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Marcus: Yes, and my favorite book is *Hip Hop*.

7. How do you feel about using Thinking Maps®?

Marcus: Yes, I like them because they're nice and it's a thing so you will learn.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Marcus: b You can like learn about the story.

Probe: Do you have a favorite map?

Marcus: That one [pointed to the Brace Map on the posted on the wall].

Probe: But you don't know what that map is called?

Marcus: No.

Probe: This is called a Brace Map. Do you know what to do with a Brace Map?

Marcus: You put football here [pointed to single line] then you describe it. You put the numbers, the grass, everything here [pointed to other lines on the right].

Probe: Like the parts of a football.

Marcus: Yes.

Probe: Is grass a part of a football?

Marcus: No.

Probe: So that probably won't work on this line [as the researcher pointed to the single line on the left in the Brace Map]. But if you put it over here [researcher points to the lines on the right] what will go here [pointed to the single line again].

Marcus: Football field then you could put the numbers, football

In an informal assessment, Marcus identified all of the maps except the Bridge Map and Multi-Flow Map. He only knew the thinking process linked to the Bubble Map.

Jimmy. Jimmy was a nine-year old student who enrolled late in the second semester of the school year. He had a raw score of zero in reading comprehension on the Wechsler Individual Achievement Test administered six months prior to the research study.

1. Do you like to read? Why? If no, why not?

Jimmy: Yes, because it helps me to study.

2. Do you think you are a good reader? Why? If no, Why not?

Jimmy: Yes, because you can study all night. Because it is fun.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Jimmy: Yes, my sister; 4 times a week.

4. How many storybooks do you think there are in your home?

Jimmy: Six.

5. Do you go to the library? If yes, ho often do you go?

Jimmy: Yes, four times a week.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Jimmy: Yes.

Probe: Do you have a favorite book?

Jimmy: Yes, the football book.

7. How do you feel about using Thinking Maps®?

Probe: Jimmy you are a new student and you've been here about a month. Since

you've been here, your teacher has been using Thinking Maps®. How do you feel about them?

Jimmy: I like them because you get to learn those maps

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Jimmy: b Helped me; I drew one last week.

Probe: Which one did you draw?

Jimmy: A Bubble Map.

Probe: What do you use a Bubble Map for?

Jimmy: [No comment]

Jimmy could only identify the Bubble Map. He does not know how it should be used.

Douglas. Douglas was a ten-year old who was not fond of reading. He is extremely low in word recognition. Mrs. Smith reported that he was functioning around first grade.

1. Do you like to read? Why? If no, why not?

Douglas: A little bit because when you read it makes you really really tired and then you don't feel like doing nothin' but reading.

2. Do you think you are a good reader? Why? If no, Why not?

Douglas: Yes, because I be reading at home to my mother, to my brother, and to my Auntie.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Douglas: No, I read by myself.

Probe: When you were little, did someone read to you?

Douglas: My momma and my daddy; 1 time a week.

4. How many storybooks do you think there are in your home?

Douglas: The *Open Court* book, the *Missing Tooth*, a lion book...I got a lot of books, 11.

5. Do you go to the library? If yes, how often do you go?

Douglas: Yes, two days.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Douglas: Yes, I like the ones that the teacher reads

Probe: Do you have a favorite book?

Douglas: The big parents and the little boy.

Probe: Are you talking about Hewitt Anderson's Great Big Life?

Douglas: Yes.

7. How do you feel about using Thinking Maps®?

Douglas: I feel great because I like them.

Probe: Do you have a favorite map?

Douglas: The Tree Map.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Douglas: b Helped me because you can read better and stuff and get your education.

In an informal assessment, Douglas identified the Tree Map, Circle Map, Double-Bubble, Flow, and Bubble Map. He only knew the thinking process linked to the Bubble Map.

David. David was a nine year old who enjoyed school. Records indicated he was borderline to low in reading skills and operating at a kindergarten level in reading comprehension.

1. Do you like to read? Why? If no, why not?

David: Yes.

2. Do you think you are a good reader? Why? If no, Why not?

David: Yes, cause I sound out the words.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

David: Mom; 1-2 times a week.

4. How many storybooks do you think there are in your home?

David: Ten books.

5. Do you go to the library? If yes, how often do you go?

David: No, I go to the one from my school.

6. Do you like the picture storybooks that you read or listen to in your classroom?

David: Yes.

Probe: Do you have a favorite book?

David: *Salt in My Shoes.*

7. How do you feel about using Thinking Maps®?

David: I like to do them. Cause it's more fun to learn about; my favorite map is the Double Bubble because it's about contrasting.

8. What do you think Thinking Maps® did for you? (answer a, b, c)
- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

David: b It helped me learn the stories; because you got to learn it.

David identified the Tree Map and Double-Bubble Map along with their corresponding thinking process. He could identify the Brace Map and Bubble Map, but not the thinking process linked to each map. David thought the Bubble Map was for brainstorming and the Circle Map was for putting something in order.

Raymond. Raymond was a seven-year old who functioned at a kindergarten level according to achievement test results. He was transferred to the learning disabilities classroom during the 2008-2009 school year from the Early Childhood Developmentally Delayed classroom. He enjoyed having stories read to him.

1. Do you like to read? Why? If no, why not?

Raymond: Yes, its fun.

2. Do you think you are a good reader? Why? If no, Why not?

Raymond : Yes, because I am smart.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Raymond: Yes, my momma; she reads to me all day; four days.

4. How many storybooks do you think there are in your home?

Raymond: Three storybooks.

5. Do you go to the library? If yes, how often do you go?

Raymond: No.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Raymond: Yes.

Probe: Do you have a favorite book?

Raymond: *The Paperboy*.

7. How do you feel about using Thinking Maps®?

Raymond: Good.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

- a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
- b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Raymond: They helped me [answered before I could give him the choices].

Probe: What did they help you to do?

Raymond: Doing it; helped me with describing.

Probe: [researcher read choices]

Raymond: b Helped me.

Raymond identified the Brace Map, Circle Map, Bubble Map and their corresponding thinking processes. He knew the names of the Double-Bubble, Brace, Multi-Flow, and Bridge Map, but not their corresponding thinking process.

Georgie. Georgie is a seven-year old who suffers from such poor self-esteem that he often breaks down and cries when frustrated with academic tasks related to reading and writing. He functions between a pre-kindergarten and kindergarten level. At six-years old he could not identify any vocabulary words. He comes from a dysfunctional family with a mother who is an alcoholic and has had numerous conflicts with the school over attendance issues. Georgie is a joy to be around. He loves being read to and despite his problems, loves school.

1. Do you like to read? Why? If no, why not?

Georgie: Yes, cause reading is fun.

2. Do you think you are a good reader? Why? If no, Why not?

Georgie: Well...(long pause) I think so, a little bit no and a little bit yes.

3. Does anyone read to you at home? If yes, how frequently does someone at home read to you? (a) 1-2 times per/week (b) 3-4 times a week (c) 4-5 times per/week

Georgie: Yes, my daddy and my mom; my daddy read me a lot a [of] stories; we got stories at home, my momma - she read me stories too; once a year.

Probe: Did your momma read to you last week?

Georgie: Yes.

Probe: What did she read to you last week?

Georgie: At night we ask her can she read to us.

Probe: So Georgie does she read to you 1-2 times a week, 3-4 times a week , 4-5 times per/week on the weekends or once a year.

Georgie: Once a year.

Probe: So you mean in the whole 12 months from this Christmas all the way to next Christmas she reads to you one time?

Georgie: Yes.

Probe: What about your daddy?

Georgie: He reads like three times or four times a week.

4. How many storybooks do you think there are in your home?

Georgie: A whole bunch.

5. Do you go to the library? If yes, how often do you go?

Georgie: Like five times a week.

Probe: Do you have a library card

Georgie: Yes.

6. Do you like the picture storybooks that you read or listen to in your classroom?

Georgie: I like one of them.

Probe: Which one?

Georgie: Named a comic book.

Probe: When I brought in the storybooks for your teacher to read, did you like any of those stories?

Georgie: Yes, *Wind Flyers* and *Up the Learning Tree*.

7. How do you feel about using Thinking Maps®?

Georgie: Happy because we can learn from them and we can learn from any kind of map.

Probe: Did you have a favorite Thinking Map®?

Georgie: Brace Map (pointing to it...did not know the name) because you can write on the lines and you can learn from them.

8. What do you think Thinking Maps® did for you? (answer a, b, c)

a. Thinking Maps® did not help me to understand the stories.

Why do you say so? _____

b. Thinking Maps® helped me to understand the stories.

- Why do you say so?
- c. Using Thinking Maps® made no difference to me understanding the story.
Why do you say so? _____

Georgie: b It helped me...Thinking Maps® help me all the time.

Georgie could identify the Circle Map, Brace Map, Double-Bubble Map, Flow Map, Tree Map, and Bridge Map. He did not know the Bubble Map or Multi-Flow Maps. He understood the thinking process for the Double-Bubble Map and Flow Map only. He thought the Circle Map was for describing and did not know the thinking process linked to the Tree Map.

Sam and Tony were absent on the day of the exit interviews and neither student returned for a make-up interview before the end of the school year. Eleven-year old Sam missed 24 days of school during the 2008-2009 school year due to illness. Mrs. Smith noted that as an eleven-year old, Sam was functioning extremely low in reading comprehension. Tony was a nine-year old and according to Mrs. Smith exhibited autistic like tendencies. She reported that he functioned below a kindergarten level in all academic areas. Oftentimes his responses did not always correspond with the questions or discussion.

In summary, with respect to the learning disabled boys' perception of reading and exposure to books (Table 22), all said they liked to read. Only one said he liked to read "some of the time." It was interesting to note that although none of the learning disabled males read on grade level, seven of the eight boys perceived themselves as good readers; Cortez was the exception. Even Georgie said, "a little no, and a little bit yes." All gave a positive response when asked if they liked to read. Douglas said "a little bit" which

Table 22

Learning Disabled Boys' Perception of Reading and Exposure to Books

Participant	Likes to Read	Perceives self as a good reader	Frequency of being read to at home per/week	Number of Storybooks in the home	Go to the Library
Bobby	Yes	Yes	2	5	Yes
Cortez	Yes	No	2	2	No
Marcus	Yes	Yes	As soon as I get home	A lot	Yes
Jimmy	Yes	Yes	4	6	Yes
Douglas	A little bit	Yes	1	11	Yes
David	Yes	Yes	1-2	10	No
Raymond	Yes	Yes	4	3	No
Georgie	Yes	A little bit no and a little bit yes	3-4	A whole bunch	Yes

means he had not ruled it out completely. Nearly half of the boys interviewed did not go to the library. The frequency of boys read to at home was low. It ranged from one to four times per/week with only one boy who reported that someone read to him daily after school. According to the boys, the number of storybooks in the home ranged from three to 11; two could not quantify the number of storybooks available for home reading. One said he had “a whole bunch” [of books], and another said “a lot.”

Fieldnotes from the Classroom for the Learning Disabled

Mrs. Smith acknowledged that her use and experience with Thinking Maps® was limited because she did not attend the full day’s training. However, she looked at the researcher’s study as an opportunity to learn and grow. At the front of the classroom, there was eight commercially made large laminated Thinking Map® posters taped to a corner of the chalkboard, but there was no evidence of student work. Mrs. Smith’s classroom was smaller than most; approximately three-fourths the size of a regular classroom. This classroom had two teacher’s desks, one for the special education aide and one for the teacher. It had approximately five old computers and one new one primarily used by Mrs. Smith. Only one computer had internet access. There was a very large file cabinet with two doors, and three small tables and one large table. There did not appear to be any defined literacy learning centers set up in the classroom. Thinking Maps® were posted on her bulletin board, yet children were not accustomed to using the maps with great frequency. While both Mrs. Rosenberg and Mrs. Jones had a learning center for reading complete with books and a rug, the LD teacher had only desks and

tables with some books in the corner. She mentioned that at one time, she did have a rug for her students, but it had worn out.

During the beginning weeks of the study, a wealth of information was offered with researcher developed demonstration lessons. Multiple copies of pre-drawn maps from the company were provided to the teacher by the researcher weekly to eliminate the stress of drawing the maps particularly for students who had difficulty with eye-hand coordination. The researcher also developed and posted large charts for students to reference when developing their maps. Thinking Map examples were shared with Mrs. Smith from the other two classrooms to give her some idea of how to develop them in correlation to literature. Stories were read by the teacher and researcher from *Open Court Reading* and African American children's storybooks provided by the researcher. Thinking Maps® were drawn on the chalkboard or on large chart paper to guide students to use their pre-made format sheets to develop their individual maps. Three to four African American children's literature books were always left for Mrs. Smith as read alouds each week in hopes that students would use the maps to increase understanding and recall of the stories.

In an effort to create an atmosphere to motivate listening and responding to read alouds, the researcher bought 16 plush carpet samples in different colors from the local store. Students were elated to have something to sit on during story time instead of sitting upright at their desks. A few weeks passed before they were put into use because Mrs. Smith had to include additional children into her class while another special education teacher who was absent. Usually when this occurred the student body in Mrs. Smith's

classroom increased in size by at least five additional pupils. She did not want the other students not to have a mat to sit on, so she waited until the teacher returned from sick leave to use the carpet mats.

Within the first month of the study, Mrs. Smith expressed her apprehension that her students would not be able to meet the expectations of the researcher. There were countless interruptions that prevented her from reading the stories and completing the maps on a consistent basis. She said students were in tears because they could not complete a mandated state test and could not read. There were assemblies, record keeping, substituting, testing, and other situations beyond her control that prevented her from doing Thinking Maps® daily. The researcher implored her to continue to fit them in as often as possible. She was reminded that data must be collected and written up as the proposal dictated or it would affect the validity of the study. The researcher told her that if she is doing reading daily, then a Thinking Map® could be done with the reading assignment whether it was from *Open Court Reading* or a storybook. For example, a Tree Map could be used with most all stories because it would allow students to break apart the story into elements (i.e. setting, characters, events, and problem). A Flow Map could be used to do something as simple as indicate what happened first, next and last. The researcher asked Mrs. Smith to do this with every story to provide practice.

On one visitation after reading a story, students were guided as they developed a Bubble Map. Georgie put his head down in frustration and began crying because he just did not understand the concept. Mrs. Smith expressed her concern again about the boys not completing the maps as accurate as possible. The researcher explained to Mrs. Smith

that students can always illustrate instead of writing within their maps. Further, the concern was more about their thinking and gaining an understanding of the process that is associated with each map.

The researcher demonstrated the use of a Brace Map by asking students to look at two objects, a remote control to a television and a lion puppet, then name each of their component parts and subparts. Responses elicited from the boys were immediately written on the chalkboard. For the remote control, boys stated the buttons, batteries, letters, and numbers. Upon examining the lion puppet the boys named the puppet's eyes, tails, ears, and mane. As Mrs. Smith looked on, the researcher read the story, *Doo-Wop Pop*, (Schotter & Collier, 2008). This story has been described earlier in this document, yet as a reminder here, the story takes place in a school. The researcher constructed the Brace Map on the chalkboard with the word "school" on the first line as the whole part. Boys named the parts of the school setting in the story (i.e. cafeteria, classroom, auditorium, etc.). After which they named subparts of the auditorium (i.e. seats, stage, curtain, etc.) and subparts of the classroom (desks, chalkboard, books, etc.). They seemed to understand the thinking process of whole to part as we moved to pencil and paper. Then a parent showed up unexpectedly to meet with Mrs. Smith, so the lesson was over. I left copies of blank brace maps for the boys and girls to use for practice; however, I did not see any subsequent work on that story on future visits to her classroom.

Mrs. Smith taught them that the maps were flexible. Cortez created a Bubble Map on "feelings" and added four more circles or bubbles beyond what was pre-printed on the sheet (Figure S19). He also created a Bubble Map on "things that go" which

corresponded to the first grade thematic *Open Court Reading* Unit on *Things that Go* (Figure S20). Again he made more than the six allotted circles filling them in with the appropriate words that describe vehicles that go. With guidance, David created a Tree Map (Figure S21) classifying details from the story *Barack* (2008). Mrs. Smith created a bulletin board to assist students with the thinking process on the maps she most frequently used (Figure S22). She reported that she had at least four that understood how to do some of the maps while the others struggled. The researcher is convinced that with more time and practice the students would become more comfortable with the process.

Elementary Reading Attitude Survey

The Elementary Attitude Reading Attitude Survey (ERAS) (Appendix O) was administered in February during the first week of the study to 27 male students: ten second graders; nine fourth graders; and eight learning disabilities students. At the end of the study in June, 22 of the males: nine second graders; six fourth graders; and seven learning disabilities students were present for readministration. Results are revealed in Appendix P. Question one through ten queried students about their attitudes toward recreational reading Table P1. Eleven through 20 sought answers about their feelings towards academic reading Table P2. The results of the ERAS are presented for the second, fourth, and learning disability classroom for February and June.

Second Grade Boys ERAS Results

Results from February through June revealed that over half (six) of the ten second grade boys felt more positive about academic reading than recreational reading. Most did not mind getting a book for a present, liked to read in school, and would like

going to a bookstore. According the ERAS (Appendix P), they had positive feelings about reading to learn in school and reading as a recreational activity. They liked the stories from their core basal reading series and did not mind taking a reading test. The second grade boys do not like reading aloud in class. Most of them liked reading for fun at home and during summer vacation. For example, Lloyd, an eight year old, selected the happiest Garfield for all of the questions on the survey. His positive attitude towards academic and recreational reading was reflected in his exuberance about using Thinking Maps® and engagement with the picture storybooks provided by the researcher.

Timothy, who provides another example, scored in the lowest percentile for both recreational and academic reading. He stated in his exit interview that no one read to him at home and he did not remember being read to at all during his early childhood. Timothy's father was incarcerated and his mother is deceased. When asked how many storybooks he felt that he had at home his response was "one." Additionally, he stated that he does not have a library card and has never borrowed a book. These were significant contributors to Timothy's lack of interest in reading. Juan also scored among the lowest in the class on the ERAS. The fact that English is his second language may have impacted his attitude. He indicated in his exit interview that he did not like to read and he did not like Thinking Maps®. Conversely, Timothy liked all of the Thinking Maps® and felt that Thinking Maps® made him smarter. The second graders had a change of attitude by the end of the school year. The majority were mildly upset with doing workbook pages, but were happy about reading in school and learning from a book.

Jason and Paul did not take the survey because they were not in attendance during the final weeks of school when the post attitude survey was administered.

Fourth Grade Boys ERAS Results

Each of the six fourth grade boys surveyed in June favored recreational reading more than they did in February (Appendix P). Joey, Johnny, and Ryan revealed the most positive change in their attitudes toward both academic and recreational reading. All of the boys favored learning from a book during the pre and post survey. The survey results in February indicated that most of the boys liked receiving a book for a present. However, four of the six surveyed in June circled the mildly and very upset *Garfield* figures when asked the same question. The February and June survey results indicated that fourth grade boys liked reading a book during free time, but preferred playing as compared to reading. They were not as enthusiastic about the stories in their core basal reading program, but were positive towards reading in class. Justin, Jake, and Mike were not in attendance on the day of the post attitude survey.

Learning Disabled Boys ERAS Results

ERAS results on the pre-survey in February revealed that boys in the LD classroom had positive attitudes towards reading both academically and for recreational purposes (Appendix P). Despite their teacher's reported standardized test results that all of the boys functioned below their age and grade level in basic reading as well as reading comprehension, most considered reading a worthwhile activity. They liked going to a bookstore, spending free time reading a book, and reading for fun. Post survey results

indicated a better attitude towards academic reading. Douglas showed the most positive change in attitude towards academic and recreational reading. Jimmy did not enroll into the LD classroom until May and Cortez was consistently absent; therefore, neither were tested. Sam and Tony did not come to school the last two weeks of school during the time period of the post attitude survey.

Summary of Elementary Reading Attitude Survey

Boys in the second, fourth, and LD classrooms were administered a pre and post Elementary Reading Attitude Survey at the beginning of the study in February and at the conclusion of the study in June. Most second grade and LD males revealed an overall positive attitude towards recreational and academic reading. Post-survey results revealed a change in attitude of the fourth grade males. They were not as enthusiastic about reading in class, but maintained a positive attitude towards recreational reading.

Exit Interview Revelations about Reading Attitudes

Beyond the ERAS, further information about the boys' attitudes toward reading resulted from the Exit Interviews. Eight exit interview questions (Appendix N) were posed to 27 of the 30 males who participated in the study at the end of the school year. Boys responded to questions about their attitudes towards reading, exposure to books, and feelings about the usefulness of Thinking Maps®. The Exit Interviews revealed that most of the boys liked to read and enjoyed creating Thinking Maps®.

Twenty-one of the 27 boys representing the second, fourth, and LD classrooms found reading to be fun. Eight equated it directly with learning. For example, Ryan, a fourth grader, believed reading helped his brain when he said, "it helps your mind get

bigger; ...and smarter for 5th grade, for 6th grade, and all the other grades, and go to college.” Cortez, an LD student, felt reading would help him “get a job.” Only five of the boys said they did not like to read for various reasons including boredom. Carl, a fourth grader said he only liked to read “a little bit” because he “did not know how to read like that.” There were more fourth grade boys (four) who did not like to read than those in the second grade (zero) and LD (one) classrooms. Some of the fourth graders interviewed did not like reading because they found it to be boring. When the boys were asked if they felt they were good readers and why, 22 said, “Yes.” It is interesting to note that of the 22, ten equated good reading with the ability to decode words. They responded either *yes* they were good readers because they can sound out words or *no* because they could not (Table 23). Second graders, Juan and Jerome said they were not good readers, but did not state directly that it was because they had difficulty sounding out words. Juan said he could not “read that good” and Jerome said he “always messed up on reading,” which could mean that they had difficulty decoding.

Influence of Thinking Maps® on Male Participants

Exit Interview questions seven and eight specifically queried the boys about the use of Thinking Maps®. Of the 27 boys interviewed, 21 viewed Thinking Maps® as a fun way of learning. Constructing them produced positive happy feelings. When asked how it felt to use Thinking Maps® the boys responded favorably (Table 24). Some of the boys determined that Thinking Maps® helped them to learn. They associated Thinking Maps® with learning and getting smarter (Table 25).

Table 23

Sample Statements from Second, Fourth and LD Males about Reading and Decoding

Grade	Student	Comment(s) on Reading Abilities
2	Lloyd	I like to sound words out that are too hard for me.
2	Martin	If you don't know how to read, you can't read the words.
2	Jerome	I always mess up on reading.
4	Joey	I think I'm a good reader because I read more than a 100 words.
4	Peter	Sometimes, I can read good, and sometimes I be messing up on my words.
4	Justin	I don't ever mess up on words and I study them all the time.
4	Jake	I have a nice voice and I know how to pronounce them (words) right and don't stutter.
4	Ryan	I am a good reader because I can pronounce the words by myself.
LD	Cortez	No, because I be getting stuck on the words.
LD	David	Yes, cause I can sound out words.

