Planning the Attack on Content Area Reading:
The Effect of
Four Metacognitive Strategies
on Weak Adolescent Readers'
Confidence

by

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ABSTRACT

This study sought information on the effectiveness of teaching four

metacognitive strategies to a small group of struggling adolescent students. The

investigation examined the transfer of strategies to content area classes and the

changes in student confidence in reading class-related texts. The strategies

chosen were (1) text preview, labelled *Survey* by Aukerman (1972), (2)

summarizing, using Cunningham's *GIST* (1982), (3) *note taking* for definitions

and annotations (Vacca & Vacca, 1996), and (4) a guided study technique,

Robinson's *SQ3R* (1970). Reading strategies chosen were student-initiated and

student-directed and suited to independent use with content area texts.

The study tracked six grade seven students through six weeks of small

group sessions where strategies were learned and practiced and then

determined student changes regarding two perspectives: the transfer of

strategies to content areas of Social Studies and Science and the changes in

student confidence in reading content area texts. The following questions were

addressed: (1) what transfer occurred from the reading strategy lessons to

content area classrooms, (2) what changes were noted in reader confidence in

reading content area texts and (3) what were the self-perceptions on the transfer

of strategies to content area reading tasks?

The study found that all students increased in their ability to recognize

good strategies and select valuable strategies for content areas. Use of

strategies was evident through three or more of the following indicators: (1)

improved awareness of strategies individually used, (2) inclusion of new strategies in content area reading, (3) improvement of study procedures reported by student, (4) improved marks in content area tasks, and (5) less frustration with content area texts. Three students who demonstrated transfer also displayed an increase in their confidence as readers in content areas. The remaining three students did not display clear and consistent application of the strategies, although two students' self-perceptions were that transfer had occurred. Both claimed that better strategies and study skills were present, although little evidence was noted by the researcher. Only one student held the self-perception that no transfer had occurred as a result of the instruction which corresponded to the researcher's observations.

The results of this study suggest that explicitly teaching metacognitive strategies with content area passages to a small group of struggling students was effective. Direct instruction and guided practice with tasks like those encountered in the classroom is supported by the findings of this study. Furthermore, the study indicated that when evidence of transfer of strategies to classwork is present, reader confidence was also positively affected.

This study suggests that further valuable research could explore the variables of the number and grade level of students. Would student confidence also be improved if the grouping were larger, or if the activities were part of classroom instruction? Would similar results be noted at other ages?

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iv

TABLE OF CONTENTS

List of Tables

CHAPTER ONE

Introduction

Cody was one of those students you never forget. He was small for his age, with short curly hair and rather thick silver-rimmed glasses. As his grade seven Language Arts teacher, I remember best his eagerness. Whenever a new task was presented, he attacked it with vigor, buried his head into the matter at hand and looked up with a smile whenever interrupted. On the other hand, I also remember sadly Cody's problems with reading, how he would appear to read, but could not seem able to make meaning among the paths of tangled words. Cody had already resigned himself to the idea that he was not a reader and openly announced that he planned to quit school the following year. I remember this sadly, because as a new junior high teacher, I tried to make the job of reading easier for Cody. I provided word lists of key vocabulary, overviews of chapters, cassette tapes for difficult novels, opportunities to read aloud with a buddy, and as many other helps as I could find time to invent. I am saddened to think of all this because even though the help I gave him may have helped him with his assignments, I am not sure he went away with ways to tackle the reading independently.

Context of the Problem

Typically, when weak students reach adolescence, they are often considered "students at risk". These "at-risk kids" often display reading comprehension difficulties that impede success in content areas. It is hardly surprising that the school dropout rate is high among these struggling students (Means, Chelemer & Knapp, 1991).

Educators have developed myriad strategies to improve reading comprehension. Volumes of material have been published on the topic. In reviewing recent research, Pearson and Fielding (1991), were careful to distinguish between attempts to improve students' comprehension of text and attempts to improve students' ability to comprehend texts independently. The latter category of strategies is of greater interest to me. While clear evidence states that improved comprehension does indeed occur with a huge host of strategies, some strategies more clearly give the student a set of tools that they can transfer to real-world reading (Pearson & Fielding, 1991). In the work force there is little chance that a teacher will be available to analyze reading tasks and create some good strategies to facilitate comprehension. Instead, workers must analyze reading tasks independently and select a suitable strategy with confidence from a repertoire of worthy strategies. Particularly students who enter the workforce early by "dropping-out" need to have acquired a nest-egg of

2

reading strategies with sufficient self-monitoring to recognize difficulty and to select appropriate reading interventions.

Struggling Adolescent Readers

In my classroom experiences, I found that many struggling adolescent readers share common characteristics. Paris, Wasik and Turner (1991) state that the characteristics of struggling readers often resemble novice readers. Struggling readers seldom look ahead to survey the text or back to check comprehension. They tend to attack all kinds of reading in the same manner, failing to adjust reading for different texts or purposes. Often they focus on decoding and isolate problem words, much like the beginning or novice reader in the early years of school (Walker, 1997).

