A project developed processes for improving the reading comprehension of third- and fourth-grade students in two progressive suburban communities in northern Illinois. Analysis of probable cause data revealed that students lacked knowledge of reading strategies and a review of the district’s general curriculum and textbooks revealed systematic reading instruction is not implemented after grade 2. Solution strategies, combined with an analysis of the problem setting, resulted in the selection of three categories of intervention: (1) development of activities for students at a prereading stage of instruction; (2) implementation of reading strategies during reading; and (3) contemplation and reflections after reading. All of these occurred through curricular modifications and changes in teaching practices. Prereading activities included story impressions, anticipation guide, semantic mapping and feature analysis, and vocabulary activities. During reading strategies included Directed Reading Thinking Activities (DRTA), jigsaw, Generating Interactions between Schemata and Text (GIST), ReQuest, semantic mapping, and a variety of graphic organizers. Over the course of the research time frame of October 1995 to January 1996, the more students participated in direct reading instruction, the more strategies they used while reading independently, the more interest and understanding of new and unusual vocabulary was increased. Results from post-intervention data indicated that the use of the strategies was effective in improving the reading comprehension of the targeted students. Findings suggest that the implementation of the activities dramatically increased the reading comprehension of the below grade level students. (Contains 12 figures of data and 43 references; 11 sample forms are appended.) (Author/CR)
IMPROVING READING COMPREHENSION OF
THIRD AND FOURTH GRADE STUDENTS
by
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Submitted in partial fulfillment of the requirements for the
degree of Master's of Arts in Teaching and Leadership

Saint Xavier University & IRI/Skylight
Field-Based Master's Program

Action Research Project
Site: Geneva, Illinois
Submitted: May 2, 1996

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Abstract

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DATE: May 2, 1996

TITLE: Improving Reading Comprehension of Third and Fourth Grade Students

ABSTRACT: This report describes processes for improving the reading comprehension of third and fourth grade students in two progressive suburban communities in Northern Illinois. The problem was originally noted by an increase in readers with inadequately developed reading comprehension and low standardized test scores.

Analysis of probable cause data revealed that students lacked knowledge of reading strategies. In addition, a review of the districts’ general curriculum and textbooks revealed systematic reading instruction is not implemented after second grade.

Solution strategies suggested by knowledgeable others, combined with an analysis of the problem setting, resulted in the selection of three categories of intervention: development of activities for students at a prereading stage of instruction; implementation of reading strategies during reading; and, contemplation and reflections after reading. All strategic solutions occurred through curricular modifications and changes in teaching practices.

Post intervention data indicated that the use of the strategies were effective in improving the reading comprehension of the targeted third and fourth grade students. The researchers found the implementation of the activities to dramatically increase the reading comprehension of the below grade level students.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Abstract</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Problem Statement and Community Background</td>
</tr>
<tr>
<td></td>
<td>General Statement of Problem</td>
</tr>
<tr>
<td></td>
<td>Immediate Problem Setting (Site One)</td>
</tr>
<tr>
<td></td>
<td>Surrounding Community (Site One)</td>
</tr>
<tr>
<td></td>
<td>Immediate Problem Setting (Site Two)</td>
</tr>
<tr>
<td></td>
<td>Immediate Problem Setting (Site Three)</td>
</tr>
<tr>
<td></td>
<td>The Surrounding Community (Site Two and Three)</td>
</tr>
<tr>
<td></td>
<td>Regional and National Context of Problem</td>
</tr>
<tr>
<td>2</td>
<td>Problem Evidence and Probable Cause</td>
</tr>
<tr>
<td></td>
<td>Problem Evidence</td>
</tr>
<tr>
<td></td>
<td>Probable Causes</td>
</tr>
<tr>
<td>3</td>
<td>Solution Strategy</td>
</tr>
<tr>
<td></td>
<td>Review of the Literature</td>
</tr>
<tr>
<td></td>
<td>Prereading Strategies</td>
</tr>
<tr>
<td></td>
<td>During Reading Strategies</td>
</tr>
</tbody>
</table>
Appendix J - Redefining Comprehension

Appendix K - Reading Comprehension Assessment
General Statement of Problem
The students of the targeted third and fourth grade classes show evidence of inadequately developing reading comprehension which interferes with academic growth. Evidence for the existence of the problem includes anecdotal records, standardized test scores, observation checklists, and case studies.

Immediate Problem Setting (Site One)
Site One is a non-denominational private school in northern Illinois. The elementary school serves grades Kindergarten through sixth and has a population of 385 students with 29 full and part-time staff members. There is one principal who is responsible for curriculum supervision, staff development, assessment, building and ground maintenance, public relations, and discipline problems. The staff consists of 22 certified teachers, 21 women and 1 man, none of whom are minorities. Of the 22 staff members, 18 are regular classroom teachers with an average teaching experience of 8 years. Eleven percent of these teachers have earned a Master's Degree (personal communication from principal at Site One).

The classroom teacher is responsible for an accelerated academic program. The curriculum focuses on arithmetic, language, reading,
penmanship, science, health, and history. A separate Bible curriculum is used consistently throughout the elementary grades. The school’s students receive 75 minutes of physical education and 75 minutes of music education each week. The school consists of four sections of Kindergarten and two sections each of first grade, second grade, third grade, fourth grade, fifth grade, and sixth grade. The average class size is 24 students (personal communication from principal at Site One).

The racial/ethnic enrollment is 76 percent White, 13 percent Black, 3 percent Hispanic, 1 percent Asian/Pacific Islander, and 7 percent other ethnic groups. These students come from a variety of socioeconomic backgrounds. The tuition at Site One is $2,645 per year. The school offers 40 to 50 scholarships to students each year depending on individual financial need. The scholarships given total nearly $50,000. There is two percent student mobility and no chronic truancy (personal communication from principal at Site One).

Parents give support through extra curricular activities including monthly Market Days, volunteer programs, classroom incentive parties, scouting programs, and reading incentive programs.

The Surrounding Community (Site One)

Site One is located on the west side of a growing suburban city in Illinois. It is 45 miles west of a major metropolitan area in the mid-west.