Table 24

Second, Fourth Grade, and LD Males: Thinking Maps® Generate Positive Feelings

Grade	Student Name	Feelings about Thinking Maps®
2	Jason	Good, because they are fun to do.
2	Martin	Happy
2	Charles	Fun
2	Parker	Good because it's fun.
2	Jerome	I think it's fun.
2	Billy	I like them.
2	Timothy	Great, because it makes you smarter.
2	Freddy	Good or great.
2	Lloyd	Good, because they are fun to do.
4	Justin	I'm glad someone invented Thinking Maps®.
4	Joey	I feel great.
4	Carl	Very good.
4	Johnny	I like how we are doing colorful Thinking Maps®.
4	Ryan	I feel good about it because if you don't pull out a Thinking Map® and then you have all these ideas in your brain and they won't be able to get let out.
4	Tommy	I like using Thinking Maps®.
4	Jake	I like doing Thinking Maps®.
LD	David	I like to do them.
LD	Georgie	Happy
LD	Jimmy	I like them.
LD	Cortez	Good
LD	Bobby	Good

Table 25

Second, Fourth Grade, and LD Males: Thinking Maps® Facilitate Learning

Grade	Student Name	Comment(s) about Thinking Maps®
LD	Marcus	They're nice and it's a thing so you will learn.
LD	Georgie	We can learn from them and we can learn from any kind of map.
LD	Jimmy	I like them because you get to learn from those maps.
LD	Douglas	... you can read better and stuff and get your education.
2	Freddy	You can get information and ideas; helps me learn.
2	Timothy	Great, because it makes you smarter.
4	Jake	It helped me so I can remember it. It is like a note.
4	Johnny	I get from them a lot because it's a lot easier than having to think it from my head. I don't have to memorize it. It's better than nothing. That's what helps me out because then I don't have to memorize it anymore.
4	Justin	The Tree Map...gives you more information than you know.

The use of Thinking Maps® with quality literature and *Open Court Reading* yielded important information about strategies to promote comprehension of stories and motivation to read in urban elementary school males (Table 26). Eight of the 27 boys interviewed commented on how Thinking Maps® helped them to understand stories. Oftentimes a Thinking Map® was constructed to access prior knowledge before a read aloud. Most often the boys constructed Thinking Maps® after the teacher read from a picture storybook or conducted a lesson from *Open Court Reading*. More boys in the second grade, fourth grade, and LD classrooms chose the Bubble Map (6) used for describing and the Double-Bubble Map (6) utilized for comparing and contrasting, as their favorite Thinking Map®. Many of the boys demonstrated by their verbal responses and awareness of the thinking process associated with the maps (Table 27). Six of the twenty-five boys who had a favorite Thinking Map® were not able to articulate the associated thinking process. However, they could demonstrate how to use the map through illustrations and guided practice. Timothy said that he could not choose just one of the maps as his favorite because he liked all of them. Juan did not like any of the maps. None of the boys selected the Multi-Flow Map as their favorite. One of the boys in the Learning Disabilities classroom said he did not “do that one” as he pointed to the Multi-Flow Map.

The boys favored the maps that their teachers used most frequently. When Mrs. Jones, the second grade teacher began using the Brace Map more frequently, Jason created a Brace Map (Figure S24) breaking apart the setting in a story called Bippity Bop Barbershop (Tarpley, 2002). Mrs. Jones and fourth grade teacher Mrs. Rosenberg

Table 26

Second, Fourth, and LD Males: Thinking Maps® Help with Understanding Stories

Grade	Student Name	Comment(s)
2	Parker	You get to know more things in a story
2	Timothy	Great because it makes you smarter; Thinking Maps® you can figure out more information from the books than from your teacher and it's good to read books, so you can learn;
2	Lloyd	I can understand what the story is telling me from the beginning; I can compare things to other things
2	Martin	I like the Flow Map too cause you use it in order.
4	Joey	Thinking Maps® helped me to understand the stories like <i>I Told You I Can Play</i> ; when somebody reads that, you probably won't get a great understanding, but when you do Thinking Maps® everyday you can understand it better.
4	Tommy	It just helps me...I can understand what's going on in the story and give good details when my teacher asks me; it helps me to understand what happens first and last
4	Justin	They helped me more to think about all the stories, it helped me to understand more; I know it helped me understand the stories because my teacher read it to us and then we all learned and she told us to do it by ourselves then we correct ourselves

Table 27

Verbal Understanding of Boys' Favorite Thinking Map® and Linked Thinking Process

Male Student Participant	Favorite Thinking Map®	Verbal evidence of understanding linked thinking process
Cortez (LD)	Circle	Write the name in the middle, then you got to tell the story
Jake (4)	Circle	Had a big old circle...we put the doctor who worked at a hospital...wrote all the ideas about what they do
Jimmy (LD)	Bubble	No verbal evidence of understanding
Jason (2 nd)	Bubble	You can do anything with them.
Billy (2 nd)	Bubble	You put things in there... I forgot
Joey (4 th)	Bubble	It's used to describe a person
Mike (4 th)	Bubble	Use it to tell a person's personality
Raymond (LD)	Bubble	Helped me with describing
David (LD)	Double-Bubble	It's about contrasting.
Bobby(LD)	Double-Bubble	You can talk about one person and another person and you can talk about both of them.
Lloyd (2 nd)	Double-Bubble	Compare things to other things
Martin (2 nd)	Double-Bubble	Compare
Peter (4 th)	Double-Bubble	No verbal evidence of understanding
Carl (4 th)	Double-Bubble	No verbal evidence of understanding
Johnny (4 th)	Tree	So I can give a lot of details under each
Douglas (LD)	Tree	No verbal evidence of understanding
Justin (4 th)	Tree	Gives you more information than you know
Georgie (LD)	Brace	No verbal evidence of understanding
Marcus (LD)	Brace	You put the football field here (on line); then you put the numbers, the grass, and everything here (other lines)
Freddy (2 nd)	Brace	You break it down.
Charles (2 nd)	Flow	You put things in order.
Parker (2 nd)	Flow	No verbal evidence of understanding
Tommy (4 th)	Flow	Tell what happened first, next, and last
Ryan (4 th)	Flow	It helps me put it all in order from 1 to 10.
Jerome (2 nd)	Bridge	Bike is to cycle as skate is to board.

attempted to expose the students to a variety of maps throughout the school year in order to help students think about and comprehend reading selections. Mrs. Smith, the LD teacher, focused on student understanding of the Circle Map, Bubble Map and Double-Bubble Map.

In question eight, boys were asked whether Thinking Maps® helped them to understand the stories better. Of the 27 boys who were interviewed at the end of the study, 25 of the boys responded *yes*. Carl from the fourth grade said, “No.”, but stated that the Double-Bubble was his favorite map. Juan, a second grader, indicated that he did not find them helpful. However, in an informal assessment of his knowledge of the maps conducted and recorded by the researcher, he was able to recall the names of each map. Juan demonstrated an understanding of the Bridge Map (linked to analogous relationships) when the researcher pointed to the map. He also understood that the Tree Map is used for gathering details, and that the Double-Bubble Map is linked to comparing and contrasting as indicated in the following exchange.

Probe: What map is used to make analogies...like *up* is to *down* as *in* is to *out*?

Juan: (no response)

Probe: So if I said green is to grass...what would you say?

Juan: As *red* is to *fire engine*?

Probe: Yes! What is the map used for details?

Juan: Tree Map?

Probe: Yes! For the Double-Bubble, what goes in the outside circles?

Juan: Something that is not alike.

Probe: (Nodding affirmatively) What goes down the middle of a double bubble?

Juan: Something that is alike.

This exchange between Juan and the researcher demonstrated that he had an understanding of how to use some of the Thinking Maps® even though he did not find them helpful in understanding stories. After listening to the story *Ron's Big Mission*

(Blue & Naden, 2009) on the life of Ron McNair, Juan completed a Double-Bubble map comparing and contrasting Ron McNair and Rosa Parks (Figure S25). When asked about their favorite maps and how they are used, Tommy said he liked the Flow Map.

The exit interviews indicated that the boys liked the maps for a variety of reasons. A fourth grader said he liked them because he can use it to help him with writing. The maps helped many of the boys with putting things in order whether events in a story or a life cycle in a science project. Overall, their expressed attitudes described how they enjoyed creating Thinking Maps® and that they found them helpful in comprehending stories.

Gift Book Choices of Second, Fourth, and LD Boys

One of the surprising elements that came out of this study was the boys' knowledge and recollection of their favorite read-aloud provided by the researcher. Many boys were able to name their favorite book, recall the plot, and tell why they liked it even though the book may have been read weeks ago. Each of the 40 books (Appendix L) selected for read alouds contained male characters that projected a positive image. Books appropriate for second and third graders are listed in Table L1. Book titles appropriate for third and fourth graders are listed in Table L2. The age range in the learning disabilities classroom spanned from seven through 11 years old; therefore, read alouds for this population came from both booklists.

At the end of the study, boys and girls from each classroom were allowed to select one from the 40 books (Appendix L) approved by the school district to take home. The new hardcover African American children's storybooks were purchased with grant

money awarded to the researcher. Students made a first and second choice to assure that at least one was available from the bookstore. The favorite storybook named by each boy during the exit interview was not always the book selected as the gift book to take home at the end of the study. Perhaps it was because on book selection day, each book was placed on display either on the chalk ledge and/or on the floor. This gave students the opportunity to browse through them again to determine the book they wanted the researcher to purchase. In (Table 28), the boys revealed the titles of their favorite books exactly as they remembered them. The most popular book was *Hip Hop Speaks to Children* (Giovanni, 2008), a book of poems accompanied by a CD with various jazz, blues, and hip-hop rhythms that made students clap and stomp to the beat.

The boys selected *By My Brother's Side* (Barber & Barber, 2008) and *Salt in his Shoes* (Jordan & Jordan, 2000) more than any other book to take home. Both books are about males playing a sport. *By My Brother's Side* is about twins, Ronde and Tiki Barber, former NFL players, and the special bond they share. Joey constructed a Double-Bubble Map comparing Ronde and Tiki Barber (Figure S 26). Michael Jordan's mother and sister paired to write a book, *Salt in His Shoes* (Jordan & Jordan, 2000) about son Michael Jordan detailing his problems as a short little kid trying to keep up with the big boys on the basketball court in the neighborhood.

Juan was not enthusiastic about reading and could not recall the exact title of his favorite book, *Dad, Jackie, and Me*, (Ulberg, 2008), but he knew it was the one he liked the best. This story was about author Myron Ulberg's experiences growing up as a

Table 28

Favorite book(s) revealed in the Boys' Exit Interviews

Grade 2	Book Title	Grade 4	Book Title	Learning Disabled	Book Title
Jason	<i>Bibbity Bop Barbershop</i>	Joey	<i>Hip Hop Speaks to Children</i>	Bobby	<i>Big Jabe</i>
Lloyd	<i>Big Jabe and Salt in his Shoes</i>	Peter	<i>Hip Hop Speaks to Children; Jackie, Dad, and Me; Coming On Home Soon</i>	Cortez	No favorite book
Martin	<i>Dizzy and Hewitt Anderson's Great Big Life</i>	Mike	<i>Hip Hop Speaks to Children</i>	Sam	Not interviewed
Charles	<i>Barack</i>	Tommy	<i>Hewitt Anderson's Great Big Life</i>	Marcus	<i>Hip Hop Speaks to Children</i>
Parker	<i>Doo Wop Pop</i>	Carl	<i>Hip Hop Speaks to Children</i>	Tony	Not interviewed
Billy	<i>So Much</i>	Justin	<i>Brothers in Hope... and Hip Hop Speaks to Children</i>	Jimmy	Yes – the football book
Timothy	<i>Henry's Freedom Box</i>	Jake	<i>Because You're Lucky</i>	Douglas	<i>Hewitt Anderson's Great Big Life</i>
Jerome	<i>Max Found Two Sticks</i>	Johnny	<i>Ron's Big Mission</i>	Raymond	<i>The Paperboy</i>
Freddy	<i>So Much and Ron's Big Mission</i>	Ryan	<i>Max Found Two Sticks</i>	Georgie	<i>Wind Flyers and Up the Learning Tree</i>
Juan	Me, My Dad, and Something			David	<i>Salt in My Shoes</i>
Paul	<i>Henry's Freedom Box</i>				

hearing child of deaf parents. The dad in the story was an avid baseball fan and enjoyed the game vicariously through his son. Set in the 1940s, he was very interested in the addition of Jackie Robinson to the Brooklyn Dodgers. The book detailed the racism Robinson experienced and story of a boy's love for his father.

Even though Mrs. Rosenberg, the fourth grade teacher, read *Doo Wop Pop*, (Schotter, 2008), to her class five times, none of the fourth grade boys selected that book to take home. Joey generated a Multi-Flow Map after listening to this story (Figure S27). The books that were selected by each male participant for purchase are listed in Table 29.

Teachers were provided an opportunity to order 14 books each, once again from money awarded to the researcher to restock their classroom libraries (Table 30). Of the books that teachers selected, *Henry's Freedom Box* (Levine, 2007) *Barack Obama: Man of Promise, Son of Hope* (Grimes, 2008), and *Hip Hop Speaks to Children* (Giovanni, 2008) were most often chosen for their classrooms. April was National Poetry Month so reading *Hip Hop Speaks to Children* (Giovanni, 2008) and *Thanks a Million* (Grimes, 2006) were two books of poetry that were shared with the teachers to commemorate the occasion. *Thanks a Million* (Grimes, 2006) was a book of 16 poems about being thankful for everyday things. Mrs. Rosenberg yielded the *Hip Hop* book to the learning disabilities teacher, Mrs. Smith, because she felt it would increase the students' motivation to read since it was set to a rhythmic beat. She said she could get the book later in the month. Mrs. Smith told the researcher of how much her students enjoyed listening to the book of poems and rocking to the beat. Some students sat as close as they could to the CD player in order to hear and chant the poetry in rhythm.

Table 29

Final Gift Books to Boys

TOTAL	Book Title	Jones 2 nd	Rosenberg 4 th	Smith LD
1	<i>Because You're Lucky</i>		Jake	
3	<i>By My Brother's Side</i>	Timothy	Tommy	Bobby
1	<i>Dizzy</i>			Tony
1	<i>Doo Wop Pop</i>			Marcus
2	<i>Henry's Freedom Box</i>	Paul		Cortez
1	<i>Hewitt Anderson's Great Big Life</i>		Johnny	
1	<i>I Told You I Could Play</i>			David
2	<i>Max Found Two Sticks</i>	Jerome	Ryan	
3	<i>Salt in His Shoes</i>	Lloyd Parker		Douglas
2	<i>The Friendly Four</i>		Carl Mike	
1	<i>The Paperboy</i>			Raymond
1	<i>Barack</i>	Charles		
1	<i>Barack Obama: Man of Hope, Son of Promise</i>			Sam
1	<i>Brothers in Hope: The Story of the Lost Boys of Sudan</i>		Justin	
2	<i>Dad, Jackie, and Me</i>	Juan	Peter	
1	<i>Hip Hop Speaks to Children</i>		Matthew	
1	<i>Let Them Play</i>	Jason		
1	<i>Ron's Big Mission</i>	Freddy		
2	<i>So Much</i>	Billy		Jimmy
1	<i>Up the Learning Tree</i>			Georgie
1	<i>Wind Flyers</i>	Martin		

Table 30

Teachers' Final Book Selections for Classroom Library

Book Title	Jones	Rosenberg	Smith
<i>Barack Obama: Man of Hope, Son of Promise</i>	X	X	X
<i>Because You're Lucky</i>	X		
<i>Big Jabe</i>		X	X
<i>Bippity Bop Barbershop</i>			X
<i>Black Cowboy Wild Horses A True Story</i>	X	X	
<i>Brothers in Hope: The Story of the Lost Boys of Sudan</i>		X	X
<i>Dear Mr. Rosenwald</i>	X	X	
<i>Did I Tell You I Love You Today</i>			X
<i>Dizzy</i>	X		
<i>Doo Wop Pop</i>			X
<i>Freedom Ship</i>			X
<i>Freedom Summer</i>			X
<i>Grandma Says Our Hair has Flair</i>	X		
<i>Grandpa's Face</i>		X	
<i>Henry's Freedom Box</i>	X	X	X
<i>Hip Hop Speaks to Children</i>	X	X	X
<i>How We are Smart</i>	X		X
<i>In My Momma's Kitchen</i>	X		
<i>Me and Uncle Romie</i>		X	
<i>More Than Anything Else</i>	X		X
<i>One Hen</i>		X	
<i>Ron's Big Mission</i>		X	
<i>Salt in His Shoes</i>	X		X
<i>So Much</i>	X		
<i>Thanks a Million</i>		X	X
<i>The Friendly Four</i>		X	
<i>The Gospel Cinderella</i>	X		
<i>Up the Learning Tree</i>		X	

Summary of Chapter Five

The extensive qualitative data presented throughout this chapter provided descriptive classroom-by-classroom information for the Second Grade, Fourth Grade, and the Learning Disabilities classrooms. That information was collected from the interviews of the three teachers; the exit interviews of 27 of the 30 boys who were the focus of this study; the researcher's reflections; recollections and documentation of classroom activities that were captured via both fieldnotes and digital recording; and the ERAS administered to the male participants at the onset and the conclusion of the study. Presentation of data in this chapter details some of the underlying complexities that inform the answers to the qualitative research questions about the influence of Thinking Maps® on the comprehension and attitudes toward reading of urban males in three elementary school classrooms: two general education and one learning disabilities.

Each of the three teacher participants were trained by in-house district trainers and used Thinking Maps® across the academic content areas. Each teacher found Thinking Maps® to be an effective common visual language within their classroom that helped to develop critical thinking skills. They believed that Thinking Maps® assisted students with recalling of details and gaining a deeper meaning from literature. Each teacher found the maps to be more helpful than graphic organizers.

The maps that the teachers most often observed their students constructing were the Bubble and the Double-Bubble Map. The second grade teacher, Mrs. Jones, found the Double-Bubble Map more effective because her students loved to say the name and color code. The fourth grade teacher, Mrs. Rosenberg, found the Flow Map more effective

because it helped her students understand stories better, but she used the Tree Map more frequently to help students retrieve details. However, Mrs. Jones used the Circle Map more because as she introduced new concepts it helped her students to access prior knowledge. Mrs. Jones used the maps as an assessment tool to differentiate the process of evaluating diverse learners.

The learning disabilities teacher, Mrs. Smith, found that utilizing the simpler maps as the Circle Map and Bubble Map were most effective. She did not attend any further training on Thinking Maps® nor did she complete the entire Day One training; however, she believed that using this visual tool was beneficial for student learning. There was infrequent use of Thinking Maps® prior to the study. However, as a result of exposure during the study, the boys recalled the names of the maps and understood the purpose of using some of the maps, particularly the Bubble Map. Additionally, each male student participant reported that Thinking Maps® made a difference in their understanding of stories.

Thinking Maps® had a positive effect on the attitudes of the boys overall. Eleven boys in a second grade classroom, nine fourth grade boys, and ten boys identified as learning disabled, were observed over a fourteen-week period. According to their teachers, boys' attitudes towards reading particularly in the second and fourth grade classrooms have changed dramatically since the beginning of the school year. The fourth grade teacher attributed a part of the change to the exposure to the children's literature they are listening to each week and the use of Thinking Maps®. Data analysis

determined that Thinking Maps® generated overall positive feelings in boys and promoted an understanding of written text.

This chapter has presented the results of the data collected for the qualitative portion of this study. It examined how Thinking Maps® influenced comprehension and attitudes towards reading with males in three classrooms within two elementary schools in a large Midwestern urban district. Eleven boys in a second grade classroom nine fourth grade boys, and ten boys identified as learning disabled, were observed over a fourteen week period. Data analysis determined that Thinking Maps® generated overall positive feelings in boys and promoted an understanding of written text. When the maps were used with the core basal program and literature read alouds, they assisted students with character analysis, sequencing, comparing and contrasting, and classifying. Thinking Maps® helped the boys by promoting recall and understanding of stories. More importantly, the boys gained a greater appreciation of literature by listening to authentic quality read alouds that depict the lives of positive male images in text and illustration.

CHAPTER SIX

CONCLUDING DISCUSSION OF THE RESULTS

This mixed research design study examined how teachers in a large urban Midwestern district used Thinking Maps® with students in elementary school general education and special education classrooms. Teachers' perceptions of Thinking Maps® relative to their impact on comprehension and attitudes towards reading were analyzed. In addition, this study examined the use of Thinking Maps® with boys in three elementary classrooms: one second grade, one fourth grade, and one classroom for the learning disabled with a focus on students' comprehension and attitudes toward reading with respect to the district's core reading program and literature read-alouds.

This inquiry was conducted over fourteen-weeks. Observations focused on multiple pieces of data that were gathered and analyzed to understand how Thinking Maps® were used to influence the acquisition of meaning from text. The multiple data sources included: a ten question multiple choice survey of teachers trained in the use of Thinking Maps®, interviews of three elementary classroom teachers and their male students, verbatim transcriptions of three audiotapes and 116 hours of digitally recorded classroom instructional interactions, the researcher's observational fieldnotes, the Elementary Reading Attitude Survey, and Thinking Maps® generated by the male students and teacher participants in the study. The use of Thinking Maps® yielded important information about strategies to promote reading comprehension and motivating elementary school males to read and write. This chapter presents conclusions to analyses

of the quantitative and qualitative data presented in Chapters Four and Five, followed by sample profiles of three boys as representative of the children as they received literature books as gifts. Further, this chapter discusses the limitations of this study, specifies implications for reading instruction in the field of education for elementary school boys and offers suggestions for future research.

Conclusions

Spider Maps, Fishbone Maps, Network Tree, Sequential Episodic Maps, Cycle Maps, Comparative and Contrastive Maps; are all names of graphic organizers used in classrooms today. Remembering the names of these maps and how to utilize them can be mind boggling. Recalling eight maps and their associated thinking process is much more manageable than hundreds of mapping designs. Thinking Maps® are student centered highly flexible forms that provide a consistent visual language. One of the most important revelations from this study is that male students and teachers enjoy utilizing Thinking Maps® because they influence comprehension skills, create positive attitudes towards reading, assist students with writing, and are fun to use.

The results of the data analysis revealed that male students and teachers use Thinking Maps® as a method to influence comprehension. The study demonstrated ways in which Thinking Maps® were used within the context of a classroom setting during read alouds and lessons from the core basal reading program. Several important overarching conclusions can be drawn from this study. First, Thinking Maps® are beneficial for accessing and activating prior knowledge. Second, boys display positive attitudes towards reading when using Thinking Maps®. Third, significant comprehension

skills are facilitated by the use of Thinking Maps®. Fourth, teachers have positive perceptions of Thinking Maps® following district training. Fifth, elementary age boys enjoy listening to read alouds and want to own children's literature books.

Discussion and Conclusions Regarding Research Question One

The quantitative portion of the study addressed Research Question One: "What are teachers' perceptions of Thinking Maps® following district training? Conclusions were based on the results of a ten question multiple choice survey completed by 105 respondents comprised of general education and special education teachers as well as itinerant personnel across a variety of content areas.

Conclusion 1. Survey respondents perceived Thinking Maps® as an effective visual tool to facilitate learning. This was revealed through the survey question results following representative comments that support the overall conclusion; Thinking Maps® "improved understanding of the concepts being taught,"; they "allowed greater access to the curriculum,"; and "gives them [students] a base for independent study."