Unlike novice readers, however, these older students often have low expectations for success, anxiety about reading, and unwillingness to persevere with difficult text (Paris et al., 1991). As weak readers struggle to read grade-level materials, they often believe they are not able to understand and are "doomed to failure" (Walker, 1992, p.20). Classroom strategies do open the doors for understanding textual material, in other ways than reading. However, my students, and probably most struggling readers, usually say they would like to know how to read better and believe being able to read is a life skill.

Skill with Real-World Texts

Struggling readers often show little interest in literature. Although these students know reading is a life skill, this rarely translates into an interest for fictional texts. Furthermore, they often state that fictional reading materials are seldom part of the world of work. Newspapers, travel guides, magazines, sales brochures, contracts, repair manuals--these are real-world texts, and none of these is fiction. Students who consider themselves weak readers seldom read for pleasure, and when they do, selections are often nonfiction (Means et al., 1991). Popular selections for adolescent males might be sports or car magazines, and fashion magazines are very popular among females. Comics are usually the single popular choice of fictional material for these readers. Educators working with "at-risk kids" often make a concentrated effort to direct educational experiences so that these students develop life skills and teachers often carefully select texts that simulate real-world reading tasks.

I am not going to argue that reading nonfiction requires a different set of strategies or skills than reading fiction. Personally, I believe that there are many overlapping features shared by both types of reading, but there are some different strategies good readers use when dealing with nonfictional text. For example, reading a text linearly from beginning to end may work as a strategy to gain the main idea of a piece of fiction even when the text presented is difficult. However, strategic content area readers learn to look ahead, use context, and

4

reread (Paris et al., 1991). While students may discover that developing skill with fiction or narrative may naturally build skill in other areas of reading, this study focussed on building skill with the types of text that "at-risk kids" are more likely to encounter as they approach adulthood and venture into the workforce.

Secondly, this study concentrated on those strategies which readers could easily use independently. Many strategies were not considered simply because they required a reading partner. Other, equally-valuable strategies, were teacher-directed and required a teacher-planned frame. These were also not included in the study because of the decision to focus on strategies that could be personal cognitive tools, controlled, selected, or adapted by readers. These strategies then hinged upon student metacognition for recognition of need and selection and are hereafter labelled *metacognitive strategies*.

What are Metacognitive Strategies?

Cognition relates to the state of knowing; metacognition deals with knowing about knowing. Metacognition, as it applies to reading, can be described as the knowledge learners have about reading strategies and the ability to capitalize upon such knowledge to monitor their own reading (Vacca & Vacca, 1996). Metacognitive strategies are generally defined as those strategies that enable readers to gain knowledge from text. Such strategies according to Means, Chelemer and Knapp (1991) enable readers to set a

5

purpose for reading, connect background knowledge, focus on main ideas, and check understanding.

Metacognitive strategies are varied and numerous. However, in all cases, the reader actively considers the task and looks for avenues to facilitate meaning-making. These avenues include strategies that occur during the planning before reading, self-monitoring during the reading, and self-assessment after reading. Examples of such strategies include:

- preview the text

- activate background knowledge

- generate questions

- identify information required

- summarize or paraphrase

- monitor blocks to comprehension

- use a guided technique like SQ3R (Robinson, 1970)

Furthermore, metacognition encourages students to think about their thinking, to learn to analyze a situation, and decide which skills or strategies are needed to gain understanding and how to apply those skills to achieve success (Edwards, 1996).

In order best to fit the time and content areas of this study, only the following four metacognitive strategies were chosen for use in this study:

1) Text Preview (labeled Survey by Aukerman, 1972)

2) Summarizing—GIST, (Cunningham, 1982)

3) Note taking (Definitions, Annotations, & Summarizing)

4) Guided study technique, SQ3R (Robinson, 1970)

Rationale for Choosing Strategies

These strategies were chosen for this study because they seemed well suited to help students develop a repertoire of strategies for unlocking the content of their textual materials independently. Furthermore, these four seemed to provide a good sequence of instruction where skills learned with one strategy could be a part of the following strategy, i.e., a later strategy would build on the knowledge of a former strategy.

I hoped that the chosen strategies would become compensatory behaviours that would take into account areas of weakness while supplying a method for success and subsequently improve reader confidence. They would, I believed, teach struggling readers ways to monitor reading and define methods to improve understanding, developing academic abilities and a sense of confidence (Holly, 1987). I believed that particularly for adolescent students, the use of metacognitive strategies could be effective and would not appear demeaning or childish. Weak readers usually acknowledge their weakness readily and would like to know how to improve. The use of metacognitive strategies puts the possibility of improvement into the learner's hands.

Adolescents appreciate "being in control," and a student-oriented locus of control can be a powerful motivator.

Statement of the Problem

The purpose of this study was to explore the effectiveness of teaching four metacognitive strategies to a small group of adolescent students, (six struggling students), from the following perspectives: the transfer of strategies to content area classes, and the changes in student confidence in reading class-related content area texts. The strategies chosen seemed best suited to endow struggling students with self-initiated compensatory strategies applicable for real-world texts, where understanding the content (that is, comprehension) would be important.

The study tracked the six participants through several small group sessions and then determined differences in academic confidence in content areas and in the participants' self-confidence in reading content area texts. To do this, the following questions about transfer of strategies and reader confidence were addressed:

1. What transfer occurred from the reading strategy lessons to content area classrooms?

2. What changes were noted in reader confidence in reading content area texts?

3. What are the self-perceptions of the transfer of strategies to content area reading tasks?

8

Definitions

Annotation--a remark written in the margin of a text or on a separate paper as a reader comment that links, questions or restates information.