According to a city census, the population is 99,600 people, with the average household income of $40,228 with the median home value at $79,374. The racial/ethnic population is 74 percent White, 12 percent Black, 1 percent
Asian/Pacific Islander, and 13 percent other races.

Immediate Problem Setting (Site Two)

Site Two is part of a community unit school district in a small town in the mid-west and is one of three elementary schools in the public school district serving grades Kindergarten through fifth. The school population consists of 298 students and 23 full and part-time staff members. The racial/ethnic enrollment is 96 percent White, 0 percent Black, 1 percent Hispanic, 3 percent Asian/Pacific Islander, and 0 percent Native American. Students of Limited-English-Proficiency make up 0.7 percent of the school population. Low income students comprise 3.4 percent of the school population (School Report Card, 1994).

One principal is responsible for overseeing the curriculum, assessment, building and ground maintenance. She is also an ambassador to parents and the community and has the final authority with discipline problems.

The faculty consists of 18 certified teachers, 17 women and 1 man. There are no minority teachers. There is a part-time nurse, one Learning Disabilities Resource teacher, and three special area teachers. Of the 18 faculty members, 12 are regular classroom teachers with an average teaching experience of 13.9 years. Fifty-five percent of the regular classroom teachers have earned Master’s degrees (School Report Card, 1994).

The classroom teachers are responsible for a comprehensive curricula which includes accelerated programs, general programs, and modified inclusion programs. The academic curricula include integrated language, hands-on science, mathematics, social studies, computer education, health, and teacher developed curriculum. Students receive weekly instruction from specialized teachers in three areas: one hour of music, forty minutes of art, and
one hour of physical education.

Site Two is a three story brick building which has recently been remodeled. It consists of two sections of Kindergarten, three sections of first grade, two sections each of second, third, fourth, and fifth grades. The average class size is 23.2 students. Attendance is 96.2 percent and there are no chronic truants (School Report Card, 1994).

Parents are very supportive of the school and the teachers. The parents and/or guardians of 100 percent of the students make at least 1 contact with the student's teacher during the school year. They give support to the school through many extra curricular activities including after school enrichment, Book Fair, Fun Fair, monthly Market Days, skating parties, Great Books, Pirate Publishing, volunteer programs, scouting programs, clothing sales, and reading incentive programs.

Immediate Problem Setting (Site Three)

Site Three is part of a community unit school district in a small town in the midwest and is one of three elementary schools in the district serving grades Kindergarten through fifth. The school population is made up of 533 students and 42 full and part-time staff members. One principal oversees the curriculum, assessment, teacher evaluations, and building and ground maintenance. He also acts as the parent and community liaison and has the final authority with discipline issues. A part-time assistant principal takes responsibility for problems directly involving student academics and behavior. The faculty consists of 25 certified teachers, 23 women and 2 men, none of whom are minorities. Of the 25 faculty members, 19 are general classroom teachers with an average teaching experience of 14 years. Fifty-six percent of the regular classroom teachers have earned Master's degrees and four percent are actively
pursuing degrees at the post graduate level (School Report Card, 1994).

Classroom teachers are responsible for a comprehensive curriculum which includes general programs, accelerated programs, and modified inclusion programs. The academic curricula include: integrated, literature-based language arts; hands-on science; mathematics; social studies; computer education; and health. In addition, students receive one hour of music, forty minutes of art and one hour of physical education instruction from teachers with certifications in these specific areas.

Within this single story brick building, four sections of each grade level, Kindergarten through fifth, exist. During the 29 years of this school's history, the average class size has increased from 18 students to the present average of 29 students (School Report Card, 1994).

According to the community school district's (1994) report card, the enrollment consists of 96.8 percent White, 0.6 percent Black, 0.8 percent Hispanic, 1.8 percent Asian/Pacific Islander, and 0.0 percent Native American. Only 0.1 percent of the students are eligible for bilingual education. Similarly, 0.3 percent of the population receive public aid based on economic status.

Parental support is demonstrated through parent/teacher conferences and extra curricular activities including Breakfast with Books, after school enrichment, Fun Fair, monthly skating parties, Junior Great Books, and reading incentive programs. Financially, parents support the school with fund raisers such as an annual Book Fair, semi-annual clothing sales and monthly Market Days.

The Surrounding Community (Site Two and Three)

Sites Two and Three are located on the west side of a small city in the mid-west. It is a growing upper-middle class community approximately 40 miles
west of a major metropolitan area. Although the town is landlocked on the south, the north, and the east, there is an influx of population to the west. Economic indicators show much growth in housing, small businesses and industries.

According to the 1992 census, the population is 14,660. The average household income is $45,242 and median home value is $147,900. The racial/ethnic population is 96.6 percent White, 1.0 percent Black, 0.1 percent Native American, 0.9 percent Asian/Pacific, and 1.2 percent other races. The community school district has a total K-12 district enrollment of 3,461. There is one high school, one middle school, and three elementary schools. The district employs 396 people, 217 of whom are teachers. There is one superintendent and three assistant superintendents. The population forecast for the year 2010 is for 20,985 residents. In 1992 the community supported the development of a new middle school. In 1995 a referendum to add to the three existing elementary schools is being presented to the voters (Chamber of Commerce, 1992).

Regional and National Context of Problem

In 1969, the U.S. Commissioner of Education, James E. Allen Jr., declared "failure to acquire basic reading skills and a desire to read as being a barrier to success that for many young adults produces the misery of a life marked by poverty, unemployment, alienation, and in many cases crime." (Avery & Thorsen, 1972, pg.6-7). At that time, 4.3 million Americans were considered functionally illiterate (Avery and Thorsen, 1972). The number of Americans who can not read and write sufficiently has grown to more than twenty-three million (Project Literacy, 1987). It is the action researchers' supposition that students' inadequately developed reading comprehension
skills may be related to inappropriate reading instruction.

In a 1973 study Maffei found that students had not been exposed to the variety of reading skills deemed necessary for comprehension of subject material. Armbruster (1993) concluded that students are not receiving effective instruction in how to learn from reading materials that aide in the construction of deep understandings of richly connected knowledge.