Conclusion 2. Thinking Maps® improved critical thinking. Many teachers offered commentary that Thinking Maps® made a significant impact on critical thinking skills. Teachers viewed the use of maps as excellent ways to organize thoughts in order to build a clear structure of what needed to be learned. One participant indicated that Thinking Maps® increased students' "knowledge and thinking skills when used with whole groups and independently." Another participant wrote on the survey that the "value of the Thinking Maps'® approach is specifically of thought pattern to task." The

survey respondent went on to report that “critical thinking cannot be taught by rote...[and that some teachers] “are not critical thinkers themselves, so learning to use Thinking Maps® increases their own ability/skill to practice critical thinking as a way of life.” One survey respondent was also an adjunct faculty member at a local university and stated that Thinking Maps® encouraged her students to develop a higher level of thinking with respect to application and evaluation. That comment was corroborated by others in higher education during a workshop on Thinking Maps® that this researcher presented to nearly 100 school psychologists. Many of them were adjunct or assistant professors who stated that they were anxious to use this visual tool with their undergraduate and graduate students.

Conclusion 3. Survey participants did not view Thinking Maps® as a visual tool that could be used daily across the content areas. Rather the largest number of participants (58 out of 88 respondents to question one) used Thinking Maps® one to two days per/week. The supporting commentary they offered indicated that for some participants, it depended on what was being taught. Inasmuch as many teachers did not know how to use Thinking Maps® effectively across other content areas it is then important that Professional Development be offered to help teachers determine ways in which this visual tool can be utilized consistently in all subject areas including Math, Science, and Social Studies.

Conclusion 4. Teachers tended not to use the Thinking Maps® that required students to use greater cognitive resources. Thus, the Multi-Flow Map that linked cause

and effect and the Bridge Map which is associated with analogous relationships were sparingly, if at all, used. One teacher remarked that the Tree Map was “harder for students to understand.” The Bubble Map was the map most used in the classroom followed by the Circle Map because they were easier to construct and user friendly. Both maps are associated with a thinking skill that is uncomplicated to teach. The Bubble Map is linked to describing and the Circle Map is used for brainstorming or defining in context. Children usually enjoy drawing and making a circle is not a complex shape to construct, so it follows that they feel positive about making a Bubble Map. The Double-Bubble Map was the third map most frequently used in the classroom. Teachers wanted their students to experience success and enjoy learning; therefore, they tended to use the maps that kids enjoyed most. Consequently, in the future, when providing initial and follow-up training in Thinking Maps®, consultants will need to devote more time and practice with participants in developing those maps which require higher level thinking such as the Brace Map, Multi-Flow Map, and Bridge Map. This will increase teachers’ comfort level in instructing students how to use these maps more frequently.

Conclusion 5. Elementary teachers used the maps with greater frequency than the upper grade teachers. Four of the 53 elementary school teacher respondents reported using Thinking Maps® daily and eight used them three to four times per/week. Only one middle school teacher participant and one itinerant personnel respondent used the maps five days per/week. Four of the nine middle school teachers used Thinking Maps® three to four times per/week. While the elementary sample was the largest, none of the elementary-middle school or high school participants reported using the maps daily as

compared to the elementary school teachers. All elementary-middle and high school teacher respondents used the maps one to two days per/week or not at all.

Conclusion 6. An overwhelming number of participants indicated that Thinking Maps® improved comprehension. Many revealed that the maps assisted students with accessing prior knowledge, a key component in the acquisition of meaning. Survey participants viewed the maps as a viable method to make connections to the students' existing schema in any area of study. The maps provided a motivational tool to improve focus and extended time on task. In doing so, students paid more attention to details. While Thinking Maps® are a common visual language within a school community; they also provide students with an interesting and fun way to organize their thoughts, information, and facts about a given topic. Visually representing the thinking process increased students' "visual links to text" as described by one participant.

Conclusion 7. Thinking Maps® were used as a springboard for writing. Several respondents across all grade levels discussed the impact of Thinking Maps® had on improving writing skills. When using the maps there was increased participation in providing oral and written responses. One teacher indicated her "astonishment at the improvement in writing assignments that involved comparing and contrasting situations." The ability to use Thinking Maps® as a way to transfer ideas from a graphic form to written text assisted students with responding to writing prompts. This is especially significant during standardized testing, as students must discuss a given topic thoroughly to earn a proficient score. The maps help students to mentally organize their thoughts to

write. Thus, students are able to identify details and write about a given topic after making a visual link to the text.

Conclusion 8. Itinerant personnel use Thinking Maps® to facilitate professional development. These personnel provided support to teachers within the classroom with demonstration lessons and through workshop offerings across a variety of academic content areas in math, reading, and science. Commentary offered by one survey respondent was Thinking Maps® helped “adult learners process and synthesize knowledge of theory and practice at their level which enabled them to go back to their school to apply with students at their levels.” Thinking Maps® were used as a viable option to explain concepts during teacher training.

Conclusion 9. Teachers found that Thinking Maps® improved student achievement on standardized testing instruments, and district lesson and unit assessment scores. Survey respondents reported that the maps facilitated independent learning, increased time on task and helped students to organize thoughts, information, and facts. Using a common set of visual tools improved students’ recall and ability to link academic tasks to a thinking process. One participant remarked that students demonstrated an awareness of which map to use for a particular thinking process.

Conclusion 10. Thinking Maps® improved students’ attitudes towards reading. Participants at all teaching levels determined that the maps generated students’ interest in reading. Students were excited and enthusiastic about using the maps during lessons. The use of maps facilitated greater discussion of text presented in class which included

read alouds and the core basal reading program *Open Court Reading*. One participant noted in their commentary that students increased their ability to “focus on main ideas and ideas of stories.”

Conclusion 11. Teachers must demonstrate the value of the maps in helping students organize thinking and learning on a consistent basis. Students construct Thinking Maps® independently some of the time. However, many teachers indicated in their commentary that students created the maps only when required to do so. Some students had to be guided and directed. This could be correlated with the fact that teachers do not use the maps on a daily or frequent basis. Students will gain automaticity with Thinking Maps® if they see their teachers use and support student opportunities to utilize the maps on a consistent basis. Respondents observed their students using the maps more so with writing exercises to develop sentences and paragraphs.

Conclusion 12. Teachers at all levels used Thinking Maps® with literature. The maps assisted students in language development and comprehension of literature; however, access to literature within the schools represented in this study was limited. Most survey participants reported the existence of a classroom and school library, but no school librarian. The lack of a school librarian has serious implications. Lack of a librarian meant that students did not have access to current books within their individual schools. Some libraries were used as storerooms for old equipment and furniture. Worse yet, many books sat disorganized on shelves growing obsolete. The books leftover in unattended libraries did not represent current authentic literature and lacked content that

generated interest among students. Students had to rely on their teachers to expose them to quality literature. Developing a classroom library was a policy dictated by the district's Department of Literacy. Language Arts teachers were expected to maintain a classroom library complete with recommended reading correlated to the core basal reading program and books contributed by the individual teacher. Authentic and current literature was available to schools that had the Accelerated Reader program; however, implementation was sporadic. Optimally, librarians and libraries are integral to curriculum development and good schools. Yet, the schools of the participants surveyed for this research were severely lacking fully functional school libraries, inclusive of staff.

Conclusion 13. Follow-up training is crucial in promoting the usefulness of Thinking Maps® within the district. The special education department led the effort in offering additional workshops beyond the introductory training. Itinerant personnel in science and special education provided workshops after school and during the summer months. Each workshop assisted teachers in taking a deeper look at how to expand the use of Thinking Maps® across all academic disciplines. These workshops included how to use the maps with math, science, building vocabulary, and increasing reading comprehension. Thinking Maps® provides an opportunity for differentiated instruction particularly for youngsters who need an additional learning modality to supplement auditory instruction. Teacher understanding to value the use of maps can be increased with a commitment to follow-up professional development support. Some survey respondents were not aware that follow-up training was available inasmuch as budget cuts reduced the likelihood of further teacher training and support of Thinking Maps®.

Sustainability must be paramount in maintaining the fidelity for using these visual tools across all content areas. A greater collaborative effort which offers ongoing support mechanisms must be embedded within each school community and sustained by both general education and special education if Thinking Maps® are to become a successful common visual language. Training entire school communities may be an answer.

Conclusion 14. Survey respondents used Thinking Maps® with more boys than girls across all teaching levels. At every level from elementary through high school and including itinerant personnel, the total number of teachers used Thinking Maps® more frequently with males than females. This conclusion is formed because survey results indicated a larger number of males (772) than females (462) in the total number of classrooms across teaching levels. Presumably, Thinking Maps® had a positive influence on the attitudes and improved comprehension of urban elementary school males as the subsequent discussions of Research Questions Two and Three reveal.

Discussion and Conclusions Regarding Research Questions Two and Three

The qualitative portion of the study addressed Research Question Two: How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in two elementary school general education classrooms? In addition, Research Question Three: How do Thinking Maps® influence comprehension and attitudes towards reading of urban male students in an elementary school special education classroom? Conclusions were based on observations, surveys, and interviews of 30 males in one second grade, one fourth grade, and one learning disabilities classroom in two elementary schools.

Conclusion 15. Using Thinking Maps® had a positive influence on the attitudes of boys overall. Males within each classroom were enthusiastic about using the maps with reading. According to their teachers, attitudes towards reading, particularly in the fourth grade classroom, changed dramatically from the beginning of the school year to the end of the school year. The fourth grade teacher attributed part of the change to Thinking Maps® and their exposure to the African American children’s literature they were listening to each week. The LD teacher reported that the boys in her class would rather do anything but read; however, their Exit Interviews and attitude surveys revealed otherwise. They all stated that they liked to read.

Each of the classroom teacher participants indicated that their male students “loved” the maps and that they helped students with details. The boys in all of the classrooms thought they were fun to use. The more circles the boys could draw for a given task, the more they enjoyed constructing the map. Most of the boys selected the Circle Map, Bubble Map and Double-Bubble Map as their favorite maps. Boys who were struggling readers in the general education classrooms, as Mike and Carl, selected the maps which required drawing the most circles. Perhaps the circles were similar to creating hands-on models of cars or other objects. Developing pictures of thinking helped the boys to go beyond the traditional lined page. Using colors to assist with coding information with the maps were another advantage. Attitudes towards reading were positive for all of the boys before Thinking Maps® were even utilized. With the exception of three boys (all fourth graders) and one LD student who said he liked reading “a little bit”, even the most struggling readers, liked to read.

Conclusion 16. Thinking Maps® helped to facilitate comprehension and writing in urban elementary school males. The maps assisted boys with a variety of comprehension skills and strategies which included summarizing stories, character analysis, sequencing, and recalling details. Consistent usage of Thinking Maps® helped the boys to gain automaticity with linking each map with its appropriate functional thinking process. When asked how Thinking Maps® helped them, many of the boys indicated that the maps helped with understanding stories better. Fourth grader Joey remarked, “When somebody reads that [referring to the read-aloud of *I Told You Can Play* (Jordan, 2006)], you probably won’t get a great understanding, but when you do Thinking Maps® everyday you can understand it better.” Second grader Lloyd stated, “I feel good when I can compare things to other things.” [referring to the Double-Bubble Map]. Mike described how the Bubble Map can be used to tell about a “person’s personality.” The second grade teacher discussed how students automatically know when to “make a Double-Bubble Map” whenever they see the words “compare” or “contrast” in their *Open Court Reading* lessons. Tommy indicated that the maps helped him to “understand what’s going on in the story and give good details.” Thinking Maps® enhanced the boys’ understanding of oral and written language.

Conclusion 17. Using Thinking Maps® improved students’ recall. The boys increased their ability to recall events, details, and other concepts across content areas when they used Thinking Maps®. The Flow Map was used more consistently in the second and fourth grade classrooms for illustrating and writing the sequence of events in stories. Because this was done so often, the boys engaged in detailed discussions that

revealed their comprehension of the stories read or heard. In other words, these experiences allowed for reflection, metacognition, multi-sensory learning, and empathic listening. Oftentimes discussions about the stories would be generated during the development of the maps. All of the maps provided a differentiated approach to processing information and offered the boys a practical form of concept development. Fourth grader Jake remarked, “It [Thinking Maps®] helped me so I can remember.” The maps helped to assess and build background knowledge. By making connections to their existing knowledge through graphic forms, it offered the male participants in this study another pathway to learning. This alternative option provided teachers with a concrete measure of assessment for learning abstract ideas. It gave the boys an alternative option which allowed them to depict their knowledge with a graphic form as opposed to a written exam.

Conclusion 18. Using Thinking Maps® facilitated boys’ learning. The maps helped the boys to remain focused and approach tasks systematically. Many of the boys discussed how the maps helped them learn and extract information. Ryan, a fourth grader stated, “I feel good about it [Thinking Maps®] because if you don’t pull out a Thinking Map® then you have all these ideas in your brain and they won’t be able to get let out.” Many of the second and fourth grade male participants revealed to the researcher that the maps helped them to “understand” the stories. For example Lloyd indicated, “I can understand what the story is telling me.”; Timothy exclaimed, “With Thinking Maps® ...you can figure out more information from the books...”; and Justin stated, “They [Thinking Maps®] help me to think about all the stories.”

Conclusion 19. The *Frame of Reference* is not well understood. There was little evidence of the use of the *Frame of Reference* which is the most powerful part of the map. The frame represents overlapping personal and cultural experiences, values, and belief systems. The multiple background frames give reference to and guides thinking, feelings, and judgments. The boys were to write within the frame who or what influenced their responses. However, the boys rarely drew or discussed their frames of reference. The initial training in this urban district focused on using the frame around the Circle Map only. However, teachers' failure to use frames of reference as a means of facilitating students' metacognition may be attributed to insufficient training at the onset and subsequent follow-up staff development with respect to the frame of reference.

Conclusion 20. Learning and utilizing Thinking Maps® was associated with an increase in the quantity and quality of verbal contributions in class. With teacher guidance, boys talked more about the stories they read, thus improvement in their ability to answer comprehension questions. They appeared more engaged in classroom discussions of story content. The maps assisted the boys' vocabulary development which increased their ability to understand and use new words in their various context. Teachers reported there was an increase in the quality of their writing. The Circle Map was used most often to activate prior knowledge or introduce vocabulary before beginning a story. Using this map before reading enhanced discussion of the text with the core basal program and read alouds.

Conclusion 21. The teacher makes the difference as to the degree of effectiveness of Thinking Maps®. The frequency of use and explicit modeling were greater factors in

how boys applied the maps to conceptual understanding of oral and written text. When the LD teacher began using the maps during the second semester of the school year, yet within the weeks of the study, the boys were able to understand how to use them in very little time. Practice and consistency became the key to students successfully using Thinking Maps®.

Conclusion 22. Boys in the learning disabilities classroom needed consistent repetitive, frequent, and ongoing modeling of how to use the Thinking Maps®. Their ability to demonstrate an understanding of the thinking processes linked to each map was substantive in just a short period of time. However, unlike the second and fourth grade teachers, the learning disabilities teacher had less professional development and experience teaching Thinking Maps®, thus the boys in this classroom did not apply Thinking Maps® before, during, and after reading daily. Mrs. Smith stated that she used “simple” maps first. However, once the boys developed a basic proficiency with those simple Thinking Maps®, either the duration of the study or the teacher’s comfort level of using more implicit forms of Thinking Maps® became missed opportunities for students to create a greater variety of the maps independently.

Conclusion 23. Boys wanted to experience literature at all age levels in the elementary grades. Amidst the hardships experienced by some of the boys, they yearned for opportunities to own and experience books. Their engagement and growth was incremental which is a possible outcome in a supportive environment. The boys wanted to have books, their own books, or a library in their school and classroom with interesting literature to read. The boys were so eager to hear the stories that many times a boy in the

study asked about me bringing another book for their teacher to read to them. On one occasion Tony, a boy from the learning disabilities classroom who came to school sporadically during the study asked me, “Mrs. Edwards when are we going to read *Ron’s Big Mission?* (Naden, 2006)” Another boy let me know that their teacher had not read *Big Jabe* (Nolen, 2000) and wondered when their teacher was going to read it to them in class. I read *Because You’re Lucky* (Smalls, 1997) to Jake, a fourth grader who was transferred to another fourth grade class late in the study for disciplinary reasons. That became his favorite book and ultimately the book he selected to take home.

Conclusion 24. Reading aloud to children is one of the most valuable activities a teacher can do during the school day. Children are more likely to read for pleasure when they listen to books read aloud and when they have access to books. All of the teacher participants in the qualitative portion of the study read aloud stories provided by the researcher with great enthusiasm and passion. The boys always appeared to listen attentively and used the illustrations and Thinking Maps® to add to their understanding of the text. Mrs. Rosenberg, the fourth grade teacher, remarked that she “never realized how many children had never had a bedtime story read to them.” Reading aloud taught the boys and girls about literature in a way that independent or silent reading could not.

Conclusion 25. A positive attitude of boys towards reading is linked to reading material that interests them. In this study, the urban male participants tended to enjoy the books with a sports theme and selections where music or a hip-hop beat was integrated with the text. Joey, a fourth grader, indicated to the researcher that he loved scary books. Conducting an interest inventory at the beginning of the school year will assist the

teacher in providing easy access to a wide variety of narrative and informational text at different reading and interest levels that the boys will want to read or listen to daily. Each of the three classroom teacher participants selected the books that the boys enjoyed the most to add to their classroom libraries.

Conclusion 26. There was a decline in positive attitudes towards reading of fourth grade boys. Despite their level of reading achievement, younger male readers (second graders) perceived themselves as good readers and stated that they liked to read. This also included struggling male readers who were receiving special education services. However, attitudes of fourth grade boys were not as positive towards reading. Three of the fourth grade boys indicated in their exit interviews that they did not like to read. Eight of the nine boys surveyed using the ERAS were not interested in recreational reading (e.g. reading a book on a summer day).

Discussion

This added discussion enables further insights about the boys in this study and because it is valued, information that wasn't specifically linked to the analysis of data in Chapter Five, it is provided here,

Sample Profiles of Boys

The books I brought to each class became so important to the boys' weekly routines, that by the end of the study it was imperative that each student receive a new book to take home. Many of the youngsters in each class were absent on the day of book delivery. The second and fourth grade teachers agreed to make sure the boys and girls

who were absent received their books. The general education students lived within walking distance of their neighborhood school. This was not true of most of the students in the learning disabilities classroom. Unlike the second and fourth graders who walk to school, some LD students were bused from miles away, and many of their parents did not have transportation.

After much effort, both the LD teacher and I were unsuccessful in getting some parents to get their children to school to receive my gift book given to each child at the end of the study. Therefore, I picked up the remaining ten books and spent the weeks after the school year ended finding children and making home deliveries to those students who were absent from the learning disabilities classroom. With each delivery, I spent at least five minutes talking to parents about the book and *telling* them to read it to their children. There were two boys from the LD classroom who moved and were difficult to locate, Raymond and Cortez. The schools did not have a record of where they moved, so I had to wait until the beginning of the 2009-2010 school year. I surprised both boys at their new schools with their requested books. Raymond asked for *The Paperboy* (Pilkey, 1999) and Cortez wanted *Henry's Freedom Box* (Levine, 2007). They were elated that I remembered them and had the books they wanted. I spoke briefly with their individual teachers and asked them to read the books to their class.

Georgie, a small built seven-year old LD student, was one of the boys who did not attend the last week of school. He had perceptual motor problems with developing the maps, but demonstrated an understanding of the thinking process of the Double-Bubble Map and Flow Map. He believed that Thinking Maps® helped him “all the time” and

indicated in his exit interview that he enjoyed using the Brace Map to break down the setting of a story even though he was not completely sure how to use it without teacher guidance. As I pulled up to his practically abandoned apartment complex with boarded up windows and unoccupied units, his mother came to the door with two other children under the age of five. She was surprised and happy to learn that I brought him a book *Up the Learning Tree* (Vaughan, 2003). She punctuated her gratitude with frequent exclamations of “God bless you.” However, nothing compared to the smile on Georgie’s face when he saw that his “teacher” came for a visit with a gift that would last a lifetime. Georgie revealed in his exit interview that he went to the library once a year, so I made sure to ask his mom to read his new book to him and his siblings. She agreed.

Joey, a ten-year old fourth grader embraced Thinking Maps®, read alouds, and *Open Court Reading* with great enthusiasm. His teacher reported that upon entering fourth grade, he did not like to read. However, with the use of Thinking Maps® and exposure to African American children’s literature during the second semester of school, reading became a lot more fun. Joey was very thorough and detailed when he constructed Thinking Maps® and stated, “If you use Thinking Maps® you’re going to understand more about what you’re reading about.” Joey reported that he went to the library “sometimes once every Saturday and sometimes like once every two weeks” and was “too old” to be read to at home, yet he appeared to enjoy every minute of Mrs. Rosenberg’s read alouds. He requested *Hip Hop Speaks to Children* (Giovanni, 2008) as his gift book because he enjoyed the jazzy hip-hop rhythms of the beat as poetry was recited on the CD that accompanied the book. The maps were not used nor were they

necessary for every single reading opportunity, particularly poetry. It was evident in this study that too much emphasis and attention is placed on decoding. Reading for pleasure and how to gather details is important to literacy development.

Lloyd, was a very curious and articulate seven-year old second grader who demonstrated great potential for scholarship and promise. He was always eager to participate in all activities utilizing Thinking Maps® with read alouds and *Open Court Reading*. Lloyd's love for reading emanated from his responses to stories despite the revelation that he did not have any books at home and did not ever remember being read to. The book I gave him as a result of the study was one of only two books in his entire possession. Yet, he was always excited to listen to read alouds, complete lessons from *Open Court* and proudly display Thinking Maps® that he drew almost daily in his journal. On one occasion, Mrs. Jones displayed Lloyd's large chart size Circle Map on her classroom bulletin board that he used to brainstorm ideas about dinosaurs. He understood how to utilize the Circle Map as a graphic form to display his existing knowledge before reading a story and new knowledge once the story ended, but his favorite map was the Double-Bubble. He had a keen understanding of how to apply the maps to vocabulary, spelling, and comprehension skills. His favorite books were *Big Jabe* (Nolen, 2000) and *Salt in His Shoes* (Jordan & Jordan, 2000).

Implications for Practice and Future Research

The findings from this research on the effects of utilizing Thinking Maps® to influence attitudes and comprehension of urban elementary school males have several instructional implications. Thinking Maps® enhance comprehension by helping boys to

organize verbal information and thereby improving their recall. Dual coding theory maintains that information be coded in both verbal and non-verbal formats. By attending to both formats, information is easier to retain.

Learning disabled youngsters and students with learning difficulties in the general education settings benefit from strategic opportunities to promote their cognitive development and achievement. Frequently, learning disabled students have trouble recalling key information and making connections between broad concepts and details. They require extra support to guide them in extracting important information in expository and narrative text. Thinking Maps® offer support when new information is presented and previously learned information is reviewed. Difficult concepts can be simplified so that complex instructional content is organized in useful meaningful ways.