Comprehension--the construction of meaning; a goal-oriented, active process to derive meaning from a text (reading).

Explicit instruction--a model of instruction where teachers model particular strategies, provide opportunities for supervised or guided practice followed by opportunities for independent practice. Finally, students apply strategies independently while reading. This process is also known as the gradual release of responsibility (Pearson & Gallagher, 1983).

GIST--an orderly process of writing a 15-word summary for a paragraph of informational text developed by Cunningham (1982). A second version for short passages produces a 20-word summary.

Guided practice--a process employed after direct instruction in which the teacher works through a procedure with students, providing assistance when needed.

Guided study technique--one of many systematic approaches to learning content by directing textbook reading and focussing students' attention to the major ideas presented; a study or learning strategy.

Metacognition--thinking about the processes of thinking, self-awareness, and self-control relating to one's own learning process; understanding one's personal learning.

Modelling--showing a student how to do a task using those with more expertise to provide an emulation of the task with expectation that the learner will copy the model.

Narrative text--language associated to the telling of a story, relating a sequential set of details.

Paraphrase--the process of writing statements that convey the meaning of a text without importing words verbatim and without adding ideas beyond those conveyed by the original text.

Predicting--anticipating the outcome or in content area reading, anticipating the information of the next passage.

Skill--information-processing techniques that are automatic, ranging from letter-sound identification to passage summarization (Paris, Wasik, & Turner, 1991).

Strategic reader--a learner who analyses a task, establishes a purpose for reading and then selects a strategy for this purpose.

Strategies--systematic actions applied deliberately to achieve particular goals, involving a flexible, adaptable and conscious use of knowledge during processes of reading and learning. These are sometimes more specifically categorized as *teaching strategies*--those that are content focused and teacher-initiated, or *learning strategies*--those that are student-initiated and directed (Alvermann & Moore, 1991).

SQ3R—a study technique developed by Robinson (1970) used to learn information from content area readings. The process involves the following steps: survey, question, read, recite, and review.

Summarizing—the process of writing statements, which capture the main ideas of a reading passage as a means to increase understanding of text and learning of content.

Survey—technique described by Aukerman (1972) that involves the act of previewing a block of text to gain a framework of key concepts from the titles, subheadings, visual aids, introductory and concluding paragraphs.

Scope of the Study

This study was done under the assumptions that metacognitive strategies are an appropriate and useful means to address the needs of students with content area reading difficulties, and secondly, that such strategies could be taught to struggling adolescent students. Furthermore, it was also assumed that the classroom teacher, being aware of strategies practiced, would provide an environment and atmosphere that promoted, or at the very least, allowed students to activate these strategies when reading.

It was further assumed that these students wished to improve their ability to comprehend content area texts and would be motivated to try the strategies studied. Finally, it was assumed that these students believed they were struggling readers in content areas and were not confident about their ability to handle successfully the materials in content areas.

11

One problem with this study was that two students, lacking interest in self-improvement, were not motivated to participate in the guided sessions. They adopted a "laissez-faire" attitude that interfered with interviews and observations during the study. A second problem was that transfer of strategies was gauged through observations and personal interviews, and therefore one can only state that the strategies are believed to be actively used by students. The research question about transfer of strategies to classroom use can best be described as the belief that such strategies are in use as noted through classroom teacher's observations or students' personal reflections.

CHAPTER TWO

Review of Literature

This chapter presents a review of literature related to the use of metacognitive strategies in content area reading. In particular, literature was chosen that looked at the four strategies used in this study, in settings similar to those of the study. Special attention was paid to the areas of transfer and reader confidence. Wherever possible, recent literature was given preference, although some studies before 1985 were included because of the close match to this study.

Five major sections make up this chapter. The first section "Effectiveness and Transfer" examines the research regarding effective transfer of metacognitive strategies from direct instruction to classroom application in content areas. In particular, this section reviews studies that recorded good transfer. It also reviews three studies that found mixed results regarding transfer and discusses two studies that found no transfer after metacognitive instruction.

The next three sections, "Previewing Reading/Survey," "Content Area Summarizing and Note taking" and "Guided Study Strategy/SQ3R," examine specific metacognitive strategies and reviews the effectiveness of each. In each case, studies with positive findings are reviewed first, followed by those with mixed results, and then those where the strategy was ineffective are included.

The final and fifth section, "Reader Confidence," surveys literature relating to readers' self-perception of ability and level of confidence. In this

section, three studies that examined changes in students' general attitude are reviewed first. The four studies that follow examine specifically the effect of metacognitive training on academic and reader confidence. Two tables follow, providing overviews for the studies.

Effectiveness and Transfer of Reading/Metacognitive Strategies

The discussion surrounding effective reading comprehension instruction is of great interest to educators. In particular, educators prize those strategies that students transfer to the reading of passages they later encounter on their own. In the practical world, most interest is directed toward the value and effectiveness of instruction and the transfer students make to independent reading. How well do teacher interventions increase the students' independent ability to understand unfamiliar reading passages?