According to Illinois Goal Assessment Program (IGAP) State Performance Standards, reading scores for third grade students from Site Two and Three show 26 percent not meeting state report card goals (School Report Card, 1994). The 1994 Stanford Achievement Test (SAT) scores from Site One students also show a deficiency in reading comprehension skills with a National average of 73 percent (School Newsletter, 1995). In each case, approximately 25 percent of students do not meet expectations for reading competence.

As districts continue to embrace the whole language philosophy, teachers are moving away from a view that reading is a set of isolated skills, and are now viewing reading as a process which conveys and recreates meaning. While teachers implement new methods of instruction, a concern about reading comprehension has been identified. At this time formal interventions, that blend methods and address the concern of inadequately developed reading comprehension, are not in use at the described sites.
Chapter 2
PROBLEM EVIDENCE AND PROBABLE CAUSE

Problem Evidence

In order to document the extent of reading comprehension problems, anecdotal records were kept over a three-week period. The record consisted of observation checklists and teacher journals. The Iowa Test of Basic Skills (ITBS) scores from Site Two and Three and the SAT scores from Site One were reviewed to confirm inadequately developed reading comprehension. The Gates-MacGinitie Reading Tests (MacGinitie, 1989) were also given during this time.

The results of the reading observation checklists (Appendix A) at Site One and Three show targeted students can recognize words in isolation but do not necessarily generate meaning from these words. This exercise does not lead to better discussion of the text nor does it improve sequencing skills. At Site Two, observations noted a lack of students that are able to compare and contrast or make judgments from a passage read independently. The teachers’ journals indicate targeted students at Site 3 are not successful in class discussions unless selected passages are read aloud. The notes from Site One show similar conclusions with added observation of students’ inability to respond to inferential questions. The teacher of Site Two noted students’ awareness of details within a text; however, students did not apply these details to support conclusions or judgments derived from the reading.
The ITBS reading comprehension scores of students from Site Two show that 37 percent of the students fall below the grade level. At the third grade level, students that scored 2.4 grade equivalency or less are considered below grade level reading ability. At the fourth grade level, students that scored 3.8 grade equivalency or less are considered below grade level reading ability. The scores of the same test at Site Three indicate that 43.5 percent of the students are below grade level. The SAT reading comprehension scores of students from Site One show that 58.3 percent of the students fall below the grade level. A summary of these results is presented in figure 1.

Figure 1

![Bar Chart]

Percentage of students with below grade level reading comprehension

SITE 1: 58.3%
SITE 2: 37.0%
SITE 3: 43.5%

Percentage of students with below grade level reading comprehension
During the last week of September the Gates-MacGinitie reading tests were administered at all three sites. The results supported previous test scores by indicating a significant number of students at all three sites with inadequately developed reading comprehension. The scores were converted to grade level equivalents so that fourth grade students scoring below third grade, eighth month (3.8) and third grade students scoring second grade, seventh month (2.7) or below were identified for the targeted group. The percentage of students identified at each site is represented in Figure 2.

Figure 2.

Gates-MacGinitie Test Results

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<tr>
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<tr>
<td>54.2%</td>
<td>26.9%</td>
<td>43.5%</td>
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</tbody>
</table>

Percentage of students identified for target group
Probable Causes

Literature suggests that a probable cause for inadequately developed reading comprehension is the lack of systematic direct instruction. According to Spiegel (1992), the emphasis on whole language has created a deemphasis of systematic direct instruction which has not met the needs of all readers. There are print-specific skills that need to be taught instead of leaving children on their own to discover them. Not all children naturally discover language conventions by themselves. According to Rosenshine and Stevens (1984), children with low aptitude or impoverished literacy backgrounds are not likely to figure out reading strategies by themselves. Research shows that effective reading programs have clearly defined objectives and teacher-directed instruction (Rosenshine & Stevens, 1984). Relying on the mini-lesson approach of seizing the moment to provide instruction when the need arises, can lead to a haphazard, incomplete literacy development (Baumann, 1991). Durkin (1978-79) feels that the “mentioning” that takes place in mini-lessons only provides enough information for the children to do the task at hand, not to actually learn a strategy to use at other times.

Another probable cause for poor reading comprehension is that some students lack reading strategies. Pearson and Fielding (1991) write that our lack of knowledge, until recently, to identify comprehension skills has made it difficult for teachers to help students with strategies. Comprehension is now viewed as a more complex process involving inferential and evaluative thinking. Even though making inferences is an important comprehension skill, in the 1985 National Assessment of Education Progress, only four out of five nine-year old children could make a satisfactory inference while reading. Strategies for making inferences are absent in inferential instruction research literature.
Many good readers discover reasoning processes to construct meaning from reading on their own. Herrmann (1988) thinks that poor readers do not construct their own meaning and need explicit instruction on how to be strategic while reading. There is evidence that little class time is spent on teaching such strategies. Durkin (1978-79) conducted classroom observations during reading lessons and found that of 17,997 minutes only 45 minutes were devoted to comprehension skill instruction.

There is a strong relationship between vocabulary knowledge and reading comprehension. Anderson and Freebody (1985), after an extensive review of research, state "word knowledge is a requisite for reading comprehension: people who do not know the meanings of words are most probably poor readers" (p.367). Therefore, a probable cause of poor reading comprehension is lack of vocabulary development.

According to a study by Achilles and Finn (1990), significant benefits of small class size were seen in reading and mathematics achievement. The study compared classes of 13 to 17 students with classes of 22 to 25 students. This research suggests that large class size directly effects inadequately developed reading skills by limiting teacher interaction with individual students during reading instruction.

Although large class size has been shown to have significant effects on the instructional strategies used by teachers, the size of the classes at all three sites is predetermined by enrollment which can not be changed by the teachers. Therefore, this cause can not be addressed by the teachers involved in this study. Likewise, the students behavior of choosing or not choosing previously taught reading strategies can not always be controlled or monitored by teachers. Similarly, students background experiences that develop language
can not be changed by a classroom teacher. Therefore, the probable cause that can be most affected by the teachers involved deals with the lack of systematic reading instruction. Specific techniques, strategies, and methods of reading instruction which have been identified through literature will be used at the three sites to determine if reading comprehension of the targeted students can be improved through systematic reading instruction.
Review of the Literature

After reviewing the literature concerning improving reading comprehension, the researchers noted that the strategies researched could be grouped into three main categories. They are prereading strategies, strategies to be used during reading, and post reading reflections. Therefore the following literature review is divided into these three sections.