Schema theory explains that within our memory exist almost infinite schemas or our own networks of information. The use of Thinking Map® as a systematic logical instructional approach enables teachers to guide students to ascertain prior knowledge that already exists (the known) and connect it with new knowledge (the unknown), thereby promoting reading and writing comprehension. Thinking Maps® can be used as a pedagogical resource to develop and guide students to link new concepts with existing knowledge throughout all stages of a lesson to sustain meaningful learning opportunities for students. The maps allow for more than just content acquisition. They help students learn processing skills, patterns for organizing information before or during a test, critical thinking skills, and communication skills.

As a result of this current research, the following implications are apparent for future practice and research.

1. Future research should focus on measuring comprehension with standardized reading tests as well as examining Thinking Maps® with independent (aesthetic and efferent (Rosenblatt, 1978) reading in the middle school and high school to ascertain further influences with respect to improving reading test scores and reading performance beyond test measures.
2. Future research could explore how to use Thinking Maps® with young children. There are many examples of Thinking Maps® with hand-drawn illustrations and magazine cut-outs for kindergarteners, but no research to support their effectiveness or usage on a pre-school level.
3. Another important research area would be to examine the effectiveness-efficiency ratio for each individual map with writing by investigating the differential effects of using complex thinking processes associated with Thinking Maps® as the Bridge and Multi-Flow Maps as compared to the Circle and Bubble Maps. For example the teachers in this study were not completely confident about using the higher order Thinking Maps®. They may have avoided those maps because they take longer for students to learn and take more time to teach. Investigating student gains on a quantitative and qualitative level may be of value to help teachers gain confidence in using more complex Thinking Maps® with greater frequency particularly with writing.

4. Future research could focus on comparing the effects of Thinking Maps® with graphic organizers intended to improve comprehension. Many core reading programs contain several different types of graphic organizers for teachers to use with students throughout a lesson or Unit. Knowledge of the conditions under which Thinking Maps® usage is superior or inferior to other visual organizers associated with a district's core reading program would inform educators in choosing appropriate instructional supportive visual aids for students.
5. Thinking Maps® embedded in computer based instructional programs and their impact on academic achievement particularly in this era of digital media would be another potential research initiative. The Thinking Maps® corporation has recently developed a software program that will generate maps automatically for students as a springboard for organizing thinking in writing and reading. It helps students to quickly “make connections and organize information for oral reports, research, science projects, and other projects” (Hyerle, 1996). Research on how computer generated maps impact achievement as compared to hand drawn maps would be helpful. Many teachers are digital immigrants while their students are digital natives, making research in this area of study essential.

Limitations

This study as all that preceded and those to follow has limitations. The scenarios described below pertain to the limitations that affected this study.

It was difficult to measure numerical gains in listening and/or reading comprehension because the district prohibited me from reviewing academic records or

administering pre and post-tests using standardized or diagnostic testing instruments. The question of whether Thinking Maps® influenced comprehension on a quantitative level within the three classrooms could not be answered.

Demands and restrictions were placed on whom the researcher could survey. Many principals, supervisors, directors, and other administrative personnel were trained in Thinking Maps® from 2005-2008; however, I was prohibited from sending them surveys. The information administrators could have provided would have enriched this study. It would have added credence to the effectiveness of Thinking Maps® and provided information on how to support teachers with follow-up support within a specific school community.

The district did not adhere to the four to six week turnaround time indicated on their Research website to inform potential researchers of approval to conduct a study after a proposal is submitted. I presented a proposal to conduct research on Thinking Maps® in August of 2007. It was not until February of 2009 that I received approval to survey teachers and to enter into the three classrooms for the qualitative portion of my study. As a result, my sample for the survey was significantly reduced due to school closures and rightsizing of the district.

Once approval was granted, the school year had already started five and a half months prior to the beginning of the study, affecting the results of the Elementary Reading Attitude Survey. By the time I began my research, two of the teachers had already started using Thinking Maps® making it difficult to make a significant

comparison of the impact of the treatment and boys' attitudes towards reading from the beginning of the school year to the end.

Using colorful, inviting and interesting African American children's literature with positive male images in illustrations and text had a lasting effect on the boys' comprehension. At some point, the books became a part of the treatment and I found myself involved in two studies. Perhaps using the district's core basal series unaccompanied by quality children's literature would have given me greater insight on the effectiveness of Thinking Maps®. Doing so would assist with staff development in creating new ways to use the maps with individual lessons in the core basal reading series.

Closing Comments

Thinking Maps® are useful visual tools to facilitate learning. They provide a consistent and common graphic across all academic content areas with particular benefits to organizing thinking for writing and comprehension. If Thinking Maps® are to remain a universal language within a school community, ongoing professional development must be implemented on a district and/or school wide level with consistent follow-up support. Modeling effective instruction with Thinking Maps® will assist teachers in discovering the benefits of using the maps daily thereby helping to increase independent learning. The practicality of using Thinking Maps® is primarily a function of the a) teachers' knowledge about the subject being taught; b) knowledge and skills of Thinking Maps'® pedagogy; and c) opportunity to employ Thinking Maps® pedagogy in an effective

manner. The boys responded favorably to Thinking Maps® as a way to assist with understanding written and oral language.

The instructional methods, classroom environment, individual learner's experience, cognitive maturity, and motivation had an influence on how each male participant interacted with Thinking Maps®. The books provided to teachers by the researcher contained a range of positive male images in both illustrations and text which created interest and motivation for the boys to read. This interest helped to generate the production of the maps thereby influencing understanding. The boys' overwhelming response to African American children's literature as they engaged in creating Thinking Maps® contributed to their comprehension and positive attitudes towards text. Construction of the maps linked to their appropriate thinking process was supported by effective teachers who did not rely solely on traditional auditory instructional methods of instruction to teach language arts skills.

The teachers' engagement of the boys in authentic quality read alouds facilitated interest in generating Thinking Maps®. Urban males need to read and hear stories portraying boys who graduated from high school and enrolled in junior colleges, Ivy League schools, state universities, and Historically Black Colleges and Universities. They need to know that boys grow up and go to college to earn degrees and make significant contributions to society. Stories that depict young men seeking a higher education would be a powerful archetype for boys to pattern themselves. It is crucial that elementary through high school students read about young men doing positive things while resisting the temptation of crime. Boys need to read more about current positive male role models

and images in children's literature, which reflect all socio-economic backgrounds. They need to hear stories about young men who overcame peer pressure, made a commitment to excellence, and shirked criticism by those who would say they think they are better than others. Authors should write more stories about parents who are trying to instill values in their sons as treating others with respect and kindness, staying off drugs, and maintaining a sense of responsibility.

Many of the boys in this study still have a way to go on the path to becoming competent readers, yet the growth and personal interests at the individual levels implied that they can become successful readers and writers with continued quality driven classroom reading and writing opportunities. Helping the boys in the qualitative portion of the study experience literature through teachers frequently reading aloud to them as well as consistent scaffolded guidance with Thinking Maps®, will allow them to continue building their comprehension skills and transfer their knowledge to reading activities across other content areas. Thinking Maps® instruction supports boys in attaining instructional objectives for both typical learners and those with cognitive disabilities.

APPENDIX A

DIAGRAMS OF EIGHT THINKING MAPS

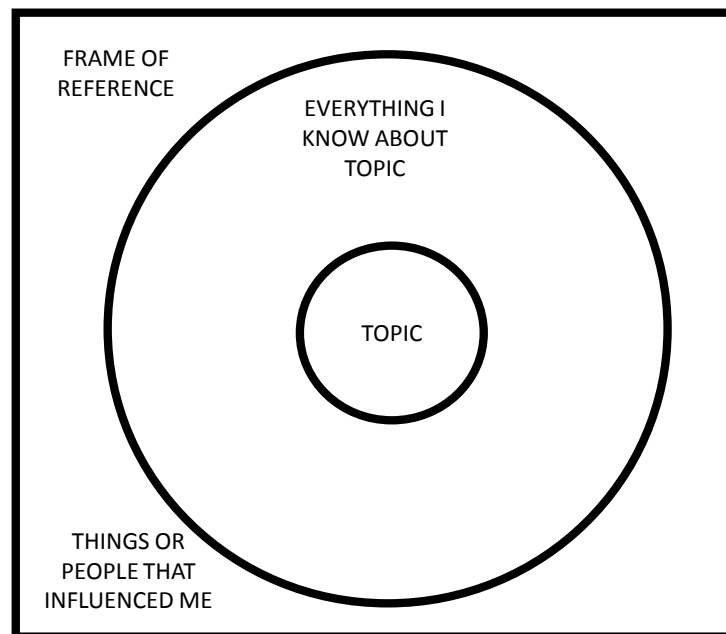


Figure A1. Circle Map.

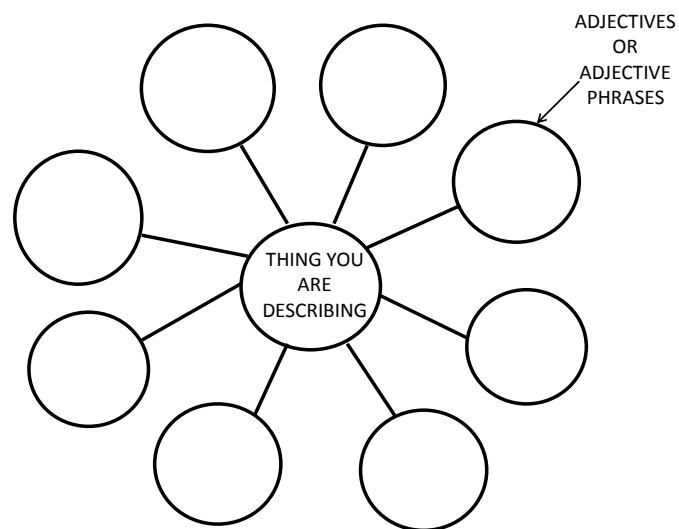


Figure A2. Bubble Map.

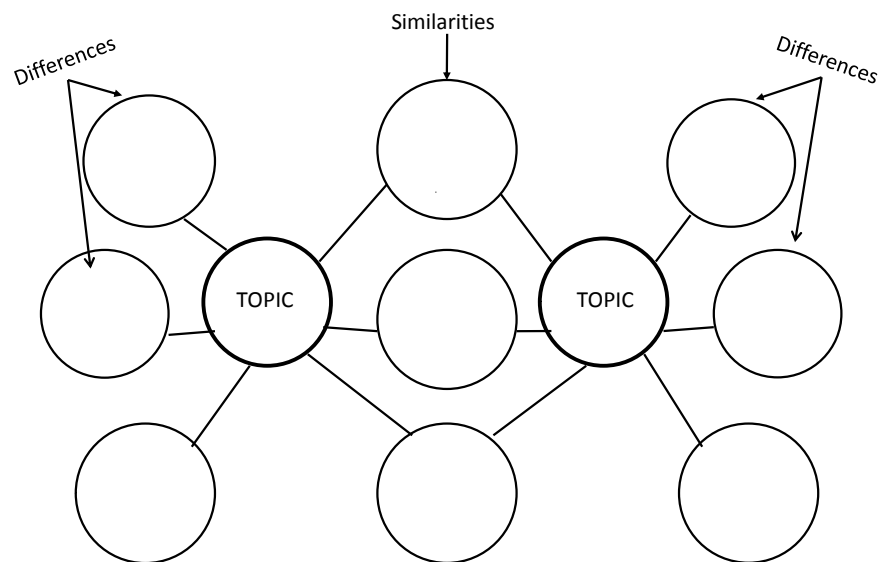


Figure A3. Double-Bubble Map.

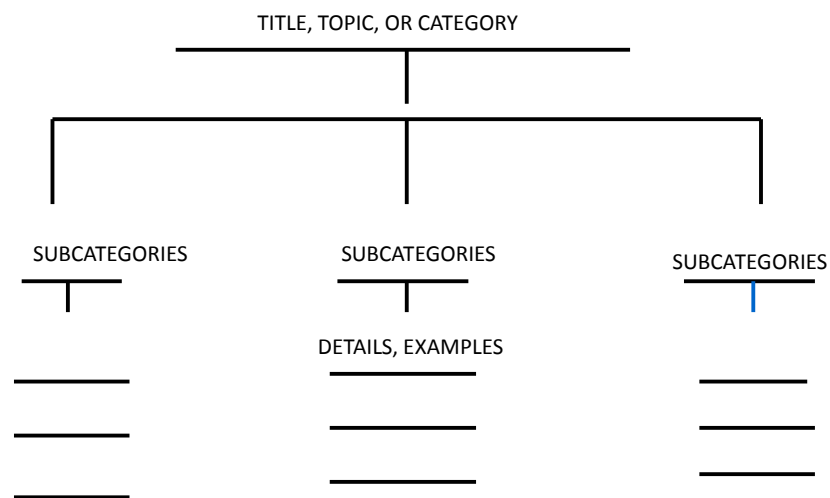


Figure A4. Tree Map.

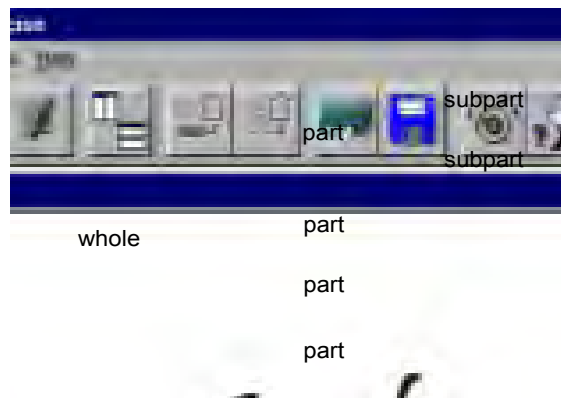


Figure A5. Brace Map.

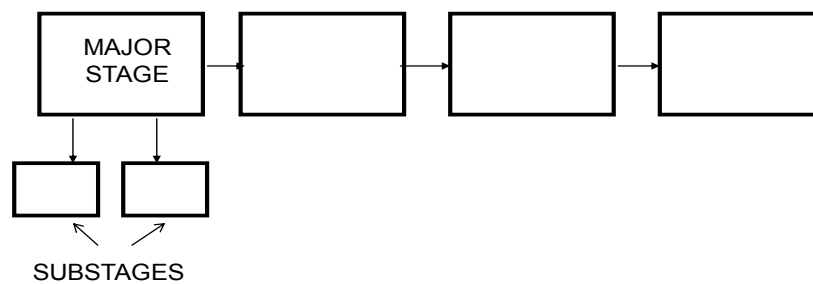


Figure A6. Flow Map.

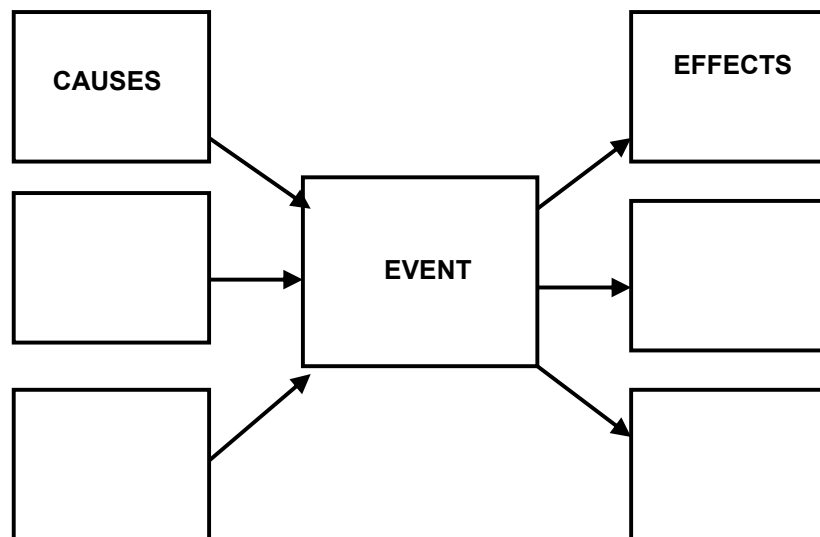


Figure A7. Multi-Flow Map.

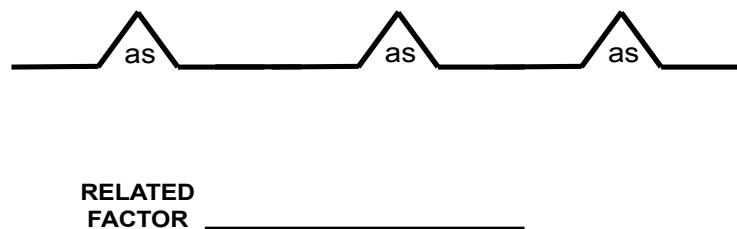


Figure A8. Bridge Map.

APPENDIX B
IRB APPROVAL LETTER

APPENDIX C

SURVEY OF TEACHER'S PERCEPTIONS OF THINKING MAPS

Comments

(please specify which question you are responding to)

Survey of Teachers' Perceptions of Their Use of

Thinking Maps

Level: Elementary _____ Middle _____ High _____

Other: _____

Class size by gender: #Boys: _____ #Girls: _____

Date Trained in Thinking Maps® month _____ year _____

General Education Teacher: _____ Grade Level (s): _____

Subject (s) taught: _____ Self-contained: _____

Related/Support Services: _____ (e.g. TSLI)

Other: _____

Special Education Teacher: _____ Grade Level (s): _____

Subject (s) taught: _____ Self-contained: _____

Category: _____ (e.g. LD, MICI, EL, etc.)

Basic Classroom: _____ Resource Room: _____

Certified in Special Education: _____

Certified in General Education: _____

Certifications: _____

Number of years teaching: _____

Full time contract teacher: _____ Long term substitute: _____

Other: _____

(no signature necessary)

1

Thank you for your time and thoughtful responses to my survey.

Pat Edwards, researcher

4

USE BACK FOR COMMENTS IF NECESSARY

1. I use the Thinking Maps program. *(please check ✓)*

- a. ___ 5 days per/week c. ___ 1-2 days per/week
b. ___ 3-4 days per/week d. ___ not at all

Comments:

2. I have used the following maps to facilitate reading comprehension. check (✓) all that apply

- a. ___ Circle Map e. ___ Brace Map
b. ___ Bubble Map f. ___ Flow Map
c. ___ Double Bubble Map g. ___ Multi-flow Map
d. ___ Tree Map h. ___ Bridge Map

Comments:

3. From your professional observations, Thinking Maps improved my students' comprehension.

check (✓) all that apply

Yes ___ No ___ If yes how so?

- a. ___ Improved district test scores
b. ___ Higher Lesson/Unit Assessment scores
c. ___ Improved ability to access prior knowledge
d. ___ Improved test taking skills

Other or non-applicable (explain):

Comments:

2

4. I believe Thinking Maps improved my students' attitudes towards reading. Yes ___ No ___ If yes how so? check (✓) all that apply

- a. ___ students more attentive during read alouds
b. ___ students more engaged in discussion of text
c. ___ increased interest in reading
d. ___ students are requesting to take books home
e. Other:

5. I have observed students constructing Thinking Maps on an independent basis as a strategy to assist with reading.

Yes ___ No ___ Comments:

6. Do you use Thinking Maps with literature? Yes ___ No ___

7. Do you have a school library? Yes ___ No ___

8. Does your school have a librarian? Yes ___ No ___

9. Do you have a classroom library? Yes ___ No ___

10. Did you take follow-up training for Thinking Maps?

Yes ___ No ___ check (✓) all that apply

- a. ___ Thinking Maps Going Deep
b. ___ Thinking Maps Building Vocabulary
c. ___ Thinking Maps Sense of Story
d. ___ Other (please specify):

3

APPENDIX D
ADVANCE NOTICE FOR SURVEY

Advance Notice

Dear Respondent:

I am inviting you to participate in a survey about your perceptions of Thinking Maps®. This research project is supported with a grant by the Thinking Maps® Foundation and approved by the Research and Evaluation Department of the Midwestern Urban School District. In about one week, you will receive a short questionnaire at your work location that asks ten multiple choice questions about Thinking Maps®. A comment section has been provided on the back of the survey if you wish to elaborate. I am asking you to look over the questionnaire and, if you choose to do so, complete it anonymously and send it back to me in a stamped addressed envelope which will be provided for you. It should take you less than ten minutes to complete. The results of this survey will be useful in examining the effectiveness of Thinking Maps®, providing insight into best practices for classroom instruction, and future planning of professional development for teachers and other educational personnel.

I thank you in advance for your attention to this important tool to gather data on the usefulness of Thinking Maps®. If you have any questions, I can be reached at [REDACTED]. For questions regarding the rights of human subjects in research, you may contact [REDACTED], Chair, Oakland University Institutional Review Board (IRB), (248) 370-2762.

Sincerely,

Patricia A. Edwards
Doctoral Candidate
Oakland University
Rochester, Michigan

APPENDIX E
CONSENT LETTER FOR SURVEY

Consent Form for Survey

Dear Respondent:

I am inviting you to participate in a survey about your perceptions of Thinking Maps®. This research project is supported with a grant by the Thinking Maps® Foundation. Along with this letter is a short questionnaire that asks ten multiple choice questions about Thinking Maps®. A comment section has been provided on the back of the survey if you wish to elaborate. I am asking you to look over the questionnaire and, if you choose to do so, complete it anonymously and send it back to me in the stamped addressed envelope. It should take you less than ten minutes to complete.

The data from this study will be used to determine the frequency of use and perceptions of Thinking Maps® as a visual tool to aid in thinking and learning. I hope that the results of this survey will be useful in providing insight into best practices for classroom instruction with general and special education students as well as future planning of professional development for teachers and other educational personnel.

There are no known risks to you if you decide to participate in this survey and I guarantee that your responses will not be identified with you personally. All responses will be completely anonymous and confidential. You should not put your name on the questionnaire.

I hope you will take the time to complete this survey and return it. Your participation is voluntary and there is no penalty if you do not participate. Regardless of whether you choose to participate, please let me know if you would like a summary of my findings.

If you have any questions or concerns about completing the survey or about being in this study, you may contact me at [REDACTED]. The Institutional Review Board (IRB) at Oakland University and the Department of Research and Evaluation of the [REDACTED] has approved this study. For questions regarding the rights of human subjects in research, you may contact [REDACTED] Chair, Oakland University Institutional Review Board, (248) 370-2762.

Sincerely,

Patricia A. Edwards
Doctoral Candidate
Oakland University
Rochester Hills, Michigan

_____ I agree to participate in this study.

_____ I decline to participate in this study.

Teacher Signature: _____ date: _____

APPENDIX F
REMINDER NOTICE FOR SURVEY

Reminder Notice for Survey Completion

Dear Respondent,

A week ago you received a survey about your perceptions of Thinking Maps®. If you choose to complete the questionnaire please send it to the address on the stamp addressed envelope as soon as possible. The data will be useful for examining the effectiveness of Thinking Maps®, provide insight into best practices for classroom instruction, and determine future planning of professional development for teachers and other educational personnel within the [REDACTED]. Keep in mind that all responses are completely anonymous. If you have any questions or concerns about completing the survey you may contact me at ([REDACTED]) questions regarding the rights of human subjects in research, you may contact [REDACTED] Chair, Oakland University Institutional Review Board (IRB), (248) 370-2762. Thank you.