As stated by Tierney and Cunningham (1984), the issue is with transfer: Can we teach students knowledge, skills or strategies that will transfer to their reading of passages with which teachers have not helped them? At the time of the review, Tierney and Cunningham found the results of the studies done were encouraging. They described a study by Palincsar done in 1982 which specifically addressed the four comprehension strategies of summarizing, self-questioning, predicting, and clarifying unclear text with seventh grade readers. Palinscar (as cited in Tierney & Cunningham, 1984) used reciprocal teaching to highlight these strategies with students. In this study, two sets of students worked with the researcher in pairs, while others worked in small classroom

14

groups with reading teachers. Palinscar typically saw a great deal of facility with

the strategies that appeared to last and transfer to other tasks. By the fifteenth

day of training, students typically achieved 70% accuracy. Reliable gains were

apparent on tasks similar to, but distinct from the training and on regular class

assignments.

Similarly, Tierney and Cunningham (1984) cited the research of Lipson

and Paris, studies done in 1982 that saw evidence of transfer after working with

third and fifth grade students. Lipson and Paris also used a "course" or

workshop approach to provide specific instruction in reading strategies. The

"course," appropriate for young readers, made the strategies appealing and

accessible through use of such metaphors as "Being a Reading Detective,"

"Reading is Like a Puzzle," "Following Reading Maps." These metaphors

directed students with focussed questions and guidelines. The trained students

outperformed the control group even several months after the instruction had

been completed. In this study, transfer did occur and that transfer was in fact

durable over an extended time.

Franklin (1993) also noted effective reading growth using the reading

strategies with expository text after giving several intermediate grade teachers

in-service workshops on strategies. In-school support continued through

modeling techniques and monitoring application of reading strategies in the

classrooms. Results for eighty-two fifth and sixth grade students showed

significant gains in reading achievement scores after one year of the project.

Metacognitive strategies in the content areas have been used to promote

both reading performance and learning in the subject area. Some research

identified a notable difference between the growth of metacognitive awareness

of content area reading and grade level. Yore (1993), and Craig and Yore

(1995), found that middle years students have limited knowledge about science

reading, science text and science reading strategies. In fact, the average grade

four to eight student's metacognitive knowledge of science reading, science text,

and reading strategies is similar to a younger and poorer reader of a narrative

text (Craig & Yore, 1995). The grade level results between narrative reading

comprehension and science reading comprehension, as measured by

standardized testing, were significant. They showed that middle years students

do not consistently increase their metacognitive awareness of science reading

with additional years of schooling as they do for narrative text. The results

suggested students benefit from explicit instruction about expository strategies

by middle years content-teachers to increase strategy awareness and use.

Studies on Transfer with Mixed Results

A number of studies showed mixed results on the benefit from specific

strategic metacognitive instruction. Such studies range from elementary to

college and three of these are reviewed here. The first involved grade six and

seven students, and the others involved college students in reading study skills

courses.

16

Fralick (1990) grouped sixth and seventh grade students heterogeneously. The purpose was to decide if an integrated metacognitive study skills program, taught in the first ten weeks of school was beneficial to students' attitude and academic growth. The researcher taught topics on learning styles, previewing texts, outlining, note taking and other study skills in English, Math, Science and Social Studies classes. The classroom teacher followed up on the strategies throughout the school year. Pre- and posttests measured academic achievement and study habits. The data showed that the integrated program had a positive (>.001) impact on study habits and attitude. They also noted significant statistical growth on the California Achievement Test in Reading, Social Studies, and Study Skills. The difference was not significant in Math and Science. However, the results of this study clearly show that strategy instruction was effective and transfer occurred to some content areas.

A more subject-specific study by Brown (1991) examined the performance of students in first-year General Biology. This research examined specific reading strategies that promote the mastery of biology concepts and appropriate reading comprehension. Ninety-eight students, selected because of their SAT scores, were randomly placed into two groups, those enrolled in General Biology with no reading instruction and those enrolled in reading study skills and General Biology with instruction. Instructional reading topics during the fourteen-week semester included: time management, previewing, structured skimming, vocabulary development, note taking, summarizing and test taking.

17

Students in both groups wrote the Nelson Denny Reading Test (NDRT), the General Biology Pre/Post Test, a cloze test from the biology textbook, the Study Reading Behaviors (SRB) and Study Skills (SS) inventories. The findings showed variability but no significant statistical difference between the two groups' performance on the biology posttest, final grade, and NDRT. However, there was a difference in study reading behaviors, and study skills. The general finding of this study was that since variability existed between pretests and posttests, some students enrolled in reading study skills, metacognitive in nature, did benefit from the instruction.

A more recent study using a student survey at the end of the semester found similar transfer. Dawson (1998) investigated students' reported transfer of textbook comprehension strategies (taught in a study skill course) to subsequent college course work. The surveys asked students about use of the eleven reading strategies taught in the reading course:

    (1) comprehension monitoring,

    (2) referring to the course outlines,

    (3) previewing chapter headings, subheadings, boldfaced terms

        and captions,

    (4) question-generation answered after reading,

    (5) text annotation,

    (6) taking notes,

    (7) outlining,

(8) summarizing,

(9) concept mapping,

(10) webbing, and

(11) creating concept cards.