Prereading Strategies

The prereading stage of a lesson is very important to comprehension. There are two basic kinds of prereading strategies; prediction strategies and vocabulary strategies.

Most literature states that activating a reader's prior knowledge before a reading selection improves comprehension. Making predictions and evaluating his predictions as he reads keeps the reader actively thinking about the story or ideas presented. Denner and McGinley (1987) developed a prereading writing activity called Story Impressions. In this approach the reader uses key concepts from a story to make predictions or impressions about what is going to be read. Students can also make their own questions prior to reading. The teacher supplies a list of key concepts or clue words. The class brainstorms how the ideas may be connected and a class story is developed. After reading the story,
the actual story and the class story are compared.

Another prereading strategy that activates prior knowledge about a topic is the Anticipation Guide. This use of prediction serves as a means to stimulate comprehension. As explained by Baum, Duffelmeyer, and Merkley (1987) the teacher generates statements about a topic. The reader then responds to them before reading the selection. The students can also be directed to the statements after reading for the purpose of evaluating their predictions or clarification of concepts. Agree/disagree statements are often used with this strategy. This strategy is very usable in the content areas. It not only serves to activate prior knowledge, but it helps to clear up or modify misconceptions about a topic. There can be some difficulty in constructing appropriate statements when using this strategy. The guide statements should be experience based and allow for higher level thinking, not just true or false type of statements.

Understanding textbooks, such as social studies or science books, can be very difficult for those who have little background information about the topic. Semantic mapping is a visual tool to help readers activate their prior knowledge. Antonacci (1991) explains the strategy as a procedure which is a knowledge map of conceptual relationships. A variety of webs can be used depending on the main categories to be mapped. Students think of ideas related to the topic. The teacher writes down all the responses. The responses are then categorized and labeled. This activity is often referred to as List-Group-Label. Relationships between the concepts are explored through questioning and discussion. This type of activity leads students to word ownership.

Research suggests that attention to vocabulary development can have a
positive impact on comprehension. The interventions that call for a deeper, more meaningful use of the words affects comprehension (Blachowicz & Lee, 1991). There are many suggested guidelines for vocabulary instruction. Thelen (1986) thinks that the vocabulary instruction must be meaningful and relate to the reader's prior knowledge. Also the learner must take an active part in the learning.

Semantic Associations is a brainstorming procedure that helps children to expand their vocabulary. The teacher presents words to the class. The students are asked to write down all the words that have something to do with that word. Johnson (1988) feels that the discussion that should follow is the crucial step in improving comprehension.

Semantic Feature Analysis is another procedure designed to expand vocabulary. This procedure involves completing a matrix with teacher selected categories or words. Learners systematically analyze words for features listed on the matrix. A plus or minus is used to indicate if features are present. Johnson, Toms-Bronowski, and Pittelman (1983) have shown the procedure to be effective with students specifically selected as to their reading ability. Anders and Bos (1986) state that reading disabled students who were taught with the semantic features strategy comprehended more vocabulary than those students who did not receive such instruction. Implementation of this strategy seems easy and fun. The categorization is more sophisticated than some students are used too, so it could be hard at first. There also could be some exceptions to some of the pluses and minuses.

Vocabulary games are effective ways to build vocabulary concepts. RIVET is a vocabulary introduction activity described by Cunningham (1995). It's an activity designed to activate prior knowledge and allows the readers to
make predictions before they read. Cunningham feels this should increase their involvement and comprehension. To prepare for RIVET the teacher picks six to eight words from the text including any important names. Lines are then drawn on the board indicating how many letters each word has. The teacher starts filling in the letters as the students guess what the word is. The students are "riveted" to each added letter in anticipation of figuring out the word. After the words are completed, the children use the words to predict some of the events in the story. When students are guessing the words, as letters are written, they are using phonetic clues to help decode the words. It also helps them think about the spelling of the words.

**During Reading Strategies**

To strengthen the effects of prereading strategies, other activities need to be continued while reading a passage. Five during reading strategies build upon the foundation laid by the prereading strategies.

Johnson, Johnson, Marvyama, Nelson, and Skon (1981) and Slavin (1983) have researched cooperative learning which is the basis of the during reading strategy called Jigsaw. This cooperative strategy encourages the students to become experts on a given piece of material and then teach it to their group members. The research has shown that students achieve at a greater level, feel more positive about the learning they are actively participating in, and have a strong self concept.

Cunningham (1982) has developed a during reading strategy called Generating Interactions between Schemata and Text (GIST). This strategy was developed to increase the abilities of students to comprehend the gist of paragraphs by giving "a prescription paragraph gist production." Cunningham believes the GIST strategy to engage a reader's previous knowledge and the
cues in the text as they are presented.

Richek (1983-1986) has researched Directed Reading Thinking Activities (DRTA) and found this strategy to help students to understand the text structure. DRTA encourages students to read part of a text, stop reading and predict future happenings, justify the predictions made, and continue reading to confirm their predictions. Students are active and independent participants in this reading process and have been found to have increased time spent in pleasure reading. DRTA creates an awareness of literacy devices, such as figurative language, foreshadowing, and mood and tone clues. Richek believes students will not only learn to develop meaning from the text with DRTA, but also turn their questions into predictions.

Manzo (1969) has created ReQuest to offer an alternative to Directed Reading Activity. This strategy is used with students who need help when engaged in above level literal thinking. ReQuest gives time for questioning vocabulary as the need arises from the students. The teacher is able to check for background knowledge of the students and enhance their knowledge where it is necessary during this strategy. Freedman and Reynolds (1980) promote semantic webbing as another alternative. This strategy gives purpose to reading, motivates readers, aids in developing prediction skills, and sets the purpose to begin reading. Gibbs, Howard, Tiedt, Timpson, and Williams (1989) believe this strategy encourages thinking about thinking, and thinking about reading. They have found that students develop cognitive abilities as they discover their thinking patterns and levels of thought. Spiegel (1981) has found both of these strategies to enhance Directed Reading Activities (DRA) through an adjustment of grade appropriate materials and individual academic needs.