Sincerely,

Patricia A. Edwards
Doctoral Candidate
Oakland University
Rochester, Michigan

APPENDIX G
PERSONALIZED COVER LETTER

Personalized Cover Letter

Dear _____,

I hope you will take the time to complete this questionnaire that was sent to you two weeks ago. Your participation is important in determining the effectiveness of Thinking Maps® as an aid to thinking and learning and future professional development for educational personnel within the [REDACTED]. Taking part in this study is voluntary and there is no penalty if you do not participate. All responses will be completely anonymous. Regardless of whether you choose to participate, please let me know if you would like a summary of my findings.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at [REDACTED]. The Institutional Review Board (IRB) at Oakland University and the Department of Research and Evaluation of the [REDACTED] has approved this study. For questions regarding the rights of human subjects in research, you may contact [REDACTED], Oakland University Institutional Review Board, (248) 370-2762.

Thank you,

Patricia A. Edwards
Doctoral Candidate
Oakland University
Rochester, Michigan

APPENDIX H

CONSENT LETTER FOR PARENT

Parent Consent Letter

Dear Parent,

My name is **Patricia Edwards** and I am conducting research in Reading and Language Arts. I am inviting you to have your child participate in a research study entitled *The Effects of Utilizing Thinking Maps® to Influence Attitudes and Comprehension of Urban Elementary School Males*. The results of the study will be used to assess the effectiveness of a new strategy called *Thinking Maps®* which is presently being used by your child's teacher to improve thinking and learning skills in all subject areas with particular value in the area of reading. This dissertation study will focus on how this new strategy impacts comprehension and attitudes towards reading with respect to the district's core reading program, *Open Court Reading*, and children's literature.

I am requesting permission for your child to participate in this project. The project involves having your child listen to and read stories from *Open Court Reading* and children's literature approved by the [REDACTED] then discussing the stories with the aid of eight visual organizers entitled Thinking Maps®. Your child will be taught how to construct these eight visual maps by their teacher and link each organizer to a specific thinking skill. The study will determine how Thinking Maps® are used in guided instruction and independently to aid in gaining an understanding of reading material. Your child will be administered the Elementary Reading Attitude Survey about their feelings towards reading at the beginning and at the end of the study to monitor the effect of this new strategy. It will be carried out at a mutually agreed upon location, day, and time designated by the teacher and school administrator. Exit interview questions of males will be conducted at the end of the study. At the end of this research project your child will be given his/her own hardcover African American children's literature book to take home. Their teacher will receive ten children's literature books to add to his/her classroom library. All books were approved by the [REDACTED] administrators in the Department of Literacy. An important part of Thinking Maps® instruction is their use in helping children gain comprehension of children's literature that is introduced in daily classroom instruction. Comprehension of text is crucial to successful reading achievement. This project will help teachers to more fully understand how children comprehend text.

There are no known risks involved in this study. Your child will benefit because he/she will learn new techniques to improve reading and thinking skills. Complete confidentiality will be maintained at all times. All information obtained will be completely anonymous, thus your child's name will not be used. No real names of students will be used. Your child will be identified by a random number throughout this project and upon completion all information collected will be destroyed. Participation in this study is completely voluntary. You have the right to exclude your child from participating in this project and he or she will not be penalized in any way.

Your signature gives me consent to administer the Elementary Reading Attitude Survey at the beginning and conclusion of the study, pose exit interview questions at the end of the study, audio tape your child's interview, and examine and publish student created Thinking Maps®. Audio tapes will be destroyed at the end of the study. I will be happy to answer any questions you may have. My phone number is [REDACTED]. Additional questions may be directed to my dissertation co-chairperson, Dr. Toni Walters at (248) 370-4205. For questions regarding the rights of human subjects in research, you may contact [REDACTED] Chair, Oakland University Institutional Review Board (IRB), 248-370-2762. Please sign and return this letter to your child's teacher as soon as possible. Thank you.

Sincerely,

Patricia A. Edwards, Doctoral Candidate
Oakland University, Rochester Hills, Michigan

_____ Yes, I give permission for my child to participate in this research study.

_____ No, I do not give permission for my child to participate in this research study.

Signature of parent/guardian: _____ date: _____

Signature of researcher: _____ date: _____

APPENDIX I
CONSENT LETTER FOR TEACHER

Teacher Consent Letter

Dear Teacher,

My name is **Patricia Edwards** and I am conducting research in Reading and Language Arts. I am inviting you to participate in a study entitled *The Effects of Utilizing Thinking Maps® to Influence Attitudes and Comprehension of Urban Elementary School Males*. As part of my doctoral requirements at Oakland University, I would like to conduct my research study in your classroom. The overall purpose of this study is to examine if and how students are utilizing Thinking Maps® in elementary school general education and special education classrooms to improve reading. There will be a focus on comprehension and attitudes of males toward reading with respect to the district's core reading program, *Open Court Reading*, and children's literature. The results of the study will be used to assess the effectiveness of Thinking Maps®, provide insight into best practices for classroom instruction, and determine the implications for further professional development.

Your signature will provide consent to collect data on the effectiveness of Thinking Maps® with *Open Court Reading* and read alouds of African American children's literature. You will be asked to complete a ten question researcher developed, multiple choice, *Survey of Teacher's Perceptions of Thinking Maps®*. Questions were designed to gather data on the frequency of use and your general perceptions of Thinking Maps® as an instructional tool in the classroom. The survey will take place at a mutually agreed upon location, day, and time. Your consent permits this researcher to administer the Elementary Reading Attitude Survey to your students at the beginning and end of the study and to conduct Exit Interviews of male students relative to their experiences with Thinking Maps® at the conclusion of this research project. Further, you consent to using one or more Thinking Maps® daily with *Open Court Reading* and at least 3-4x per/week with African American children's literature which will be provided. Neither you, nor your school, or your students will be identified in any way in presentations or publications arising from this study. A pseudonym will be used in place of your name. All references to your actual identity will be secured at the researcher's residence in a locked file cabinet to which she alone has access. Confidentiality of data collected and access to the data will be maintained at all times. All information collected will be destroyed at the conclusion of the study. Upon completion of this research project your students will be given his or her African American children's literature book approved by the district's administrative personnel in English Language Arts to take home and you will receive ten hardcover African American children's literature books to add to your classroom library.

Any questions concerning the research study or your participation in it, before or after your consent, may be answered by Professor Toni Walters, Ph.D. at (248) 370-4205 or e-mail twalters@oakland.edu (248) 370-4157 in the Reading and Language Arts Program at Oakland University. My number is [REDACTED]. For questions regarding the rights of human subjects in research, you may contact I [REDACTED] Chair, Oakland University Institutional Review Board (IRB), (248) 370-2762. Thank you.

Patricia Edwards, Doctoral Candidate
Oakland University
Rochester Hills, Michigan

_____ I agree to participate in this study.

_____ I decline to participate in this study.

Teacher Signature: _____ date: _____

APPENDIX J

STUDENT CONSENT LETTER

Student Consent Letter

Dear Student,

Your teacher has been selected to be a part of a research study because she is a very good teacher. I would like your permission to give you a reading attitude survey to find out how you feel about reading. I will read each question to your class and you will answer by circling one of four **Garfield** cartoon figures with the face that describes your feelings about reading.

I would also like to interview you about using Thinking Maps® and look at the maps that you draw during reading time. Your answers will not affect your grades in any way. After I am finished with the study, I will give you your very own picture storybook to take home and read. I will also give your teacher brand new books to put in your classroom library. Thank you.

Mrs. Patricia Edwards

Doctoral Candidate

Oakland University

Rochester Hills, Michigan

_____ Yes, you may watch me work with my reading teacher.

_____ Yes, you may interview and give me a survey about reading.

_____ No, you may not watch me work with my reading teacher.

_____ No, you may not interview and give me a survey about reading.

Student Signature:

Date:

APPENDIX K

STUDENT PUBLICITY RELEASE AND AUTHORIZATION

Student Publicity Release and Authorization

PLEASE PRINT ALL INFORMATION

To the parent or guardian of _____:
(Student's name)

On occasion the commercial media or other approved video, photographic and/or audio production crews may be present at the school or at a _____ sanctioned activity your child attends. If you approve of your child's participation in the video/photographic/audio, productions/interviews/activities that may take place, please sign below after reading the following.

I _____, am the parent/guardian of the above-named
(Print parent/guardian name)
student. In the interest of public education, I hereby authorize the _____, its Board of Education, the commercial media and non-commercial production crews, acting through their authorized employees or agents and in their discretion, to use, re-use, publish, re-publish, and copyright audio and/or visual reproductions of the above-named student's voice and/or image, alone or with other persons, with or without the use of the student's name. I further allow for the supervision and participation of the above named student in any school/station (_____), sponsored activities, used to promote and/or train students of the _____.

I hereby release and hold the _____ harmless from any liability and waive any request for remuneration.

(Parent/guardian signature)

(Date)

(Address, City, Zip)

APPENDIX L
SELECTED APPROVED CHILDREN'S LITERATURE BOOKS

Table L1

Book Titles for Second and Third Graders

Author	Book Title	Copyright	Hardcover-ISBN No.
Winter, Jonah	<i>Barack</i>	2008	978-0061703928
Smalls, Irene	<i>Because You're Lucky</i>	1997	978-0316798679
Tarpley, Natasha	<i>Bippity Bop Barbershop</i>	2002	978-0316033824
Barber, Tiki and Ronde	<i>By My Brother's Side</i>	2004	978-0689865596
Winter, Jonah	<i>Dizzy</i>	2006	978-0815410379
Schotter, Roni	<i>Doo Wop Pop</i>	2008	978-0060579685
Wiles, Deborah	<i>Freedom Summer</i>	2005	978-0689878299
Greenfield, Eloise	<i>Grandpa's Face</i>	1988	978-0698113817
Levine, Ellen	<i>Henry's Freedom Box</i>	2007	978-0439777339
Nolen, Jerdine	<i>Hewitt Anderson's Great Big Life</i>	2005	978-0689868665
Jordan, Brian	<i>I Told You I Could Play</i>	2006	978-1933491066
Nolen, Jerdine	<i>In My Momma's Kitchen</i>	2001	978-0064437868
Pickney, Brian	<i>Max Found Two Sticks</i>	1997	978-0689815935
Pickney, Sandra	<i>Read and Rise</i>	2006	978-0439309295
Naden, Corinne	<i>Ron's Big Mission</i>	2006	978-0439507370
Jordan, Deloris	<i>Salt in His Shoes: Michael Jordan in Pursuit of a Dream</i>	2003	978-0689834196
Cooke, Trish & Oxenbury, Helen	<i>So Much</i>	2008	978-0763640910
Grimes, Nikki	<i>Thanks a Million</i>	2006	978-0688172923
Thomas, Joyce Carole	<i>The Gospel Cinderella</i>	2004	978-0060253875
Pilkey, Dave	<i>The Paperboy</i>	1996	978-0385315722
Johnson, Angela	<i>Wind Flyers</i>	2007	978-0689848797

Table L2

Book Titles for Third and Fourth Graders

Author	Book Title	Copyright	Hardcover-ISBN No.
Grimes, Nikki	<i>Barack Obama: Man of Hope, Son of Promise</i>	2008	978-1416971443
Nolen, Jerdine	<i>Big Jabe</i>	2000	978-0688136628
Lester, Julius	<i>Black Cowboy Wild Horses A True Story</i>	1998	978-0803717879
Williams, Mary	<i>Brothers in Hope: The Story of the Lost Boys of Sudan</i>	2005	978-1584302322
Woodson, Jacqueline	<i>Coming on Home Soon</i>	2004	978-0399237485
Uhlberg, Myron	<i>Dad, Jackie, and Me</i>	2003	978-1561453290
Boston Weatherford, Carole	<i>Dear Mr. Rosenwald</i>	2006	978-0439495226
Rappaport, Doreen	<i>Freedom Ship</i>	2006	978-0786806454
Holman, Sandy	<i>Grandma Says Our Hair has Flair</i>	2007	978-0964465541
Giovanni, Nikki (editor)	<i>Hip Hop Speaks to Children</i>	2008	978-1402210488
Nikola-Lisa, W.	<i>How We are Smart</i>	2006	978-1584302544
Johnson, Angela	<i>Just Like Josh Gibson</i>	2004	978-0689826283
Raven, Margot	<i>Let Them Play</i>	2005	978-1585362608
Hartfield, Claire	<i>Me and Uncle Romie</i>	2002	978-0803725201
Bradby, Marie	<i>More Than Anything Else</i>	1995	978-0531094648
Steptoe, John	<i>Mufaro's Beautiful Daughters</i>	1987	978-0688040451
Milway, Katie Smith	<i>One Hen</i>	2008	978-1554530281
Woodson, Jacqueline	<i>Our Gracie Aunt</i>	2002	978-0786806201
Greenfield, Eloise	<i>The Friendly Four</i>	2006	978-0060007591
Rochelle, Belinda	<i>Up the Learning Tree</i>	2003	978-1584300496
Fitzgerald Howard, Elizabeth	<i>Virgie Goes to School with us Boys</i>	2000	978-0689877933

APPENDIX M

TEACHER INTERVIEW QUESTIONS

1. Do you use the Thinking Maps® program across other academic areas as Math or Social Studies?
2. Which Thinking Maps do you find the most effective?
3. Which Thinking Map do you use the most?
4. Which Thinking Map do you observe your students constructing most frequently?
5. How have Thinking Maps® impacted your students' critical thinking skills?
6. Were you trained in Thinking Maps® by a national consultant from the company or a district consultant?
7. Do you find that Thinking Maps® are more effective, less effective, or just as effective as graphic organizers used in *Open Court Reading*? Briefly explain.
8. How does Thinking Maps® impact reading achievement in your male students?
9. What are the general attitudes of your male students towards reading? What makes you think so?
10. Do Thinking Maps® help facilitate writing? Why do you say so?

APPENDIX N
EXIT INTERVIEWS OF MALE STUDENTS

1. Do you like to read? Why? If no, why?
2. Do you think you are a good reader? Why?
3. Does anyone read to you at home?
If yes, how frequently does someone at home read to you?
(a) 1-2 times per/week (b) 3-4 times per/week (c) 4-5 times per/week
4. How many storybooks do you think there are in your home?
5. Do you go to the library? If yes, how often do you go?
6. Do you like the picture storybooks that you read or listen to in your classroom? Do you have a favorite book(s).
7. How do you feel about using Thinking Maps®?
8. What do you think Thinking Maps® did for you? (Answer a, b, or c)
 - a. Thinking Maps® did not help me to understand the stories.
Why do you say so? _____
 - b. Thinking Maps® helped me to understand the stories.
Why do you say so? _____
 - c. Using Thinking Maps made no difference to me understanding the story.
Why do you say so? _____

APPENDIX O
ELEMENTARY READING ATTITUDE SURVEY
AND COPYRIGHT PERMISSION

Elementary Reading Attitude Survey

Directions for use

The Elementary Reading Attitude Survey provides a quick indication of student attitudes toward reading. It consists of 20 items and can be administered to an entire classroom in about 10 minutes. Each item presents a brief, simply worded statement about reading, followed by four pictures of Garfield. Each pose is designed to depict a different emotional state, ranging from very positive to very negative.

Administration

Begin by telling students that you wish to find out how they feel about reading. Emphasize that this is *not* a test and that there are no “right” answers. Encourage sincerity.

Distribute the survey forms and, if you wish to monitor the attitudes of specific students, ask them to write their names in the space at the top. Hold up a copy of the survey so that the students can see the first page. Point to the picture of Garfield at the far left of the first item. Ask the students to look at this same picture on their own survey form. Discuss with them the mood Garfield seems to be in (very happy). Then move to the next picture and again discuss Garfield’s mood (this time, a *little* happy). In the same way, move to the third and fourth pictures and talk about Garfield’s moods—a little upset and very upset. It is helpful to point out the position of Garfield’s *mouth*, especially in the middle two figures.

Explain that together you will read some statements about reading and that the students should think about how they feel about each statement. They should then circle the picture of Garfield that is closest to their own feelings. (Emphasize that the students should respond according to their own feelings, not as Garfield might respond!) Read each item aloud slowly and distinctly; then read it a second time while students are thinking. Be sure to read the item *number* and to remind students of page numbers when new pages are reached.

Scoring

To score the survey, count four points for each leftmost (happiest) Garfield circled, three for each slightly smiling Garfield, two for each mildly upset Garfield, and one point for each very upset (rightmost) Garfield. Three scores for each student can be obtained: the total for the first 10 items, the total for the second 10, and a composite total. The first half of the survey relates to attitude toward recreational reading; the second half relates to attitude toward academic aspects of reading.

Interpretation

You can interpret scores in two ways. One is to note informally where the score falls in regard to the four nodes of the scale. A total score of 50, for example, would fall about mid-way on the scale, between the slightly happy and slightly upset figures, therefore indicating a relatively indifferent overall attitude toward reading. The other approach is more formal. It involves converting the raw scores into percentile ranks by means of Table 1. Be sure to use the norms for the right grade level and to note the column headings (Rec = recreational reading, Aca = academic reading, Tot = total score). If you wish to determine the average percentile rank for your class, average the raw scores first; then use the table to locate the percentile rank corresponding to the raw score mean. Percentile ranks cannot be averaged directly.

Elementary Reading Attitude Survey

School _____ Grade _____ Name _____

Please circle the picture that describes how you feel when you read a book.

1. How do you feel when you read a book on a rainy Saturday?



2. How do you feel when you read a book in school during free time?



3. How do you feel about reading for fun at home?



















4. How do you feel about getting a book for a present?



Page 1

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Survey designed by Dennis J. Kear, Wichita State University

Please circle the picture that describes how you feel when you read a book.

5.	How do you feel about spending free time reading a book?			
				
6.	How do you feel about starting a new book?			
				
7.	How do you feel about reading during summer vacation?			
				
8.	How do you feel about reading instead of playing?			
				

Please circle the picture that describes how you feel when you read a book.

9. How do you feel about going to a bookstore?



10. How do you feel about reading different kinds of books?



11. How do you feel when a teacher asks you questions about what you read?



12. How do you feel about reading workbook pages and worksheets?



Please circle the picture that describes how you feel when you read a book.

13.

How do you feel about reading in school?



14.

How do you feel about reading your school books?



15.

How do you feel about learning from a book?



16.

How do you feel when it's time for reading in class?



Please circle the picture that describes how you feel when you read a book.

17. How do you feel about stories you read in reading class?



18. How do you feel when you read out loud in class?



19. How do you feel about using a dictionary?



20. How do you feel about taking a reading test?



Elementary Reading Attitude Survey Scoring Sheet

Student Name _____

Teacher _____

Grade _____ Administration Date _____

Scoring Guide

4 points	Happiest Garfield
3 points	Slightly smiling Garfield
2 points	Mildly upset Garfield
1 point	Very upset Garfield

Recreational reading

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Raw Score: _____

Academic reading

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Raw Score: _____

Full scale raw score (Recreational + Academic): _____

Percentile ranks: Recreational

..... Academic

..... Full scale

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Survey designed by Dennis J. Kear, Wichita State University

Appendix

Technical Aspects of the Elementary Reading Attitude Survey

The norming project

To create norms for the interpretation of scores, a large-scale study was conducted in late January 1989, at which time the survey was administered to 18,138 students in Grades 1–6. A number of steps were taken to achieve a sample that was sufficiently stratified (i.e., reflective of the American population) to allow confident generalizations. Children were drawn from 95 school districts in 38 U.S. states. The number of girls exceeded by only 5 the number of boys. Ethnic distribution of the sample was also close to that of the U.S. population (*Statistical abstract of the United States*, 1989). The proportion of blacks (9.5%) was within 3% of the national proportion, while the proportion of Hispanics (6.2%) was within 2%.

Percentile ranks at each grade for both subscales and the full scale are presented in Table 1. These data can be used to compare individual students' scores with the national sample and they can be interpreted like achievement-test percentile ranks.

Table 1
Mid-year percentile ranks by grade and scale

Raw Scr	Grade 1			Grade 2			Grade 3			Grade 4			Grade 5			Grade 6		
	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot
80			99			99			99			99			99			99
79			95			96			98			99			99			99
78			93			95			97			98			99			99
77			92			94			97			98			99			99
76			90			93			96			97			98			99
75			88			92			95			96			98			99
74			86			90			94			95			97			99
73			84			88			92			94			97			98
72			82			86			91			93			96			98
71			80			84			89			91			95			97
70			78			82			86			89			94			96
69			75			79			84			88			92			95
68			72			77			81			86			91			93
67			69			74			79			83			89			92
66			66			71			76			80			87			90
65			62			69			73			78			84			88
64			59			66			70			75			82			86
63			55			63			67			72			79			84
62			52			60			64			69			76			82
61			49			57			61			66			73			79
60			46			54			58			62			70			76
59			43			51			55			59			67			73
58			40			47			51			56			64			69
57			37			45			48			53			61			66
56			34			41			44			48			57			62
55			31			38			41			45			53			58
54			28			35			38			41			50			55

Measuring Attitude Toward Reading

Table 1
Mid-year percentile ranks by grade and scale (continued)

Raw Scr	Grade 1			Grade 2			Grade 3			Grade 4			Grade 5			Grade 6		
	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot	Rec	Aca	Tot
53			25			32			34			38			46			52
52			22			29			31			35			42			48
51			20			26			28			32			39			44
50			18			23			25			28			36			40
49			15			20			23			26			33			37
48			13			18			20			23			29			33
47			12			15			17			20			26			30
46			10			13			15			18			23			27
45			8			11			13			16			20			25
44			7			9			11			13			17			22
43			6			8			9			12			15			20
42			5			7			8			10			13			17
41			5			6			7			9			12			15
40	99	99	4	99	99	5	99	99	6	99	99	7	99	99	10	99	99	13
39	92	91	3	94	94	4	96	97	6	97	98	6	98	99	9	99	99	12
38	89	88	3	92	92	3	94	95	4	95	97	5	96	98	8	97	99	10
37	86	85	2	88	89	2	90	93	3	92	95	4	94	98	7	95	99	8
36	81	79	2	84	85	2	87	91	2	88	93	3	91	96	6	92	98	7
35	77	75	1	79	81	1	81	88	2	84	90	3	87	95	4	88	97	6
34	72	69	1	74	78	1	75	83	2	78	87	2	82	93	4	83	95	5
33	65	63	1	68	73	1	69	79	1	72	83	2	77	90	3	79	93	4
32	58	58	1	62	67	1	63	74	1	66	79	1	71	86	3	74	91	3
31	52	53	1	56	62	1	57	69	0	60	75	1	65	82	2	69	87	2
30	44	49	1	50	57	0	51	63	0	54	70	1	59	77	1	63	82	2
29	38	44	0	44	51	0	45	58	0	47	64	1	53	71	1	58	78	1
28	32	39	0	37	46	0	38	52	0	41	58	1	48	66	1	51	73	1
27	26	34	0	31	41	0	33	47	0	35	52	1	42	60	1	46	67	1
26	21	30	0	25	37	0	26	41	0	29	46	0	36	54	0	39	60	1
25	17	25	0	20	32	0	21	36	0	23	40	0	30	49	0	34	54	0
24	12	21	0	15	27	0	17	31	0	19	35	0	25	42	0	29	49	0
23	9	18	0	11	23	0	13	26	0	14	29	0	20	37	0	24	42	0
22	7	14	0	8	18	0	9	22	0	11	25	0	16	31	0	19	36	0
21	5	11	0	6	15	0	6	18	0	9	20	0	13	26	0	15	30	0
20	4	9	0	4	11	0	5	14	0	6	16	0	10	21	0	12	24	0
19	2	7		2	8		3	11		5	13		7	17		10	20	
18	2	5		2	6		2	8		3	9		6	13		5	18	
17	1	4		1	5		1	5		2	7		4	9		6	11	
16	1	3		1	3		1	4		2	5		3	6		4	8	
15	0	2		0	2		0	3		1	3		2	4		3	6	
14	0	2		0	1		0	1		1	2		1	2		1	3	
13	0	1		0	1		0	1		0	1		1	2		1	2	
12	0	1		0	0		0	0		0	1		0	1		0	1	
11	0	0		0	0		0	0		0	0		0	0		0	0	
10	0	0		0	0		0	0		0	0		0	0		0	0	

McKenna & Kear

Appendix

Technical Aspects of the Elementary Reading Attitude Survey (continued)

Reliability

Cronbach's alpha, a statistic developed primarily to measure the internal consistency of attitude scales (Cronbach, 1951), was calculated at each grade level for both subscales and for the composite score. These coefficients ranged from .74 to .89 and are presented in Table 2.