They also interviewed five students in more depth about their strategy use. Dawson believed transfer had occurred. Students reported using seven of the eleven strategies. Those strategies that could be used during reading (numbers 5-7 above) were more regularly used than pre- or postreading strategies.

As Vacca and Vacca (1996) suggest in their discussion of SQ3R, Dawson (1998) likewise found that students chose to use and adapt strategies that were effective but not too time-consuming. Students also reported using more strategies as difficulty experienced with the reading increased. None of the students interviewed chose the same patterns or combinations of strategies for regular use but personalized strategies.

Studies Which Do Not Indicate Effective Transfer

Transfer appears to occur when we teach strategies with tasks like those tasks of the content area and when the content area teacher encourages use and practice of learned strategies. A program described by Bick (1995) was deemed not to have transfer to classroom learning because of the lack of similarity between the intervention and the classroom setting. The study tracked elementary children (grade two to four), who met before or after school for

19

instructional activities in reading and self-esteem. While they noted gains on standardized tests of reading and math, none were noted in transfer of learning.

A similar finding with college students pointed out the improved effectiveness of specific reading/study skills versus generally-applicable skills (Elliot, 1983). The researcher concluded that content area related strategies were more useful to college history students than either the general instruction or the lack of instruction. These findings point to the important influence of the content area classroom in effective transfer.

Conclusion for Effectiveness and Transfer

Teachers can do much to foster effective transfer of metacognitive strategies to content area classes. Metacognitive research findings suggest that successful readers are more aware of the strategies they use during reading than less successful readers (Tierney & Cunningham, 1984). Nearly all the researchers reviewed in this section mentioned the value of direct instruction with metacognitive strategies using tasks and texts similar to those in the content area. For the content area teacher, effective transfer means teaching learning strategies and teaching the content.

Content area teachers, however, have several advantages (Weinstein, 1987). They have the advantage of making use of "real" purposes, "real" text, and "real" learning as materials. Furthermore, content area teachers have opportunities to reinforce learning with review and response throughout the year. Several researchers noted the benefit of using such opportunities to structure

20

practice in a variety of settings and promote individualizing or personalizing of strategies.

Occasionally, the time factor was addressed (Lindquist-Sandmann, 1987) as the direct instruction of strategies initially may be a time-consuming approach. However, once readers can use strategies independently, learning becomes more efficient, and more effective than without instruction. Teachers have the opportunity to encourage learners to take control of their own learning and develop a personal set of metacognitive tools for learning. Students who personalize strategies recognize their control of the strategy, examine text, decide needs and select (or adapt) a strategy to fit the reading (Mueller, 1997). The students have control and authorship; they are in charge of the route to comprehension.

Survey/Previewing

Many prereading strategies improve student reading comprehension. Many, however, are teacher-directed and teacher-initiated. Advance organizers, preteaching vocabulary and structured overviews, are examples. By contrast, one strategy that can be student-initiated is a text preview. Previewing usually includes skimming, looking at pictures, titles and subtitles. Tierney and Cunningham (1984) state that "certainly, no one argues that having students read titles, prefatory statements or illustrations make them better comprehenders in any general sense." Yet, according to Paris, Wasik and Turner (1991), many students do not understand the value of previewing text, titles, and pictures or

21

importance of thinking about a topic before reading. They recommend teachers increase students' metacognitive awareness so that it is applied automatically and with thoughtful attention. Students should know the role previewing plays to analyze and plan the reading more effectively.

Tierney and Cunningham (1984) suggest that previews of text may be a particularly helpful strategy for unsuccessful readers who do not engage strategies spontaneously. However, proficient previewing requires the skill of question generation, basing questions upon the title, introduction, headings, bold print, illustrations and conclusions (Aukerman, 1972). Previewing is more than "looking ahead at the pictures" or "reading the ending" as so many readers habitually do. Previewing (or "Surveying," the label used by Aukerman) is a metacognitive strategy aimed at increasing reading comprehension and recall. Previewing should also not be a tedious, drawn-out task, but a quick worthwhile overview of subject matter.

A preview can help students find the big ideas of the chapter first. Mueller (1997) recommends students read the introduction, conclusion, headings, pictorial aids and chapter questions as a means to find three big ideas presented in the chapter. Although this could be a class exercise, students who practice and acquire the habit to do this independently increase their personal set of tools for content area comprehension.

Students frequently reject ideas that appear burdensome. Cheney (1990) encourages speed and efficiency by limiting students to a ten-second preview.

22

Using issues of news articles for practice, Cheney instructs students to read titles, subtitles and picture captions to generate a purposeful question as a prereading task. Cheney states that discussion generally shows that students see that previewing is easy and they can gather information quickly.

They can also adapt such a strategy as a means to deal with a new section or chapter in a difficult textbook (Stetson and Williams, 1992). Then, the survey could follow the same sequence but conclude with discussion or journal entry about the chapter's basic information. Because of the lengthy text and reflection time, such an activity would likely take twenty to thirty minutes on the first day.