Bromley, Irwin-DeVitis, and Modlo (1995) found that literacy learning
benefits from graphic organizers. This is done through purpose setting, focusing on specific information, and the development of reading concepts. Research confirms that graphic organizers emphasize key ideas through guided reading. Visual depictions help show organization and give a structure for recording newly located information.

After Reading Strategies

When students complete a passage, after reading strategies are suggested to check for understanding and confirm knowledge gained. Most of these strategies focus on the type of questions used to create reflections of the reading.

The post reading stage of a lesson is critical for checking for understanding and evaluating a topic under study. After reading students need to respond to their prereading and during reading assumptions (G. Courtney, personal communication, December 8, 1994). Reacting to their prior knowledge can offer opportunities for drawing conclusions and clarifying misunderstandings from previous predictions. Dishner, Readence, and Tierney (1995) suggest using the same steps to the Anticipation Guide strategy that are used as a prereading activity.

Generating charts and lists of words taken from a text can also be used as after reading lessons (Avery, 1993). Students will begin to classify word with similar patterns of spelling and meaning. This strategy creates a range of comparisons and references which students will use with future reading experiences.

Another strategy to develop comprehension after reading is GIST (Cunningham, 1982). This after reading strategy must be modeled so that students learn to transfer information from the text into a concise, accurate
summary. The procedure can lead to inaccurate conclusions if students only read brief segments of the text at a time. Dishner, Readence, and Tierney (1995) suggest modifying this approach by completing the entire passage before constructing the summary.

Avery (1993) encourages student sharing time after reading. In an effort not to dominate discussion with teacher talk, Avery allows students to guide the discussion which generates a diversity of responses and offers a time for teachers to assess what students perceive as important and meaningful. Although she describes this as enjoyable and easy to implement, one may question the efficiency and effectiveness of a discussion with no guidelines. Therefore, she suggests small groups with an adult modeling the behavior of a participant. This type of reflection can help students reach a clearer understanding of the content material read.

Pearson (1991) recommends a more formal, guided approach to questioning after reading. He offers four points to remember when asking questions. The first is to focus students' attention on important aspects of the text. Next, relate information in a text to the most appropriate set of background experiences. Another direction in questioning is to create a coherent framework for understanding and remembering. And finally, teachers need to allow students to practice cognitive skills that they ultimately will be able to use on their own. A key to the success of these questioning strategies is modeling the answers and providing appropriate graphic organizers that can be used in real life situations.

"The basic goals of reading are to enable children to gain an understanding of the world and of themselves, to develop appreciations and interests, to find solutions to their personal and group problems, and to develop
strategies by which they can become independent comprehenders" (Dishner, et al., 1995, 251). In regard to reading instruction, the strategies listed for prereading, during reading and post reading focus on the last of these four goals.

Project Outcomes and Solution Components

As a result of systematic direct instruction of specific reading strategies during September 1995 to January 1996, the third and fourth grade students of the targeted group will increase reading comprehension, as measured by structured observations, published tests, and case study descriptions.

Each site will integrate these strategies into several content areas. Site One will implement these strategies with the A Beka science (A Beka, 1990) and social studies (A Beka, 1990) texts, as well as the A Beka basal reading series (Cushman, Friebelle, & Leavell, 1964). Site Two and Three will conduct lessons using a literature based reading curriculum. Core books are selected by the district based on specific genre. The Houghton Mifflin social studies series is used at both Site Two and Three (Armento, Nash, Salter, & Wixson, 1991).

In order to accomplish the terminal objective, the following processes are necessary:

1. Collect and/or develop a series of mini-lessons for prereading.
2. Implement a series of activities for during reading.
3. Practice reflective thinking after reading.

Action Plan for the Intervention

I. Prereading

A. Purposes

1. to introduce strategies that activate and relate prior
knowledge to the literature read in class
2. to develop skills that can be integrated into content areas

B. Timing Schedules
1. eighteen week period
2. one prereading activity per day

C. Content/Activities
Teachers will select a variety of the following strategies to use within each week based on the lesson being taught
- Story Impressions
- Anticipation Guide (Appendix B)
- Semantic Mapping (Appendix C)
- Vocabulary Development and Strategies (Appendix D)

II. During reading
A. Purpose
1. to generate active participation in the reading process
2. to read with increased understanding of content
3. to construct meaning to increase reading comprehension

B. Timing/Schedules
1. eighteen week period
2. one during reading activity per day

C. Content/Activities
Teachers will select a variety of the following strategies to use within each week based on the lesson being taught
- Jigsaw
- DRTA (Directed Reading Thinking Activities) [Appendix E]
- GIST (Generating, Interaction, Schemata, and Text)
III. After reading

A. Purposes

1. to check for understanding of instructional content
2. to contemplate and reflect upon the content read
3. to apply and transfer content and skills to learning and real life situations

B. Timing/Schedule

1. eighteen week period
2. one after reading activity per day

C. Content/Activities

Teachers will select a variety of the following strategies to use within each week based on the lesson being taught
- Cluster questioning (Appendix H)
- Identification of Importance (Appendix I)
- Divergent Questioning
- Redefining Comprehension (Appendix J)
- Reciprocal Teaching
- QAR (Question, Answer, Response)
- Metacognition (Reading Comprehension Interview) [Appendix K]

Methods of Assessment

All three sites will use anecdotal records and checklists to monitor comprehension. Evidence of below grade level reading comprehension was found in the ITBS test scores at Site Two and Three and the SAT test scores at
Site One. Anecdotal notes along with pre and post tests will be used to
document the progress of these students. The Gates MacGinitie will be used at
all three sites to identify below grade level students and document growth at the
end of the study. The study will focus on the progress of students that are
identified in September as having below grade level reading comprehension.
Although the ITBS tests will be given to the students at Sites Two and Three at
the end of the assessment period, scores will not be available by the close of
this study. Likewise, the SAT scores gathered from Site One will not be
available.
Historical Description of Intervention

The terminal objective in this action plan addressed reading comprehension of third and fourth grade classes. As a result of systematic direct instruction of specific reading strategies during September 1995 to January 1996, the third and fourth grade students of the targeted group will increase reading comprehension, as measured by structured observations, published tests and anecdotal records. Research, standardized test scores and teacher observations (Appendix A) were instrumental in the development of the strategic procedures that would be used by the researchers to accomplish this objective. The implementation of prereading, during reading and post reading strategies were selected to effect the desired improvements.