It is interesting that with only two exceptions, coefficients were .80 or higher. These were for the recreational subscale at Grades 1 and 2. It is possible that the stability of young children's attitudes toward leisure reading grows with their decoding ability and familiarity with reading as a pastime.

Table 2
Descriptive statistics and internal consistency measures

Grade	N	Recreational Subscale				Academic Subscale				Full Scale (Total)			
		M	SD	S.M	Alpha ^a	M	SD	S.M	Alpha	M	SD	S.M	Alpha
1	2,518	31.0	5.7	2.9	.74	30.1	6.8	3.0	.81	61.0	11.4	4.1	.87
2	2,974	30.3	5.7	2.7	.78	28.8	6.7	2.9	.81	59.1	11.4	3.9	.88
3	3,151	30.0	5.6	2.5	.80	27.8	6.4	2.8	.81	57.8	10.9	3.8	.88
4	3,679	29.5	5.8	2.4	.83	26.9	6.3	2.6	.83	56.5	11.0	3.6	.89
5	3,374	28.5	6.1	2.3	.86	25.6	6.0	2.5	.82	54.1	10.8	3.6	.89
6	2,442	27.9	6.2	2.2	.87	24.7	5.8	2.5	.81	52.5	10.6	3.5	.89
All	18,138	29.5	5.9	2.5	.82	27.3	6.6	2.7	.83	56.8	11.3	3.7	.89

^a Cronbach's alpha (Cronbach, 1951).

Validity

Evidence of construct validity was gathered by several means. For the recreational subscale, students in the national norming group were asked (a) whether a public library was available to them and (b) whether they currently had a library card. Those to whom libraries were available were separated into two groups (those with and without cards) and their recreational scores were compared. Cardholders had significantly higher ($p < .001$) recreational scores ($M = 30.0$) than noncardholders ($M = 28.9$), evidence of the subscale's validity in that scores varied predictably with an outside criterion.

A second test compared students who presently had books checked out from their school library versus students who did not. The comparison was limited to children whose teachers reported not requiring them to check out books. The means of the two groups varied significantly ($p < .001$), and children with books checked out scored higher ($M = 29.2$) than those who had no books checked out ($M = 27.3$).

A further test of the recreational subscale compared students who reported watching an average of less than 1 hour of television per night with students who reported watching more than 2 hours per night. The recreational mean for the low televising group (31.5) significantly exceeded ($p < .001$) the mean of the heavy televising group (28.6). Thus, the amount of television watched varied inversely with children's attitudes toward recreational reading.

The validity of the academic subscale was tested by examining the relationship of scores to reading ability. Teachers categorized norm-group children as having low, average, or high overall reading ability. Mean subscale scores of the high-ability readers ($M = 27.7$) significantly exceeded the mean of

Appendix

Technical Aspects of the Elementary Reading Attitude Survey (continued)

low-ability readers ($M = 27.0$, $p < .001$), evidence that scores were reflective of how the students truly felt about reading for academic purposes.

The relationship between the subscales was also investigated. It was hypothesized that children's attitudes toward recreational and academic reading would be moderately but not highly correlated. Facility with reading is likely to affect these two areas similarly, resulting in similar attitude scores. Nevertheless, it is easy to imagine children prone to read for pleasure but disenchanted with assigned reading and children academically engaged but without interest in reading outside of school. The inter-subscale correlation coefficient was .64, which meant that just 41% of the variance in one set of scores could be accounted for by the other. It is reasonable to suggest that the two subscales, while related, also reflect dissimilar factors—a desired outcome.

To tell more precisely whether the traits measured by the survey corresponded to the two subscales, factor analyses were conducted. Both used the unweighted least squares method of extraction and a varimax rotation. The first analysis permitted factors to be identified liberally (using a limit equal to the smallest eigenvalue greater than 1). Three factors were identified. Of the 10 items comprising the academic subscale, 9 loaded predominantly on a single factor while the 10th (item 13) loaded nearly equally on all three factors. A second factor was dominated by 7 items of the recreational subscale, while 3 of the recreational items (6, 9, and 10) loaded principally on a third factor. These items did, however, load more heavily on the second (recreational) factor than on the first (academic). A second analysis constrained the identification of factors to two. This time, with one exception, all items loaded cleanly on factors associated with the two subscales. The exception was item 13, which could have been interpreted as a recreational item and thus apparently involved a slight ambiguity. Taken together, the factor analyses produced evidence extremely supportive of the claim that the survey's two subscales reflect discrete aspects of reading attitude.

Patricia Edwards

September 27, 2010

Dear Dr. McKenna,

In October of 2008, I wrote you to obtain permission to administer and include the Elementary Reading Attitude Survey in my research study conducted in the Detroit Public Schools entitled *The Effects of Utilizing Thinking Maps® to Influence Attitudes and Comprehension of Urban Elementary School Males*. You responded in an email (October 23, 2008) that there was a notice in the *Reading Teacher* that grants permission. While that was acceptable to my district, my university requests formal authorization to use your work. I am now preparing to defend my doctoral dissertation at Oakland University and need signed authorization no later than October 4, 2010. I must include your consent within my Appendices. I would like your permission to reprint in my dissertation excerpts from the following:

Elementary Reading Attitude Survey (ERAS)

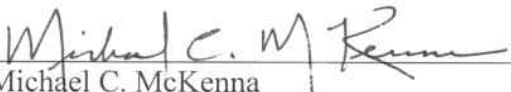
The excerpts to be reproduced are: the ERAS, scoring tables, scoring sheet, and directions to the survey. The requested permission extends to any future revisions and editions of my dissertation, including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by UMI. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you own [or your company owns] the copyright to the above-described material.

If these arrangements meet with your approval, please sign this letter where indicated below and return it to me as soon as possible. Thank you very much.

Sincerely,

Patricia A. Edwards

PERMISSION GRANTED FOR THE
USE REQUESTED ABOVE:


Michael C. McKenna

Date: 9/29/2010

APPENDIX P

RESULTS OF THE ELEMENTARY READING ATTITUDE SURVEY

Table P1

ERAS Questions and Survey Results for Recreational Reading February: June

Question	Grade Levels	Happiest Garfield	Slightly Smiling	Mildly Upset	Very Upset
How do you feel when you read a book on a rainy Saturday?	Second	3:2	1:3	2:1	4:3
	Fourth	2:2	2:2	3:1	2:1
	LD	6:4	1:1	1:2	0:0
How do you feel when you read a book in school during free time?	Second	6:5	2:3	0:1	2:0
	Fourth	1:3	5:1	2:1	1:1
	LD	5:4	2:2	1:1	0:0
How do you feel about reading for fun at home?	Second	5:1	3:3	0:4	2:1
	Fourth	2:2	3:4	2:0	2:0
	LD	6:3	0:3	1:1	1:0
How do you feel about getting a book for a present?	Second	9:5	0:3	1:1	0:0
	Fourth	5:2	2:0	0:2	2:2
	LD	5:2	0:0	1:0	2:5
How do you feel about spending free time reading a book?	Second	7:3	1:1	1:2	1:3
	Fourth	2:2	2:2	2:1	3:1
	LD	6:4	0:1	1:0	1:2
How do you feel about starting a new book?	Second	3:3	7:1	0:2	0:3
	Fourth	7:3	1:0	0:0	1:0
	LD	4:6	2:1	1:0	1:0
How do you feel about reading during summer vacation?	Second	6:2	1:3	1:0	2:4
	Fourth	0:1	0:2	1:0	8:3
	LD	4:3	1:2	0:1	3:1
How do you feel about reading instead of playing?	Second	2:1	2:1	3:2	3:5
	Fourth	0:1	1:2	4:2	4:1
	LD	3:4	1:2	3:0	1:1
How do you feel about going to a bookstore?	Second	6:4	1:3	2:1	1:1
	Fourth	2:4	6:2	1:0	0:0
	LD	6:6	1:1	0:0	0:0
How do you feel about reading different kinds of books?	Second	5:3	3:4	2:2	0:0
	Fourth	3:5	3:1	0:0	3:0
	LD	5:5	2:1	1:1	0:0

Table P2

ERAS Questions and Survey Results for Academic Reading February: June

Question	Grade Levels	Happiest Garfield	Slightly Smiling	Mildly Upset	Very Upset
How do you feel when a teacher asks you questions about what you read?	Second	4:2	5:4	1:1	0:2
	Fourth	4:3	2:3	3:0	0:0
	LD	3:5	4:1	1:1	0:0
How do you feel about reading workbook pages and worksheets?	Second	4:2	2:0	2:4	2:2
	Fourth	3:3	2:1	2:1	2:1
	LD	4:5	1:1:	1:1	2:0
How do you feel about reading in school?	Second	6:3	4:2	0:2	0:2
	Fourth	3:3	2:2	2:0	2:1
	LD	7:6	0:1	1:0	0:0
How do you feel about reading your school books?	Second	4:4	4:2	2:1	2:2
	Fourth	3:2	3:3	2:0	1:1
	LD	3:5	3:1	0:0	2:1
How do you feel about learning from a book?	Second	6:5	1:2	3:0	0:2
	Fourth	6:5	3:1	0:0	0:0
	LD	7:5	0:0	1:1	1:2
How do you feel when its time for reading in class?	Second	4:2	5:3	0:1	1:3
	Fourth	5:1	0:3	3:1	1:1
	LD	5:7	2:0	0:0	1:0
How do you feel about stories you read in reading class?	Second	6:5	2:2	1:1	2:1
	Fourth	3:2	3:2	2:1	1:1
	LD	4:6	2:1	0:0	2:0
How do you feel when you read out loud in class?	Second	4:4	1:2	0:1	5:2
	Fourth	6:1	1:2	2:2	0:1
	LD	4:4	0:1	1:1	3:1
How do you feel about using a dictionary?	Second	2:3	4:3	3:0	1:3
	Fourth	2:4	3:2	3:0	1:0
	LD	6:5	1:1	0:1	1:0
How do you feel about taking a reading test?	Second	3:6	3:0	3:0	1:3
	Fourth	4:2	1:2	3:0	1:2
	LD	4:7	1:0	2:0	1:0

APPENDIX Q
E-MAIL FROM THE DISTRICT RESTRICTING CONTACT

Original Message-----

Sent: Mon, Mar 9, 2009 9:23 am
Subject: Re: Research Proposal Update

Ms. Edwards:

To date (Monday, March 9, 2009), we have received one (1) "Yes" response to your request to conduct research in a school. The name of the school [REDACTED]. This is the **only** school that you may approach regarding your research at this time. When you contact the principal of [REDACTED], the principal will provide you with the name of the staff person in the school designated to monitor the student interviews. Please be reminded, as indicated in your letter of approval, dated February 11, 2009:

"Please note the Office of Research, Evaluation and Assessment will contact the selected schools and provide you with the names of the schools that have agreed to participate in your research. **NO CONTACT SHOULD BE MADE WITH THE SCHOOLS AT THIS TIME.**"

----- Original Message -----

From: PatEdw1@aol.com
Date: Friday, March 6, 2009 9:39 pm
Subject: Re: Research Proposal Update
To: _____

> Hello
>
> At least three principals told me they have received my proposal
> and will
> support my research effort. Did they send back their affirmative
> response to
> your department? Just wanted to make sure they gave a written
> response too.
> Those schools are: I
> Have you heard
> from
> Thanks and
> have a good week.
>
> Pat Edwards

APPENDIX R
COMMENTARY FROM SURVEY QUESTIONS BY PARTICIPANTS

Question 1: I use the Thinking Maps® program.

- 2x monthly
- Summer school science
- Once a month
- Every now and then
- When necessary
- I use Thinking Maps® for “Do Now” assignments. Also, during reading across the curriculum. I use Thinking Maps® across the curriculum. The Thinking Maps® have helped students build upon prior knowledge and organize information. The students are successful in completing the various maps and they are motivated to learn. The students actively participate with the maps.
- Depends on subject matter. I use the maps periodically but not on a regular basis.
- Thinking Maps® are valuable tools. I should be using them more frequently and with greater variety. I get stuck on the familiar. I would attend future trainings.
- As needed for ELA support
- Professionally, as well as personally
- I use them for staff development approximately 12 times
- As needed
- Not weekly but often when I am working in classrooms or with individuals and small groups
- For Professional Development at least once a month
- Once a month in staff development sessions
- I use it when given the opportunity
- Used Thinking Maps® when teaching summer school
- I have used Thinking Maps® for teacher training and support, personally and with
- my own children as required and needed throughout the school year.

- Occasionally with students; occasionally with staff-professional development

Question 2: I have used the following maps to facilitate reading comprehension.

- I only use Thinking Maps® in the area of written expression (paragraph writing)
- We have used all the maps.
- To facilitate Mathematics
- Tree Map harder for them to understand; used Brace Map once from the angle of categories; Flow Map good for sequencing
- I use the thinking maps for writing lessons as well.
- As a Thinking Maps® trainer
- I have used the above checked maps (circle, bubble, and multi-flow, but not for reading comprehension).

Question 3: From your professional observations, Thinking Maps® improved my students' comprehension. Yes ____ No ____ If yes how so?

- Better job of explaining details and linking concepts to prior knowledge.
- It has allowed them to see clearer pictures of what they are reading. Also sequence and put events in order which also spills over into math with what comes first and next as far as steps to problem solving.
- Ability to look at a map and recall science facts and speak orally in a presentation
- Improved some of them (comprehension) students. Hinders others.
- Writing Skills
- New skills
- Improved ability to access prior knowledge; maps help to organize thoughts knowledge for use in writing. Increases knowledge and thinking skills when used with whole groups and/or then independently.
- Students paid attention to detail
- It helped to organize their students' thinking and ideas.

- It helped their writing skills as well as higher level thinking skills.
- They had a better understanding of the story.
- Improved understanding of concept being taught (ex-when we compare and contrast)
- A standard operating procedure
- Thinking Maps® gave students another strategy to improve reading comprehension.
- I was astonished at the improvement in writing assignments that involved comparing and contrasting situations. The Double-Bubble Thinking Maps® organized students' ideas in a way that transferred to their writing high quality complete responses to writing prompts.
- It has definitely allowed better access to the curriculum for struggling readers. As far as higher Unit/Test and district test scores, I don't think I can draw that correlation with any accuracy.
- They allow them to identify and focus on relevant information. It gives them a base for independent study, review. Also they provide a clear structure to build future work on (writing reports, etc.).
- Some areas of the **WXYZ standardized state test**
- Attention span
- Helps students to organize thoughts and information/facts/prior knowledge
- Improved ability to focus and remain on task more independently
- I haven't seen the results of testing yet.
- Identify behavior reflections (causes and effects)
- By organizing and thinking specific to task; allowing them to graphically represent thought processes
- Should improve, I think and ultimately a & d, but I am not present then
- Helped teachers discuss concepts being taught

- Improves comprehension of any area of study.
- Improved writing skills; I have observed the increase in student participation, attempted responses (oral and written) and deeper comprehension as connections are made through the use of Thinking Maps®.
- Teachers reported students performed better academically; it improved students' ability to write as reported by several teachers. Professional observations: Thinking Maps® improved students' comprehension and their ability to think more clearly. They have begun to transfer this skill in other subjects, Math, Social Studies, Science, etc. Many students I spoke with are very happy about using the Thinking Maps®.

Question 4: I believe Thinking Maps® improved my students' attitudes towards reading
Yes___ No___ If yes how so?

- Excited to participate in the creation of maps and locate information to place in maps
- Some of my students
- They are able to pick out details and write about them.
- Students say: "We can use a Flow Map for that."
- Increase in comprehension visual links to text
- improved my students' attitudes towards (mathematics)
- Students more attentive during (problem solving)
- Improved self-confidence
- Students were more interested in the discussion of subject matter.
- Helps focus in on main idea and details of stories read thereby increasing story sense and ability to form own writings
- More apt to actively engage and enthusiastic to participate
- Improved delivery of instruction in my field of science education and reading. Increased interest in science the way it should be done. Not like the round robin group.

- My youngest son (age 10/grade 4) has shown an increased interest in writing.

Question 5: I have observed students constructing Thinking Maps® on an independent basis as a strategy to assist with reading.

- Only when suggested but then they do know how.
- Especially for the **WXYZ standardized state test** and 6 +1 assignments
- Moreso with writing and responding to literature; I use Thinking Maps® for discussion prior to students responding to the “Linking Concepts” and “Connecting the Units” in *Open Court* assessments. Depending on which map is used. Students come to the chalkboard to make or complete the map. At this point it is a group activity to promote comprehension. Students then use the information to respond to the questions. Their sentences are constructed from the information in the Thinking Map®. For students that struggle with writing sentences, I give credit for the content of their Thinking Map®.
- As a resource teacher I am not always in the most opportune position to see the students working on their own (i.e. I see them most during guided instruction. If I introduce it at a time it’s not independent use).
- My students need guidance
- Especially in writing
- During writing
- They ask for certain ones to use.
- Required by teacher
- One student does
- Has to be directed
- My students try to use the Thinking Maps® for all reading assignments.
- Elementary, Middle, and High, General and Special Education
- The teachers I have trained would answer: yes
- Teachers use with students

Question 6: Do you use Thinking Maps® with literature? Yes___ No___

- Map usage reinforces language arts skills and comprehension when used with literature
- When reading in the morning

Question 7: Do you have a school library? Yes___ No___

- Not an active library
- Barely

Question 8: Does your school have a librarian? Yes___ No___ (no comments)

Question 9: Do you have a classroom library? Yes___ No___

- Minimal
- Of sorts
- Very limited

Question 10: Did you take follow-up training for Thinking Maps®? Yes___ No___

- Need
- I would have loved to take follow up training but I was unaware it was offered.
- Didn't realize or informed... there was additional training in Thinking Maps®
- I am planning on taking further training, but have not as of yet.
- Was not aware of such
- Writing for Thinking (Trained by Adrienne Battistone)
- I inserviced teachers in follow-up Thinking Maps® sessions. Students also used Thinking Maps® in Math and Social Studies classes.
- Combining with 6+1 traits
- Same language for learning
- Would like to

- We wanted to, but no \$\$\$
- Embracing the Traits with Thinking Maps® (6+1 Traits of Writing)
- Presented this series; Embracing the Traits with Thinking Maps®

General Comments

- Thinking Maps® have supported both grouping and individual reading comprehension. I plan individual lessons weekly using Thinking Maps® to preteach reading comprehension strategies. This is wonderful since it aligns directly with GLCEs (grade level content expectations) and exposes students deeper to various genres.
- Thinking Maps® did not improve the students' attitude towards reading, but they increased students' interest.
- All this year, I teach math and The Thinking Maps®; workshops focused very little on helpful ways to use it for math.
- I'm retiring this June; students loved Thinking Maps®.
- I have used Thinking Maps® for Math also, and they were very helpful.
- All and all Thinking Maps® have been a big help, fun to do, and good way for me to assess my students on prior knowledge topics, etc. I really like Thinking Maps®.
- I used Thinking Maps® during my summer school teaching Science with 3rd graders. We used the Bubble and Circle Maps to reinforce our lessons. Each group of students presented a different facet of energy at the finale of our summer school. They used the enlarged Bubble/Circle Map as a guide to assist in their oral presentations. They were very motivated to create each map and it assisted in comprehension, retention, and oral expression.
- This is my first year in doing elementary; have always in the middle and doing Thinking Maps® more in the middle school.
- I would like more training or a refresher in Thinking Maps® usage.
- Is Thinking Maps® Training opened up to General Ed. ELA staff?

- Library set up, but no librarian over it. Self serve library; students are empowered to be more independent to use Thinking Maps® towards reading and it generates more interest.
- I think Thinking Maps® is an excellent concept to organize the student's thoughts. They absolutely love using them. It has helped them with their writing skills. They got tired of the usual webs (picture example). Thinking Maps® allows them to be creative. Thank you.
- I enjoyed the classes, I see my students using Thinking Maps® on the test when they need to recall the information to create sufficient paragraphs.
- Thinking Maps® not only benefit my students directly, but also indirectly. I found that my students who have the greatest comprehension deficits are best served by the use of Thinking Maps® because it increases the number of modalities used in the lesson. They are able to see the connections within a concept linked sequentially in an organized manner. They are able to utilize movement, oral participation as group, independent and peer responses. Very often these students can not accurately make these connections with other notetaking, auditory or strictly visual formats.
- My comments are directed toward Thinking Maps® as a whole I enjoy. It helps my students break down the content into simple phrases or words. My students are learning to describe in terms related to the content. They help with sequencing and naming. For my lower skilled children, I used clipart and they loved it. Recalling information improved tremendously.
- Thinking Maps® are an excellent strategy to use with all students who have difficulty organizing information/facts/ prior knowledge. Students are able to organize their writing skills and even math facts.
- I was not made aware of further Thinking Map® training sessions
- The training for me was for the exposure to the concept.
- The value of the T.M. approach is specifically of thought pattern to task. It's brilliant. Critical thinking cannot be taught by rote – as “we” have come to do in reading skills; it has to be modeled. For teachers and sadly there are many-who

are not critical thinkers themselves, learning T.M. increases their own ability/skill to practice critical thinking as a way of life. Now that teaches!! It provides the same service for the students who have never had critical thinking modeled in their home/community. It gives them a life skill necessary to success in jobs at any economic level, and in relationships in both the workplace and home.