Readers also do not intuitively use headings well to increase comprehension. Grant (1993) recommends that teachers model the use of headings, showing the process of activating and connecting background knowledge and anticipating the content of the passage. In a first hand account of work with high school students, Lindquist-Sandmann (1987) relates that students easily overlooked the structure of the text. Direct instruction of the survey process was used. Discussion emphasized the goal of metacognition and text structure. The students learned how specific aspects of structure helped understanding, or how a change in structure by the editor improved comprehension. Improved quality of study guide responses and higher scores convinced Lindquist-Sandmann on the effectiveness of a metacognitive approach to surveying text.

23

Gillespie (1990) also models the use of headings with students, focussing attention to "What do I already know about . . . ?" and "What important things will the text tell me about . . . ?" According to Gillespie (1990), who reviewed and summarized research on student-generated questions, students should be taught how to formulate worthwhile questions. Gillespie cites Aukerman's survey strategy as one possible means to break the task into workable steps for students. Survey addresses components of text structure (title, subtitle, visual aids, introduction and conclusion) individually in the question generation process. While a number of other methods were also described, the general consensus is that if students are expected to ask good questions, they must receive instruction. Furthermore, Gillespie recommended teachers teach question-generation and provide students with ample time to practice for effective transfer. It is unlikely that transfer will automatically occur.

Survey/Previewing as a Strategy for Struggling Readers

While many studies have explored the value of previewing and prereading strategies, most investigated teacher-generated and teacher-directed methods. While most of these have not been considered for inclusion in this review, a study by Graves, Cooke, and La Berge (1983) has connections to this topic. They conducted a study on the effects of previewing difficult short stories with low ability junior-high school students. Although the study used narrative rather than expository texts, many other features of the study merit its inclusion in this review of literature. First, Graves, Cooke and La Berge selected low

24

ability (struggling) readers, working with texts two to six grades below level. In fact, because of the gap between reading level and grade level, even the narratives chosen for the study were less difficult than the class materials. The texts chosen for the study were at the fifth or sixth grade level according to Fry's readability scale. Secondly, the components of the previews addressed areas similar to those addressed through Aukerman's survey strategy. The previews created by the researchers aimed at providing a content overview, activating interest through questions and highlighting difficult vocabulary and key words. This is similar to the student-generated preview produced during a survey. Aukerman's method of Survey includes questions generated from boldfaced vocabulary.

During the study, data were collected through oral recalls, short-answer questions and an attitude survey after each text presentation. Students scored significantly higher with previews on comprehension and retention. Data also showed strong support in favor of previews on the attitude survey. Graves, Cooke, and La Berge found the students did exceptionally well on inferential questions that they could not have answered from the preview. They suggest that struggling readers can understand information more fully if they have received a preview. They hypothesize that students may not have to allot as much processing energy to factual understanding and therefore, can make more meaningful connections from information. They encourage teachers to provide

previewing information without feeling that the students are not reading. They feel such prereading information frees the student for deeper meaning making.

Conclusion for Previewing/Survey

While the literature regarding previewing material is plentiful, much of it deals with those prereading strategies (such as advance organizers, structural overviews and brainstorming) which teachers design and orchestrate. While they may address student-related issues, they are nonetheless generated and/or directed *for* students rather than *by* students (Tierney & Cunningham, 1984). For the purposes of this study, the literature was sorted to select studies which provided students with instruction about a preview of expository text from a metacognitive perspective. While it is clear from the reading, previewing stands upon solid theoretical ground and has the support of many educators, research about student-directed or student-initiated surveys is limited. However, like Cheney (1990) and Lindquist-Sandmann (1987), many teachers have strong convictions in favour of previewing text, based on first hand experience as classroom teachers. They believe students improve their comprehension of expository with more automatic use of prereading surveys.

Content Area Note taking: Summarizing and Annotating Text

Because the strategies of summarizing and note making are frequently intertwined in research, the two have been reviewed together. Frequently, the topic of note making included both processes: summarization and annotation. According to Paris, Wasik and Turner (1991), beginning readers and

unsuccessful students may not think about the text after they read the last word. Some readers eagerly move onto the next task without reflecting on their reading. "Did I meet my goal? What did I learn? Were my predictions accurate? Did everything make sense? Can I summarize the main points?" Good readers ask questions like these and invoke strategies to review the text and their comprehension.

Because a summary of a text is selective, Tierney & Cunningham (1984) say it is logical to assume that learning to summarize texts might cause readers to be able to allocate their attention better to important information. With summarization and annotation strategies, students stop or create breaks in the text to engage in writing.

Several questions seem to recur in the literature reviewed. First, the questions about increased comprehension and retention of information using note making are frequently addressed. Second, there are questions about the note making's usefulness for increasing understanding versus note making as a convenient means to condense text for test review, i.e., to ask whether there is value in note making as an *encoding* strategy or *recording* strategy. While most of the literature review continues to ask about the latter, these have not been included in this review of literature. Studies included investigate comprehension and retention from note making.

Studies Finding Increased Comprehension/Retention

Many studies investigated the claim that note making instruction could improve comprehension and/or retention of information. Two of the studies reviewed here examined students from grade five to eight while the balance worked with college students.