Prereading Strategies

The first procedure was to introduce reading selections with prereading activities that activate the readers' prior knowledge. These include Story Impressions, Anticipation Guide (Appendix B), Semantic Mapping (Appendix C), Semantic Feature Analysis, and Vocabulary Activities (Appendix D). Originally, one prereading lesson a day was presented. These activities were based on specific strategies involving prediction and vocabulary development. Strategies were modeled and taught by the classroom teachers from the
beginning of October 1995 until January 1996. Three weeks into the intervention, the number of activities was decreased to two strategies per week. This change was made to accommodate the pace of the classes and the length of the literature studies within each group.

STORY IMPRESSIONS

Name
Write three questions or comments you have about this title: James and the Giant Peach.

1. Who is James and how old is he?
2. How big is the giant peach?
3. Does James eat the peach?

Figure 3
Predictions
Story Impressions

Story Impressions as a strategy focuses on students’ predictions based on newly introduced vocabulary, picture clues from illustrations, and key concepts from the text. Student responses were as brief as class discussions.
sharing simple questions about the story or as elaborate as developing a complete parallel story and comparing it to the actual story being read. For example, in Figure 3 the title of a book was introduced to the class. Students then wrote three questions or comments about the book that was to be read.

Name

What Do You Know About Insects?

Directions: After each of the following statements, write “True” or “False” in the “Before Reading” column. Compare your answers with a partner’s. After you have read the book, label the statements again in the “After Reading” column. Circle the numbers of the answers that changed.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>Before Reading</th>
<th>After Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A centipede has 100 legs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Farmers like ladybugs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Centipedes are considered “pests”—harmful to crops.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>You can tell a ladybug’s age by counting its spots.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Centipedes are full of bones, like a fish.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>A glow-worm is really a female butterfly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>A centipede has a sharp mouth.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Spiders are “pests.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>A silkworm can really spin silk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>A grasshopper makes music by rubbing its feelers together.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>A grasshopper’s ears are on its tummy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>An earthworm’s eyes are at the tip of its hind end.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Every grain of soil has passed through an earthworm’s body sometime in the past few years.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4

Agree/Disagree
Anticipation Guide
Figure 4 demonstrates student's knowledge of key concepts or vocabulary before an assigned reading. After reading the selection, the student was given an opportunity to evaluate the predictions or clarify concepts.

Figure 5
List - Group - Label
Semantic Mapping
As shown in Figure 5, List - Group - Label extends knowledge of vocabulary by displaying words in categories to show how the words are related. Students brainstormed words when cued with the word "pioneers." The teacher recorded words on the board. A word was accepted from each learner in the class. The class was divided into cooperative groups to sort the words into groups. After classifying all words, students decided on a label for the group that would describe the attributes of the words within a given group. Through discussion of the words and their meaning, students explored the relationships needed to gain a broader understanding of each word.

Fill in the chart using the following tribes: Kwakiutl, Navajo, and the Cheyenne.

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Region</th>
<th>Food</th>
<th>Clothing</th>
<th>Shelter</th>
<th>Ceremonies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kwakiutl</td>
<td>North-west U.S. and southwest Canada, near sea and mountains</td>
<td>salmon, seafood, berries, clams</td>
<td>cedar bark, mountain goat fur</td>
<td>longhouse, grass</td>
<td>totem pole raising, winter ceremonies</td>
</tr>
<tr>
<td>Navajo</td>
<td>In desert southwest U.S., Arizona, New Mexico</td>
<td>corn, berries</td>
<td>woven blankets, turquoise</td>
<td>Hogan</td>
<td>sandpainting</td>
</tr>
<tr>
<td>Cheyenne</td>
<td>The plains, middle of U.S., the prairie</td>
<td>buffalo, corn</td>
<td>buffalo skins</td>
<td>teepee</td>
<td>medicine men, buffalo dance</td>
</tr>
</tbody>
</table>

Figure 6

Native American Matrix
Semantic Feature Analysis
Comparing concepts and details of three Native American nations was simplified by using Semantic Feature Analysis as shown in Figure 6. Students completed a matrix provided by the teacher. The matrix included major categories of the Native American study: food, clothing, region, shelter, and ceremonies.

Figure 7
RIVET
Vocabulary Activities

Maybe the old peach tree will grow a mammoth, bulging peach and James will be inspecting the peach very cautiously. He will be sitting on the top of the massive peach and it will roll down the hill and roll out of the yard. James will shout, "Look! And say it was a miracle."
In a RIVET (Figure 7), the teacher of third grade students initiated the activity by making lines on the board indicating the number of letters in a vocabulary word. Then the teacher began writing the words one letter at a time. As students began to see patterns and make predictions they were encouraged to guess the word. After the words were identified, students were asked to predict events in the upcoming chapter.

**During Reading Strategies**

The second procedure followed the same implementation time as the first. The classroom teachers introduced “during reading” strategies once a day during reading instruction. “During reading” strategies included DRTA (Appendix E), Jigsaw, GIST, ReQuest, Semantic Mapping (Appendix F), and a variety of graphic organizers (Appendix G). Unlike the first procedure, these strategies continued daily throughout the intervention period. The strategies were integrated into content reading as well as structured reading lessons.
Figure 8

Details
During Reading Semantic Mapping

Earth is the 3rd planet
Earth has one moon
Only planet that has life
Earth has the most water
Earth is made of rock
Earth has air
During Reading Semantic Mapping creates a format for note taking and summarizing important details. Figure 8 illustrates a form used to list facts from the science book used in third grade.