- I use Thinking Maps® with my graduate students at the university where I am adjunct faculty. The maps have encouraged my students to develop a higher level of thinking with respect to application and evaluation. Because of the maps my students have consistently demonstrated an increase of critical thinking ability. Written assignments are more focused and meaningful. Thinking Maps® have also increased my thinking skills as an instructor.
- Thinking Maps® help us to help our adult learners process and synthesize knowledge of theory and practice at their level and they can go back to their school to apply with their students at their students' levels
- Did some training with teachers on all grade levels. They were very receptive to the Thinking Maps® Program. Many of them utilized the program within the classroom with a lot of success.
- The Bubble Map was really great for increasing student decoding/comprehension skills in both biology and algebraic thinking. The Bridge Map utilized specifically for the purposes of new concept introduction and accessing prior knowledge which motivated and stimulated many discussions, both formal and informal. These discussions in my opinion facilitated the students' ability to make the real-life transformation between school and home.
- I use them for staff development approximately 12 times
- I am a Thinking Maps® Trainer (Adrienne Battistone was my trainer for the Trainer of Trainers
- Thinking Maps® is a great visual tool. My K's help make Circle Maps, we use Flow Maps for sequencing a story and sometimes we compare stories with a map. I do not use it weekly, but maybe bi-weekly or monthly. Should use more across the grades and content areas.
- I would love to use Thinking Maps® if time would permit.

- I also used some for math. They seem to help students with learning disabilities organize their thoughts.
- improved students' Higher Lesson/Unit Assessment scores (mathematics)
improved ability to access prior knowledge (& problem solving)
- Excellent tool to teach students how to follow written instructions
- Just a general comment-This concept of Thinking Maps® should be implemented district wide all grade levels. When my kids go to first grade, they continue with the maps and do well. Neither of the 2nd grade teachers use Thinking Maps® and the students lose some of the skills necessary to do well in 3rd grade.
- I am the Mathematics Teacher for 5th grade
- Occasionally with students; occasionally with staff – professional development

APPENDIX S

SAMPLES OF THINKING MAPS

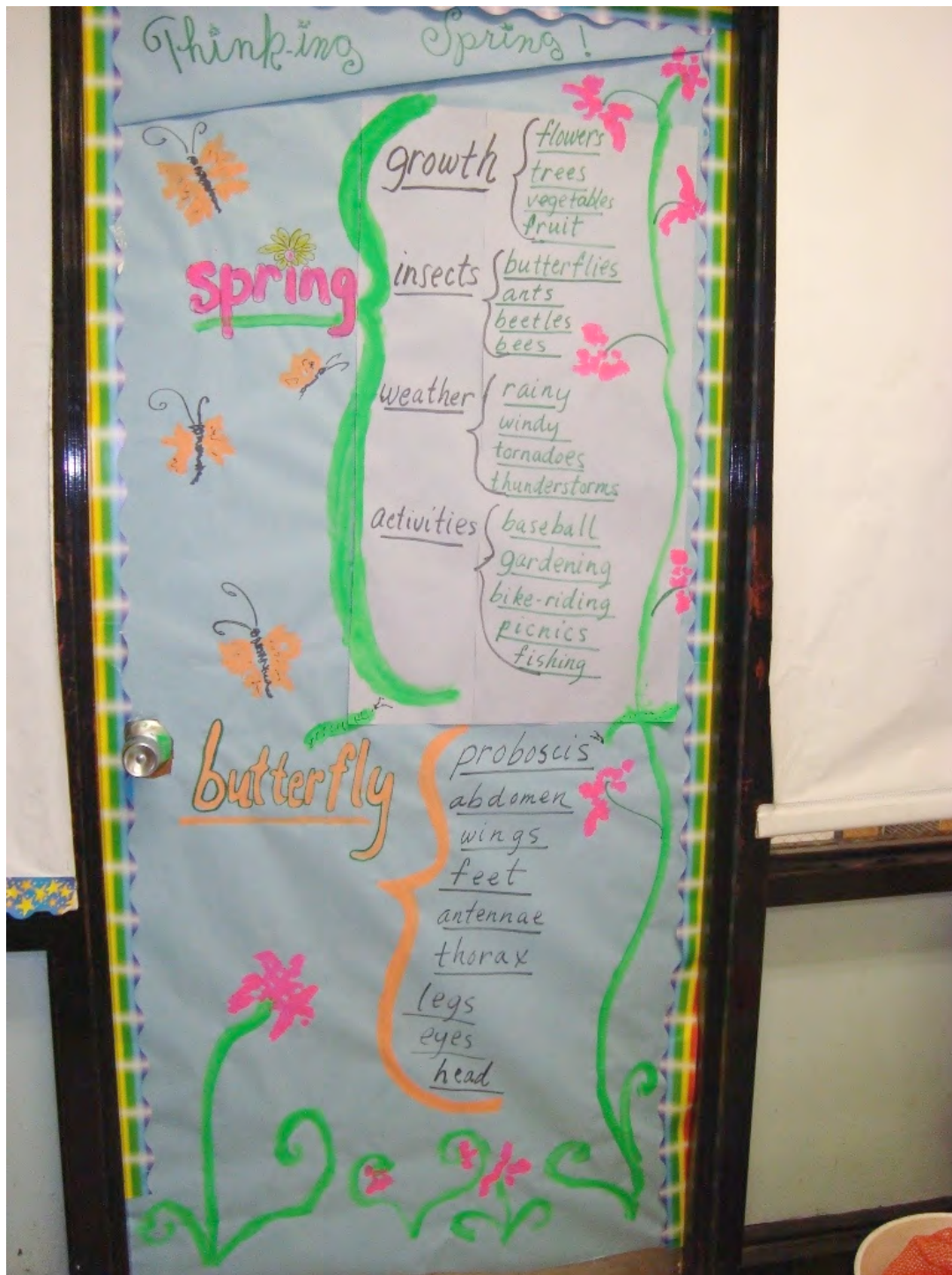


Figure S1. Brace Map developed by Mrs. Jones and displayed on her classroom door.

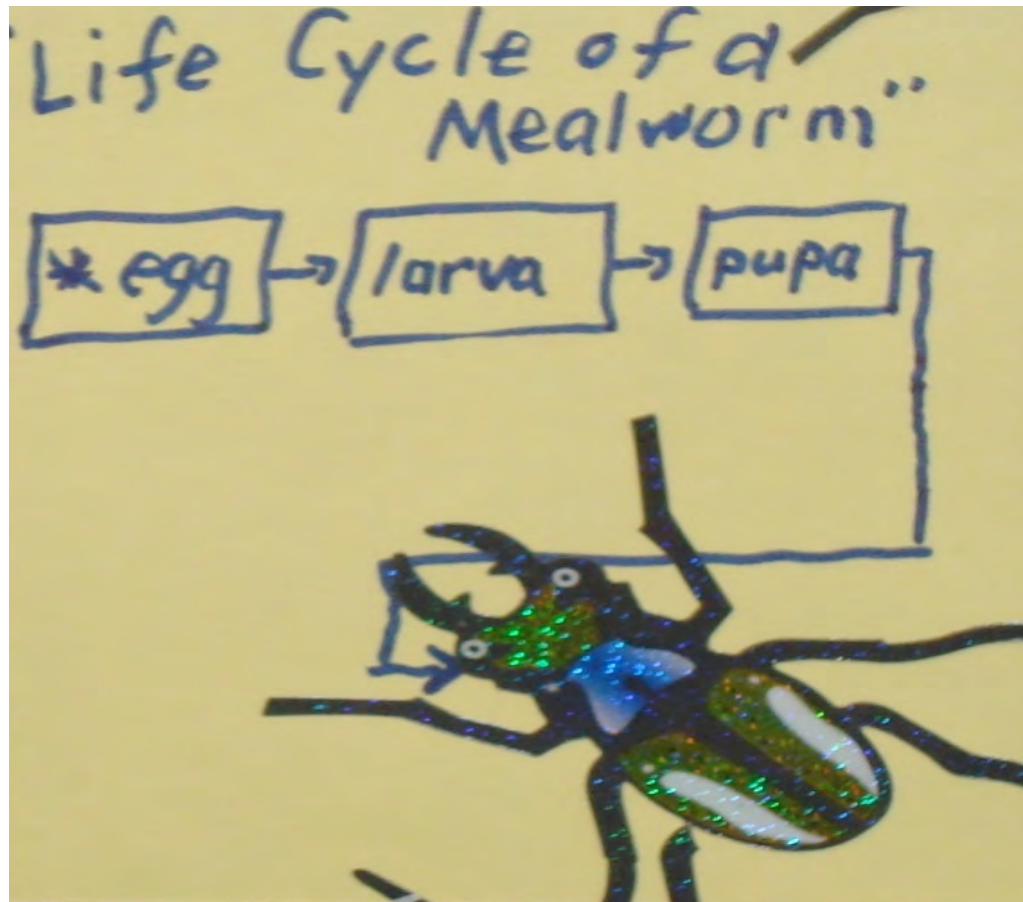


Figure S2. Flow Map life cycle of a mealworm on wall near Mrs. Jones classroom.



Figure S4. Reading Genre Bulletin Board – Mrs. Jones second grade classroom.



Figure S5. Flow Map in a composition book on how fossils were discovered.

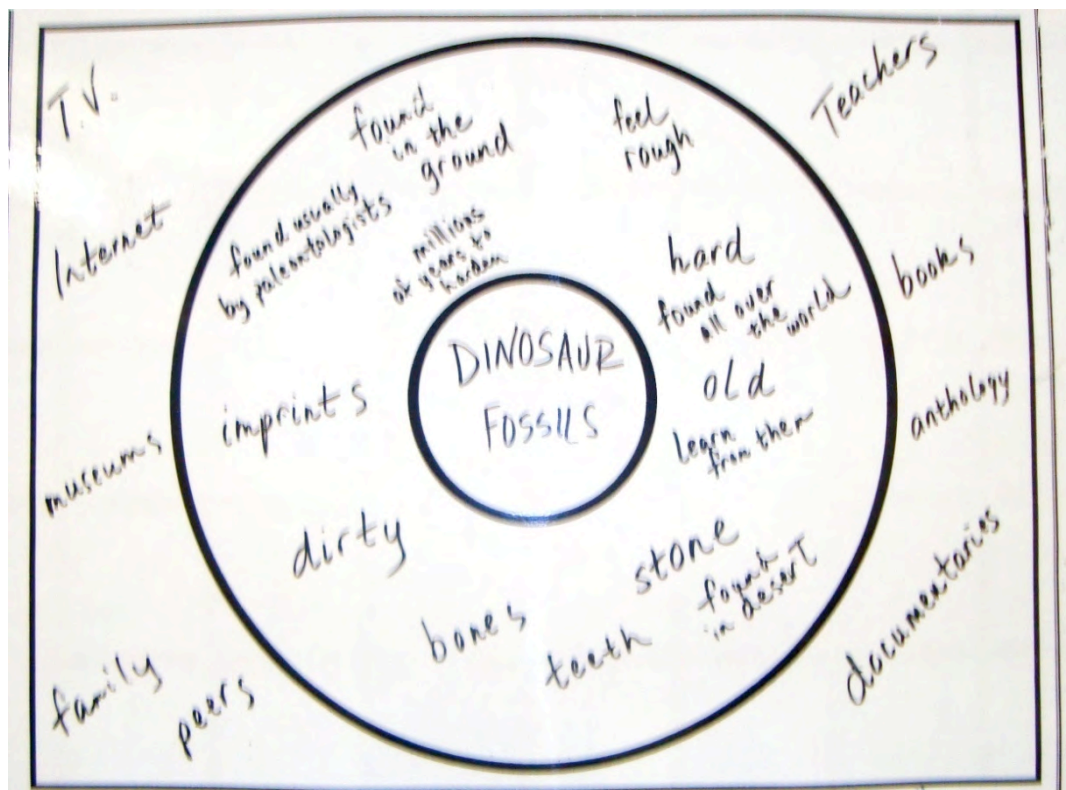


Figure S6. Circle Map developed by second graders and recorded by Mrs. Jones.

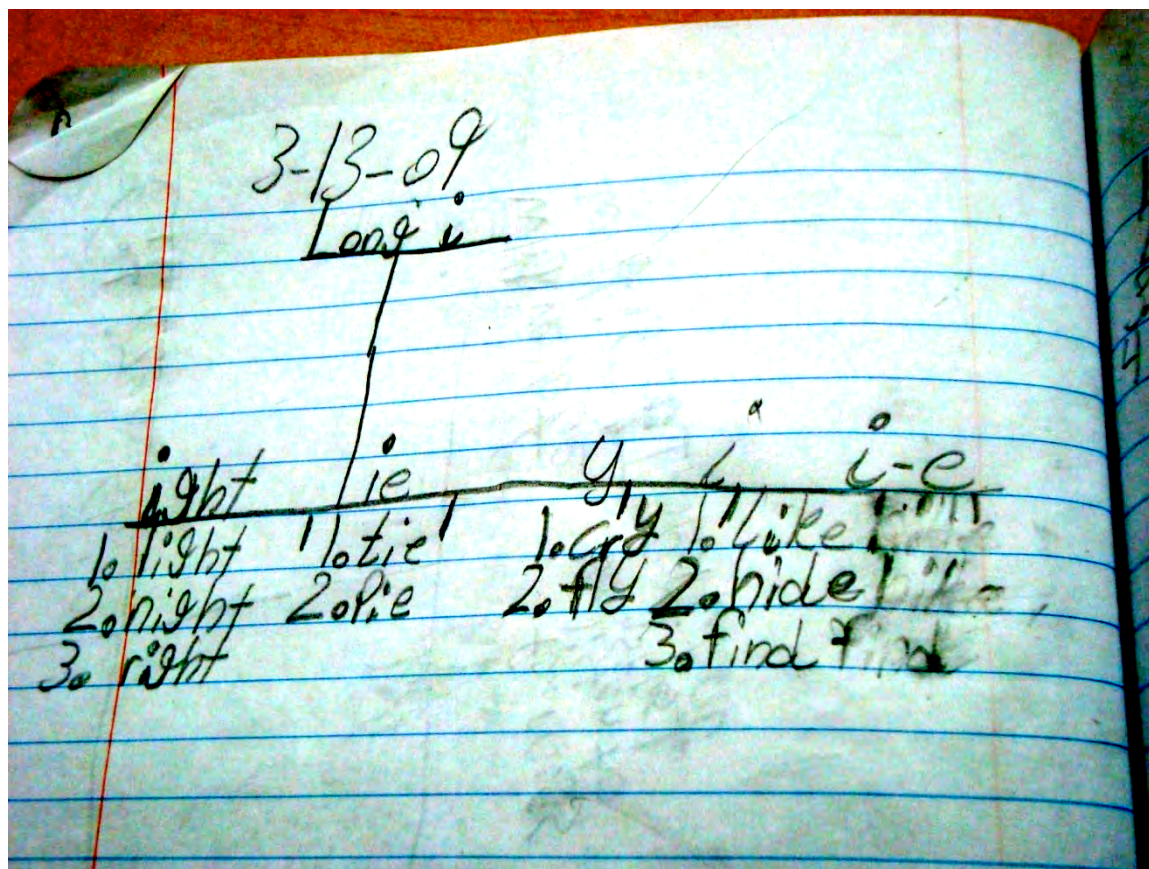


Figure S10. Tree Map on spelling patterns from lesson in *Open Court Reading*.



Figure S11. Vocabulary word introduced using a Circle Map in *Open Court* Unit on *Fossils*.

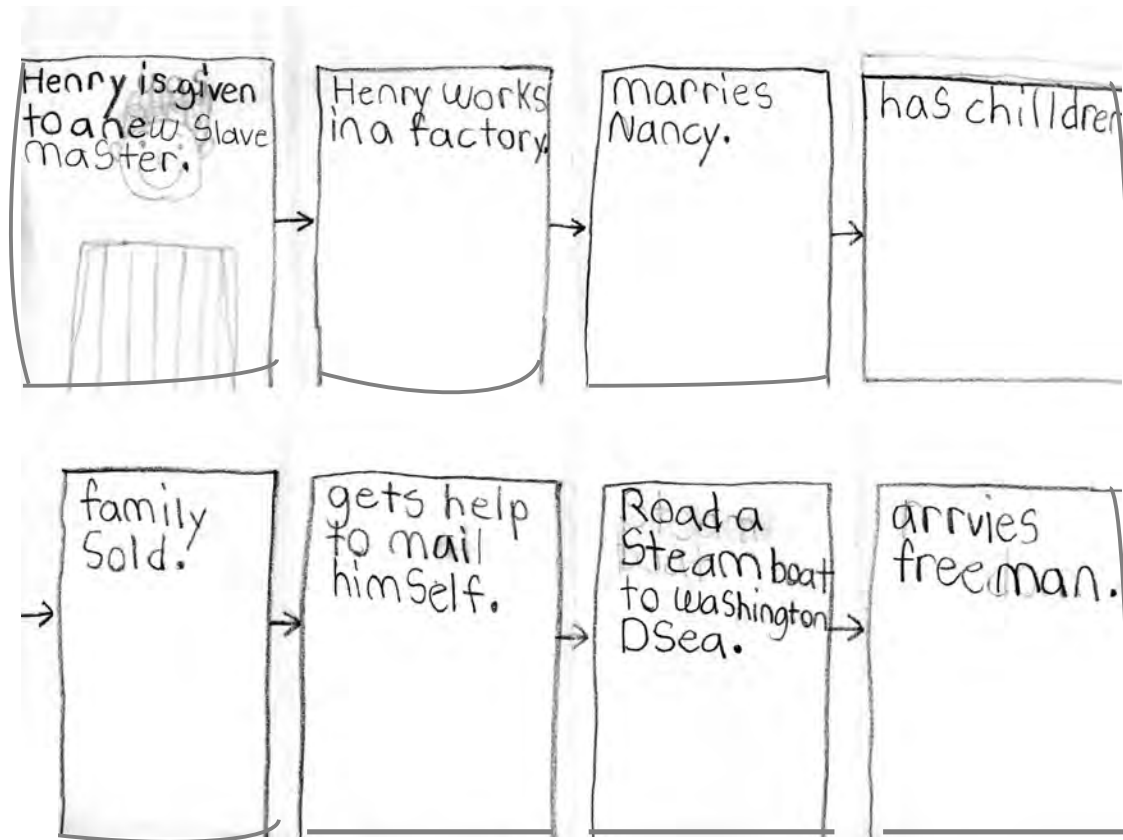


Figure S13. Flow Map by Second Grade Boy: Sequence of Events in *Henry's Freedom Box*.

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Figure S15. Flow Maps from *Open Court Reading* posted outside of Mrs. Rosenberg's classroom.

Name: _____

Date: _____

VOCABULARY CIRCLE MAP

The diagram is a circle divided into four quadrants by a vertical and a horizontal line. The center of the circle contains the word "unconscious".

- Top-right quadrant (DEFINITION):** "without physical or mental awareness"
- Top-left quadrant (ILLUSTRATION):** A drawing of a person lying down, possibly asleep or unconscious.
- Bottom-left quadrant (CONTEXT):** "I was unconscious"
- Bottom-right quadrant (ANTONYM):** "conscious"
- Bottom center (SYNONYM):** "(motionless)"

Story: The Big Wave

Unit: Survival 4.4

VOCABULARY CIRCLE MAP

The diagram is a circle divided into four quadrants by a vertical and a horizontal line. The center of the circle contains the word "sorrowfully".

- Top-right quadrant (DEFINITION):** "Full of grief or sadness"
- Top-left quadrant (ILLUSTRATION):** A drawing of a person standing with their head down, looking sad.
- Bottom-left quadrant (CONTEXT):** "I was sad and sorrowful"
- Bottom-right quadrant (ANTONYM):** "joyful"
- Bottom center (SYNONYM):** "miserable"

Figure S17. Circle Maps by a fourth grade boy on vocabulary words in *Open Court* Reading.

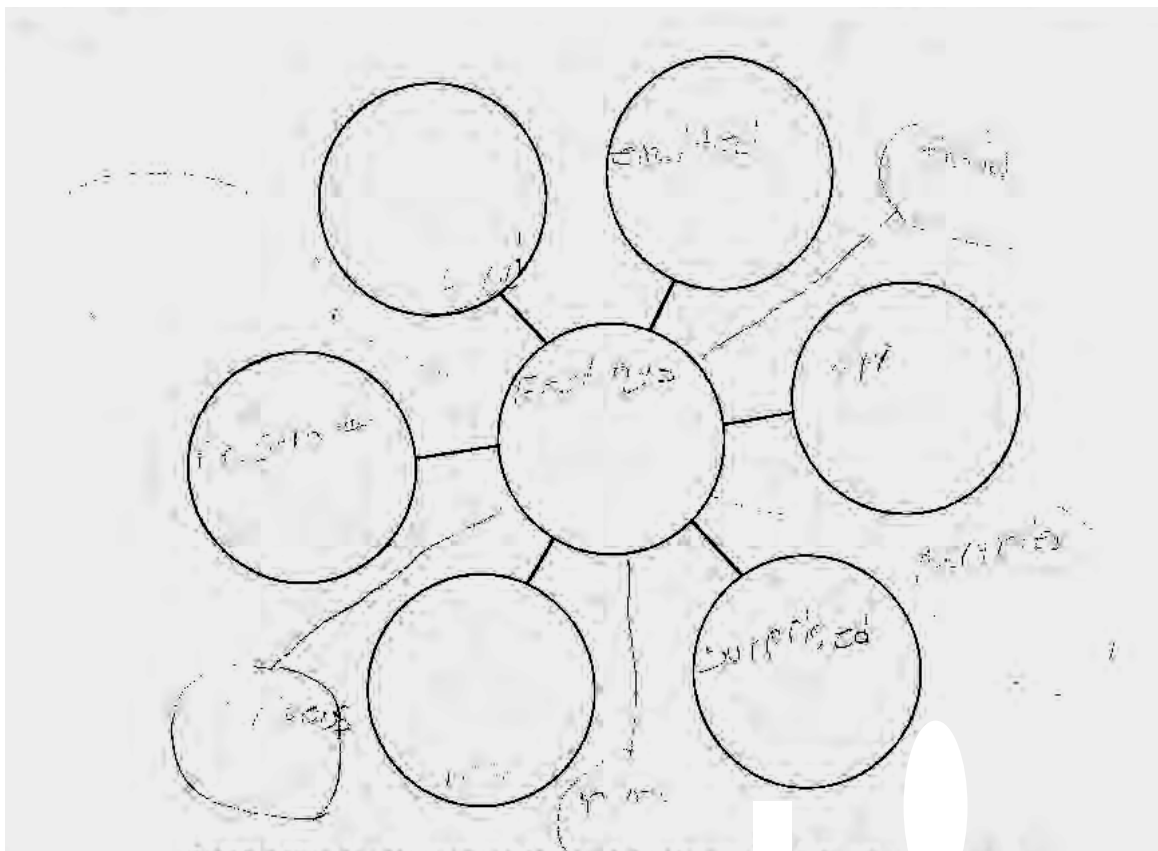


Figure S19. Bubble Map created by an 11-year-old learning disabled boy.