A recent study done by Miller (1995), cited strong positive effects of strategic note making instruction upon recall of oral information and reading comprehension. Miller's study included a heterogeneous group of eighty fifth-grade students. The purpose of the study was to examine the effects of two instructional strategies. Instructors used an advance organizer and modeled note making. Both the advance organizer and the note making treatments were valuable for literal recall for all students. A significant finding was the strong effect of the treatment on low achievers. There was a 3/4 sigma increase in the use of inferences by the low achievers in the note making treatment. Miller concluded that both strategies were effective instructional techniques of expository materials with a diverse learner population. Note making instruction appeared very effective for weak grade five students.

While Miller's study focussed heavily on listening and expository discourse for its findings, an earlier study by Bigelow (1992) supported note making for expository text alone. The first part of Bigelow's study examined the effectiveness of two kinds of note making (outlining and restructuring into a matrix) with 150 middle years students. In both cases, the groups were initially

28

instructed on how to apply the note making strategy and provided with some guided practice. Later, groups were given an unfamiliar text to process. Tests designed to measure recall and comprehension showed that both groups performed significantly higher than a control group that simply read the passages.

The students in Bigelow's study did not have an opportunity to review. Therefore, the study's results reveal the impact of note making as a learning strategy. Reviewing material and notes would have emulated note making as a study tool, which may have yielded even more significant effect. Bigelow recommends the inclusion of note making instruction in content areas to help learners achieve learning objectives and to learn to use the strategy.

Note Making Instruction and Postsecondary Students

This section reviews eight studies that investigated the effectiveness of note making with postsecondary students. The first two studies agree on the effectiveness of note making instruction, but seem to indicate that much of the improvement can be attributed to the review of notes. Scholars in subsequent studies argue that the process of note making actively involves the learner in the construction and clarification of ideas. As a result, better meaning-making occurs and comprehension and retention is improved.

McIntyre (1990) investigated the effect of review and note making. Students in this study were divided so that reviewing notes became one variable under consideration. Participants were divided under four conditions: N/R

29

(notes/review), N/NR (notes/no review), NN/R (no notes/review), and NN/NR (no notes/ no review). All participants took a topic-specific quiz. Notes were also analyzed. Data confirmed that learning was linked significantly (<.05) to note making. However, students who scored well did not necessarily have "better" notes than those who achieved lower scores. However, the study did not provide training on how to take efficient notes.

Wellington (1980) also found significant value in note making and review in a study with 110 college undergraduates. Students were given a factual recall test after reading a six-page article. The test occurred five days after the initial reading and students who read the passage again and reviewed the notes they had made outperformed those students who merely read the passage a second time.

Both studies support the review function of note making but do not discredit the value of note making alone as an information processing strategy. In fact, in neither study, was note making instructed. Instruction of note making in a study by Harris (1990) involved text annotation and underlining. Groups were trained using passages from history and science. Data collected supported underlining for effective short term learning, but showed that the annotation method was superior for long term retention, especially in science. When considered together, these findings support the use of note making as a useful reading strategy when retention is the goal.

This conclusion by Harris fits well with Guido and Colwell's rationale (1987) for using direct instruction to teach summary writing following expository text reading. They claim that the act of summarizing requires active reader involvement in reading and processing information. Text annotation, as used in Harris' study, required students to note key ideas in their own words in the textbooks' margins embodying the elements of summarization and paraphrasing in the annotation.

Simpson and Nist (1990) also studied the effect of having college students state key ideas briefly *in their own words* using text annotations in the margins of textbooks. Students participated in nine 50-minute classes of direct instruction and practiced independently for at least three hours. Students observed teachers modeling the strategy, discussed with peers, and got immediate feedback on early attempts. Furthermore, students used textbooks from three content areas and modified the process to suit tasks and content. Instructed features of the annotations included:

(1) writing brief summaries

(2) listing and organizing multiple ideas such as causes, effects,

characteristics,

(3) noting examples

(4) using graphs and charts

(5) jotting down possible test questions

(6) noting confusions or problems with understanding

31

(7)underlining key words and phrases.

Simpson and Nist attempted to gather data and answer questions regarding differences in academic performance, time spent and transfer to content areas after mastering the annotation strategy. Data were collected through multiple choice tests of information on content, students' records of study time, students' annotations and oral descriptions of their learning. Results showed that students receiving direct instruction outperformed the control group who used a variety of strategies such as rereading, memorizing and "looking over" the material. The control group had been encouraged to preview the text and then create questions and answers after reading. However, most chose alternate strategies. The annotation group scored higher on each of the multiple choice quizzes and spent approximately 35% less time in study.

It would appear that learning was more effective and time efficient with text annotations made during reading. However, Simpson and Nist explain their findings by citing Anderson and Armbruster's (1984) conclusion that it is not necessarily the strategy itself; the annotation group did better in less time because they were *actively involved in constructing ideas and monitoring their learning*. As they read the text, students were structuring the ideas, and retelling those ideas in their own words, checking comprehension, and noting key points. Reading was active meaning-making.

Augustine (1992) also investigated the impact of active construction during a study on the usefulness of paraphrasing. This study attempted to

32

isolate the skills of paraphrasing and examine the various levels of effectiveness based upon the amount of personal involvement in the paraphrase's creation. In this study, 117 college students systematically learned the strategy of paraphrasing. While one group read passages and generated paraphrases, another group read passages and compared premade paraphrases. A third group highlighted the main ideas of paraphrases already made for their use. While there was a significant effect noted among all participants who worked with paraphrases, the most noted effect was among the groups engaged in generating paraphrases. The study established that best recall of information occurred when the paraphrasing activity is frequent and requires dynamic, flexible and generative skills.