GRAPHIC ORGANIZER: Fill in the missing parts (bones) of the web. One point each.

![Graphic Organizer]

Figure 9
Bones
Graphic Organizer

In fourth grade, as students read a chapter on the human body, they were asked to write the appropriate term for each limb shown on the graphic (Figure 9).
After Reading Strategies

In the third procedure, students participated in one post reading activity per day. Techniques used during this phase include Cluster Questioning (Appendix H), Identification of Importance (Appendix I), Divergent Questioning, Redefining Comprehension (Appendix J), Reciprocal Teaching, QAR and Reading Comprehension Interview (Appendix K). After two weeks, this procedure was decreased to twice a week to coincide with the completion of the reading selections.

Figure 10

Responses
Cluster Questioning

34
Cluster Questioning generates a discussion based on student responses to the previous question asked. In Figure 10, an artifact was created as students recorded an in-class discussion about Laura Ingalls and her father. The initial prompt from the teacher is printed at the top of the recording sheet. After the teacher read the prompt, students were encouraged to respond. Classmates recorded a common answer: "...because she would not sit still". Students were then required to ask a question about the previous response. "Why did she get in trouble for not sitting still?" was the most common question. Learners recorded the question and wrote their reason in the next space. The process continued until the recording sheet was complete.

![Image of the 5-W Model](image)

In the story James found a giant peach that grew in his aunts' backyard. He went in the peach and met some creatures. The peach rolled away and became their home. James was finally free from his aunts.

Figure 11

The 5-W Model
Identification of Importance

35
After students read an assigned passage in a novel, they were asked to complete the 5-W Model (Figure 11) with phrases or key words. Reviewing the text for details was encouraged for accuracy. Then, the chapter from *James and the Giant Peach*, by Roald Dahl (1961) was put aside. Finally, students wrote a paragraph summarizing the passage. Although third grade students were not allowed to return to the original passage, they could use the information they recorded at the top of their sheet and collaborate with teammates. In other classes, this format was used as an introductory activity to write a summary. The format provided details necessary for the students' first attempts of summary writing.

Presentation and Analysis of Project Results

The Gates-MacGinitie Reading Comprehension Test, given to third and fourth grade students in the fall, identified the percentage of students whose reading comprehension scores were below grade level. Figure 12 shows significant improvement in reading comprehension of third and fourth grade students after four months of interventions. At Site One, the percentage of students scoring below grade level fell from 54 percent to 17 percent. At Site Two, only eight percent of the students scored below grade level on the post test in comparison to 27 percent on the pretest. Site Three showed the least significant difference going from 43 percent of the students scoring below grade level in October to 25 percent in January. Based on the Gates-MacGinitie Test, the percentage of students with below grade level comprehension decreased after four months of intervention. When the pretest was given in October 1995, third grade students scoring below 2.4 and fourth grade students scoring below 3.6 were considered below grade level. In January, third grade students scoring above 2.9 in reading comprehension and fourth grade students scoring
above 4.3 are considered to be reading at grade level.

The teacher observation and anecdotal records were subjective for the third and fourth grade students. Over the course of the research time frame, the researchers noted that the more students participated in direct reading
instruction, the more strategies they used while reading independently. Students were able to stay on task and involved with the text for longer periods of time during Sustained Silent Reading time. Researchers also noticed an increase in student interest and understanding of new and unusual vocabulary. Summarizing skills were enhanced by using strategies during and after reading.

Researchers' anecdotal notes indicate an attitudinal change with students of lower reading comprehension. Students began volunteering to read orally and participate in class discussions. Activities that allowed alternatives to written responses encouraged students to elaborate.

At Site Two, most of the significant improvement was seen in students with lower or average reading ability. While students beginning the year with well developed reading comprehension demonstrated some improvement, their progress was not as noticeable through teacher observation. The students at Site One that began the year reading below grade level did improve but are still reading below grade level. At Site Three, the students that began the year reading above grade level showed little improvement, however, their scores did not fall.

Conclusions and Recommendations

Prereading methods provided solid foundation for the during reading and after reading procedures. The strategies used during this phase are essential to the success of the follow up activities.

Story Impressions is a prediction activity that was found to be most effective when done chapter by chapter instead of the entire piece. Literature studies for third and fourth grade where too lengthy for the strategies without modifications. Anticipation Guide is a powerful strategy to improve
comprehension in content areas. This activity provides opportunities for metacognition for after reading reflection. Semantic Mapping is also effective for content area lessons in social studies and science. Concept and vocabulary connections are the key focus of this strategy. Semantic Feature Analysis seemed limited to character analysis and requires sophisticated classification skills. Although a small percentage of students participated in teacher directed lessons, the majority of large group instruction did not successfully complete this task. In contrast, the vocabulary activity, RIVET, actively involved the classes while connecting meaning and prior knowledge to new vocabulary. This activity was found to be very effective by the researchers. Assessments after this strategy show student retention of vocabulary words and their meanings.

During reading activities support and strengthen the foundation laid by the prereading strategies. Jigsaw and GIST were most effective when the techniques were modified to combine attributes of both. These lessons needed structure and teacher guidance to meet the diverse abilities of third and fourth grade students. After several attempts with ReQuest, the researchers evaluated the activity as too difficult and confusing for third grade students. DRTA helped focus students on specific purposes for reading. Stronger readers were frustrated by the segmentation of the reading experience. Graphic Organizers were the most effective with the majority of students. The framework of these activities allow all learners to respond at a variety of critical thinking levels.

Most after reading activities are questioning techniques that relate directly to the prereading activities. The success of Cluster Questioning depends on the piece read. A question is posed to the class and depending on the responses, more questions are raised. No value or affirmation may be
placed on responses during this process. Clarifications had to be made so that the direction of the discussions were not misdirected into unrelated comments. Redefining comprehension activities are beneficial for clarification and assessment. However, teachers found modeling this lesson limited student’s personal reflection and transfer. Identification of Importance activities lead into the reading writing connection. The structure of the activity creates a structured format to produce a written summary. This summary can easily be used for assessment of comprehension and be integrated into content areas. The strategy of the Reading Comprehension Interview allows students an opportunity to reflect without concerns of writing mechanics. Students are more detailed and elaborate with this technique than in written activities.