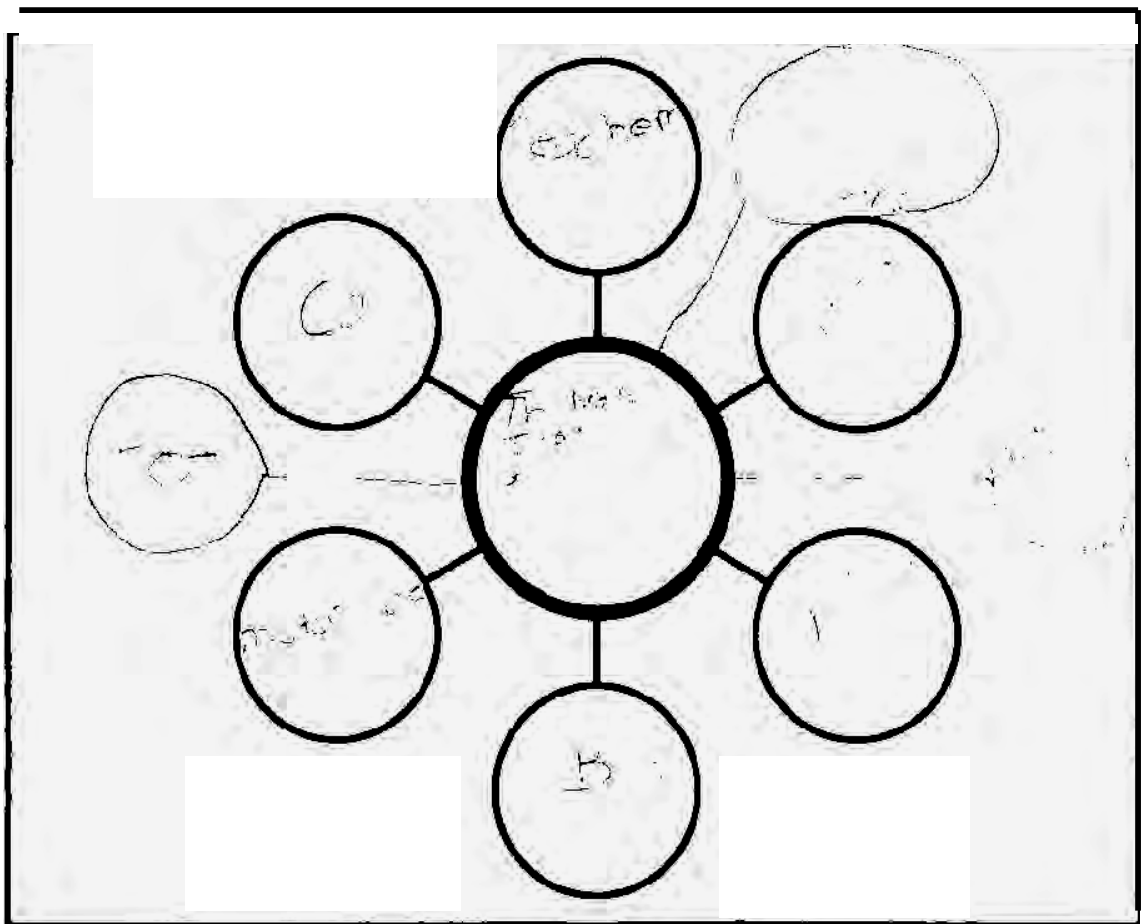


Figure S20. Bubble Map to correlate with *Open Court Unit Things That Go* by learning disabled boy.

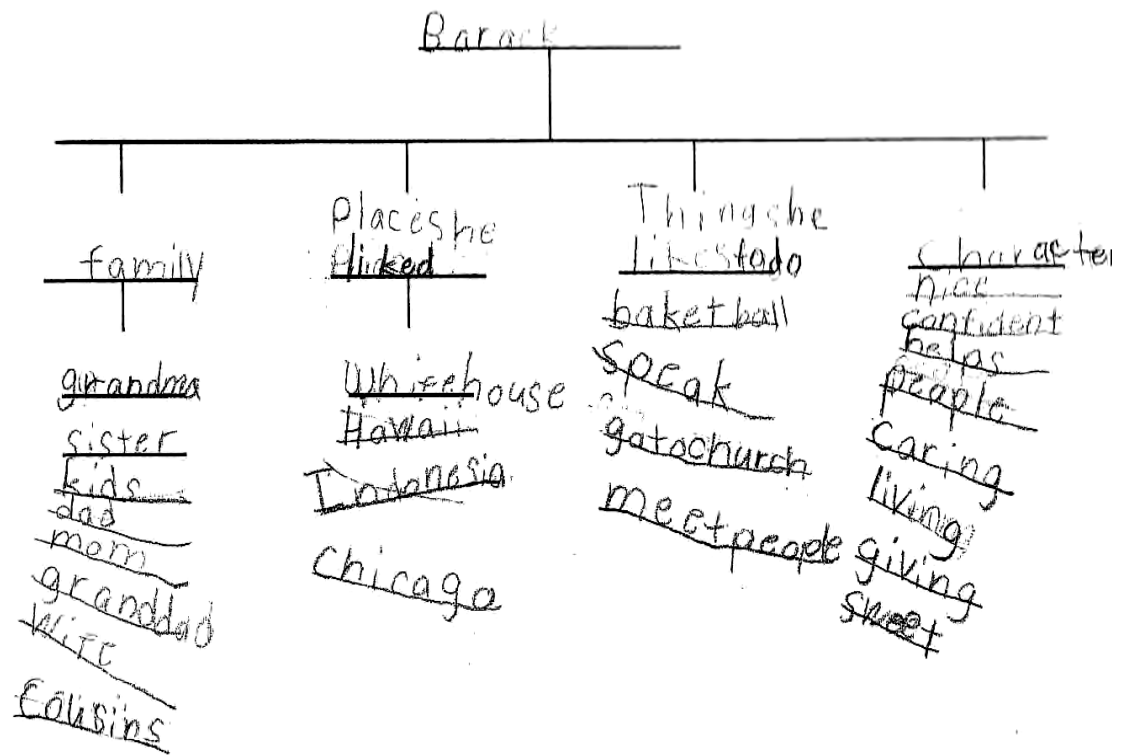


Figure S21. Tree Map developed by nine-year-old learning disabled boy classifying details from story *Barack*.

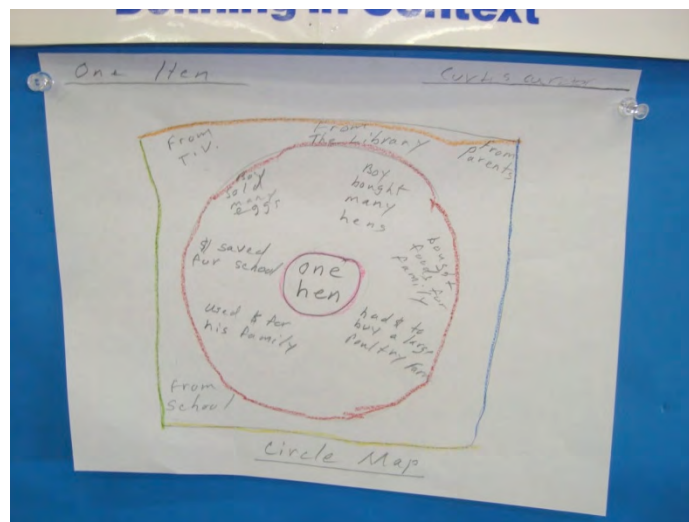


Figure S22. Bulletin Board in Mrs. Smith's classroom.

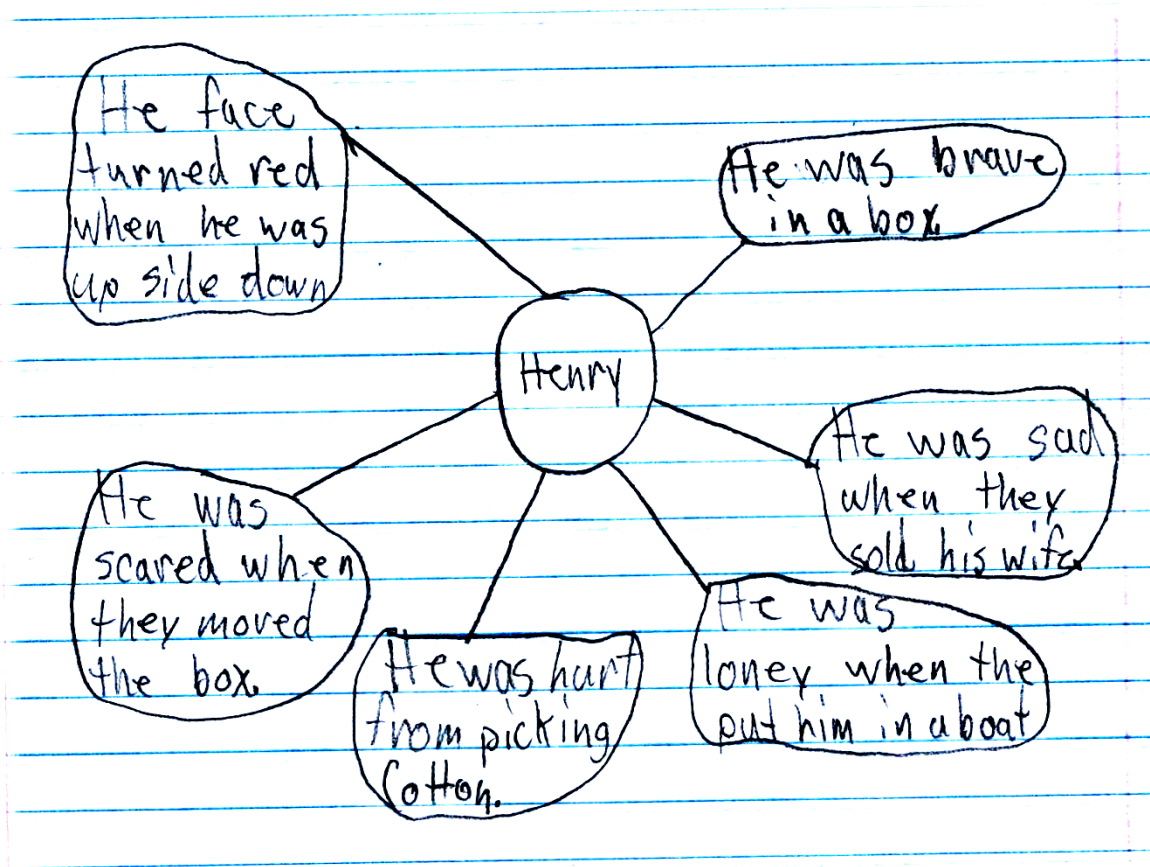


Figure S23. Bubble Map by a fourth grade boy on the main character Henry in *Henry's Freedom Box*.

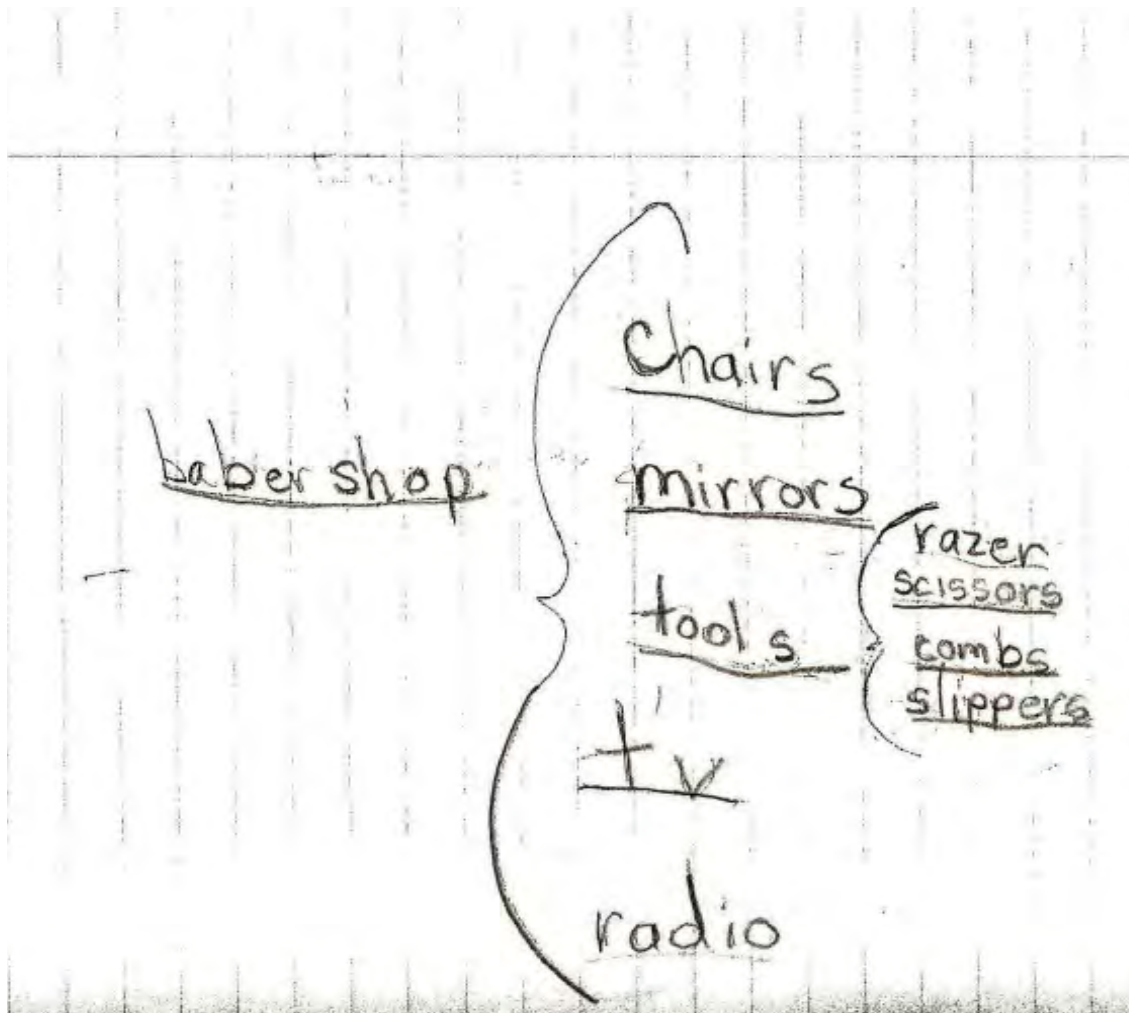


Figure 24. Brace Map by a second grade boy on the setting in *Bippity Bop Barbershop*.

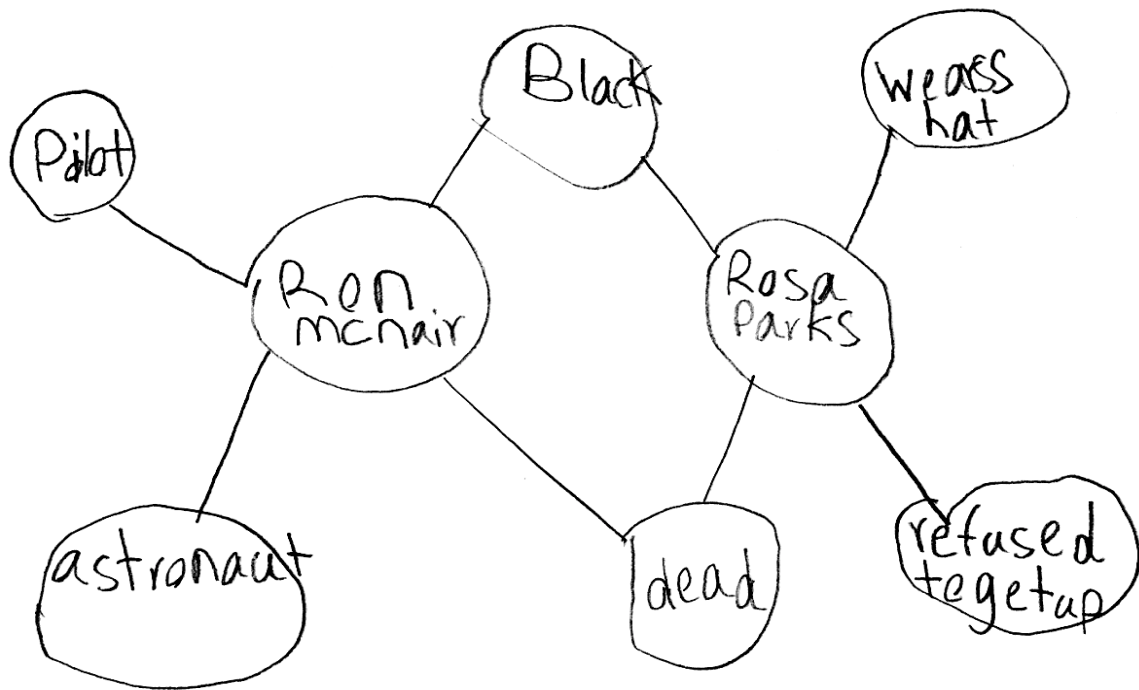


Figure S25. Juan's Double Bubble Map from the story *Ron's Big Mission*.

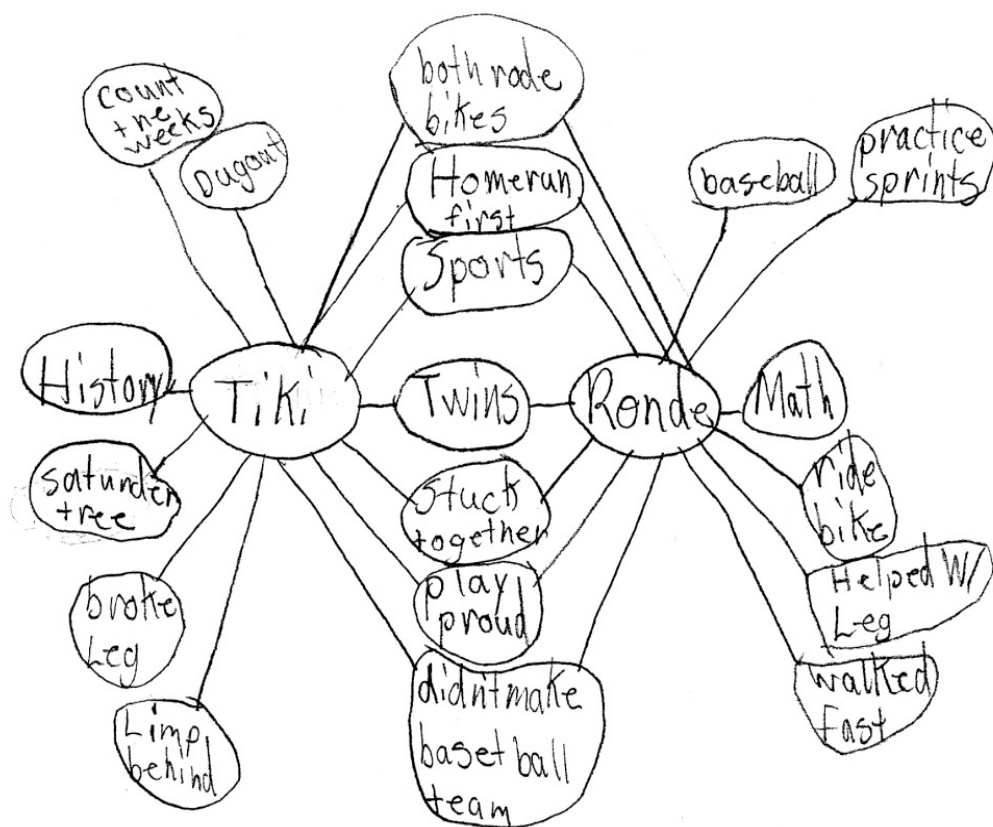
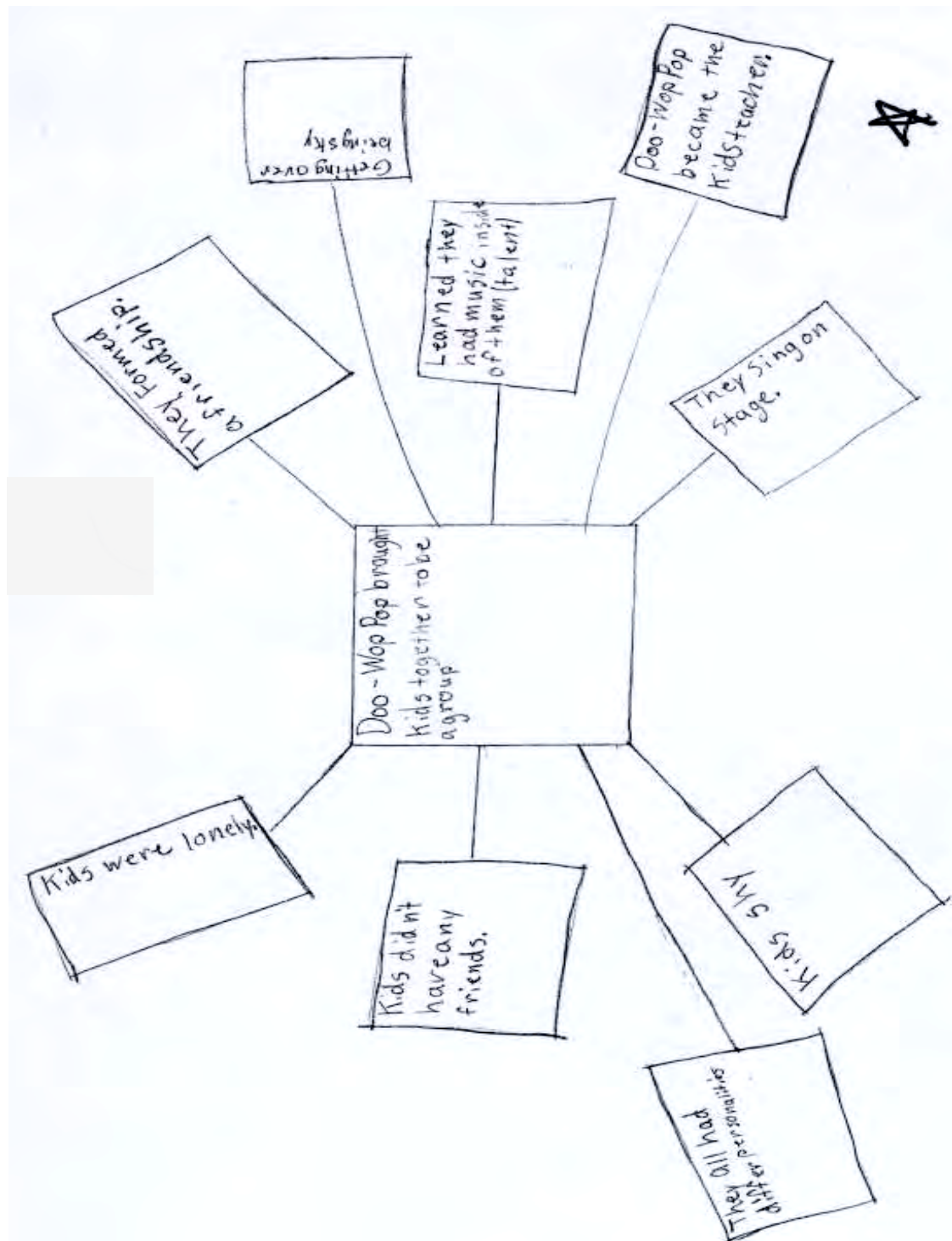


Figure S26. Double Bubble Map by fourth grade boy comparing twins Ronde and Tiki Barber from the story *By My Brother's Side*.



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