Researchers believe that the attention given to systematic reading instruction effected students’ performance more than any one specific activity or strategy. The researchers’ plan was not only to provide instruction to improve students’ reading comprehension but also to create a resource of strategies that students can retrieve for future use. The researchers feel that the project addressed the communities’ concerns of falling test scores in reading comprehension. Future assessments are needed to evaluate students’ retention and use of the strategies without teacher prompts.

Anecdotal records created documentation to track patterns, successes and difficulties throughout the study. This assessment along with observation checklists were essential to the evaluation of the strategies used. Although researchers felt these assessments were adequate to document daily accomplishments, the published test scores were needed to track overall long range improvement from each site.

Prereading strategies were found to have the most impact on the classes...
involved in this project. Each researcher plans to implement similar strategies for the next school year. The after reading strategies were very similar to techniques already being used by the researchers. Therefore, the impact of these strategies were not as apparent through teacher observation and student achievement. The during reading strategies gave opportunities for checking for understanding and informal assessment during the process of instructional reading. However, students became frustrated when these techniques were encouraged for independent reading. The researchers will modify the implementation of during reading strategies in future use. These strategies will be used for middle and low readers through small group instruction while higher ability readers will be allowed to read without interruption.

Site Two and Site Three will use these strategies within grade level curriculum development of their novel studies. Prereading and during reading strategies will be integrated into science and social studies lessons to provide structure for collecting facts and details. These strategies will also be used to activate prior knowledge and assess comprehension of the concepts. At Site One, strategies will be used to enhance the basal lessons. The researcher will collaborate with teammates to create systematic reading instruction throughout the curriculum.

Continued research is needed to further the progress and improvement of student reading comprehension. Projects similar to this study are essential to document further success of systematic reading instruction. Researchers recommend to our school systems that systematic instruction focusing on reading strategies be encouraged.
REFERENCES CITED


Appendices
Appendix A
Observation Checklist

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<table>
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<th>Summarizing</th>
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<td>Identifies main idea</td>
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<table>
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<tbody>
<tr>
<td>fact and opinion</td>
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<td>compare and contrast</td>
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<td>make judgments</td>
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<td>draws conclusions</td>
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<td>usage/application</td>
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<td>word relationships</td>
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<table>
<thead>
<tr>
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<th>Occasionally Observed</th>
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46
Appendix B
Anticipation Guide /Agree Disagree Statement

Name__________________

A SEA OF GRASS

Read the following statements. If you agree with the statement, place a check under the AGREE column. If you don't agree, place your check under the DISAGREE column.

<table>
<thead>
<tr>
<th>Statement</th>
<th>AGREE</th>
<th>DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A prairie is covered with grass.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Prairie soil makes good farm land.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. California is a prairie state.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. A predator is an animal that hunts other animals.</td>
<td></td>
<td></td>
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<tr>
<td>5. Prairie dogs live in trees.</td>
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<td></td>
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<tr>
<td>6. Prairie dogs live in towns.</td>
<td></td>
<td></td>
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<tr>
<td>7. Prairie dogs live alone.</td>
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<td></td>
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<tr>
<td>8. Some animals protect themselves by living in herds.</td>
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<td></td>
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<tr>
<td>9. There are no coyotes on prairies.</td>
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<td></td>
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<tr>
<td>10. You could live well on a prairie.</td>
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</table>
Appendix C

TITLE: Semantic Mapping Pre-reading

PURPOSE: To develop, organize and activate prior knowledge before reading a text.
To enhance comprehension by activating prior knowledge.
To extend knowledge of vocabulary by displaying words in categories to show how the words are related.

STEPS: Teacher reads the text to determine the knowledge needed by students to comprehend the text.
Determine the main categories for the web.
Introduce the topic.
Ask students to think of ideas related to the topic.
Write all the responses on chart or overhead.
Lead a discussion to analyze their responses in order to categorize the responses.
Ask why ideas and responses belong together.
Decide on a label for each category.
Print each category concept on the chart.
List each response under a category.
Through questioning explore the relationship between the concepts.
Students read the text.

VARIATIONS: Use as a post reading strategy.
Review each conceptual category.
Focus on one category.
Create map from ideas students remember from reading.
Students list ideas under each category or concept.
Compare and contrast pre and post maps.
Use as a springboard for writing.

MATERIALS: Text
Chart or overhead
Appendix D
Rivet

1.

2.

3.

4.

5.

6.

7.

Use these words to predict what might happen in the story.
1. Read pages 59 - first paragraph on page 61. Stop and write a prediction about what you think Pa is whittling. Why did you think so?

2. Read to the middle of page 62. Stop after the word shelf. What had Pa whittled for Ma? Describe it. Draw a picture of it if you can.
Appendix F
During reading Semantic Mapping

DETAILS

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MAIN IDEA

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51
Appendix G
Graphic Organizers

WORD MAP

What is it?

What is it not like?

What is it like?

What are some examples?
Appendix H
Cluster Questioning

Pa scolded Laura...

Because

Response generated questions...

Because

Because

Because
THE 5 W MODEL

Who
Who is the most important character?

What
What is the most important detail?

When
When did the most important event occur?

Where
Where did the most important event occur?

Why
Why were these details the most important?

Write up the information above using the inverted pyramid form.
Appendix J
Redefining Comprehension
Appendix K
Reading Comprehension Assessment
(Completed by interview)

1. What did the book say about how Ma and Pa disciplined Laura and her sisters?

2. What reasons did Pa have for telling so many stories?

3. What other possible reasons could Pa have for telling stories?

4. Can you develop other ways Pa could discipline the girls without spanking?

5. For what reason would you favor Pa's form of discipline?
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<td>Salch, Kim; Shaffer, Vicki; Stevens, Karen</td>
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<td>Address:</td>
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9/91