Review of Literature for Summary Writing

Summary writing is also often a form of note making involving the reduction of a passage to its gist, or main points. Students proficient at summarizing can detect and concisely articulate the main idea and key points, using their own words, while closely maintaining the author's intent (Vacca and Vacca, 1996). Summary notes of expository passages are brief and clear condensations that often are used to facilitate retention of key points.

Students usually write summaries for one of two reasons. The first is a presentation or report to others (teacher, classmates, for example). The other is to be used as a learning or memory aid to put important information into a more manageable "bite" for later use. Either way, summaries are useful for eliminating

33

detail and clarifying the key points of a text. Finding the main idea requires readers to (1) understand what they have read, (2) make judgements about the importance of the information and (3) consolidate information succinctly (Paris, Wasik & Turner, 1991).

According to Hill (1991), summaries help the learner recall written materials and strengthen comprehension. However, summary-writing is a difficult task for many students. Unfortunately many students lack the training to create clear and concise summaries. In particular, in content areas, summary writing is assumed, and because many students have not acquired that skill, they tend to copy verbatim instead of summarizing (Hill, 1991).

However, summarizing can be taught using teacher modeling, guided practice, and independent practice. The first step is to convey the characteristics of a good summary stressing that it is brief, has the important points and eliminates details, lists and unnecessary description (Gambrell, Kapinus & Wilson, 1987).

Students frequently have trouble distinguishing important and nonessential points to write a succinct summary. In general, older, more experienced readers write better summaries than younger, less skilled readers (Paris et al.), but these students could be trained to follow the same rules that older and more skilled summarizers use (Brown, Day & Jones, 1983). Hill (1991) suggests that a logical approach to summary writing with junior high

34

students uses a temporal order frame. Some content area texts lend themselves well to a frame such as:

                     First, this happened:_____

                     Then_____

                     Then_____

                     Finally_____

Even more experienced writers at the college level found this a natural pattern (Hill 1991). As students become more competent at summarizing, other types of organizers can be used such as cause and effect, definition and example, problem and solution, or compare and contrast. Hill concludes with the point that summary writing does not just happen, but is based upon skills taught by teachers.

To provide a strategic approach to summary writing, Cunningham (1982) investigated the usefulness of a procedure for instruction, GIST, which was successfully tested at the fourth grade. GIST provides sequential training in writing a summary for progressively larger chunks of text. Students learn GIST through a group process. Discussion is encouraged to define the reason to use such a technique and explore choices for content inclusion in the summary. The final product is a twenty-word condensation of the original text. While Cunningham recognizes that some passages may not lend themselves to summarization, his findings showed if summarization is the learning objective,

the GIST technique is a useful means to provide explicit instruction regarding summary generation.

Studies that Investigate Summary Writing

Studies that investigated the effect of summary-writing and comprehension/retention show that the strategy is valuable. In particular, summarization appears to increase understanding on major ideas, although it may not show gains on the retention of specific fact recall. Studies chosen for review in this section involved grade four to eight students who received direct instruction and practice in summary-writing.

A study by McNeive (1985) examined the effectiveness of one sentence summaries upon recall of expository text. In this study, 347 elementary students (grade four and six) used expository passages from content area textbooks and received explicit instruction in summary writing according to one of three instructional methods over a six-week period. Students learned to write one sentence summaries, or one sentence summaries and a paragraph summary, or they were taught according to current classroom practice for social studies reading. The effectiveness of summary writing was evaluated on a written free recall from a social studies passage. Results showed that one sentence summary writing was effective in improving the recall of sixth grade students with expository passages, although it was not effective for improving the recall of fourth grade students. While this disputes Cunningham's earlier work with summary writing at the grade four level, the process may not have suited

passages studied, or the study's written free recall may have contributed to the lack of effect at the grade four level. In any case, the effect at grade six was significant.

A second study using grade six social studies was carried out by Rinehart (1985) using seventy students. Like McNeive, Rinehart used direct instruction to train students to apply the strategy of summary writing. Rinehart used several measures for analysis: major and minor information questions on a social studies test, preparation time for the test, paragraph summaries and outlining. Rinehart also investigated the length and quality of notes generated as students prepared for the social studies test. Students in the control group carried on with planned lessons just as in McNeive's control group.

Findings were encouraging toward the use of summary writing. Students trained in the strategy for five days outperformed the control group on major test items (though not on minor test items). Trained students used more time to prepare for the test and their notes were longer and of higher quality than the control group. Rinehart concluded that metacognitive training using the strategy of summary writing aided efficient learning from text.

Armbruster, Anderson and Ostertag (1987) also examined the strategy of summarization with grade five social studies classes. Eighty-two students were divided into two groups, one receiving direct instruction on summarizing a problem\solution text structure and the other receiving more traditional questions and discussion after reading. While Day 1 was spent recognizing the

problem\solution text structure and recording, Day 2 was used to give a frame for writing a summary. The pattern given was as follows:

___ had a problem because ___.

Therefore,_____ .

As a result,_____.

Students spent Days 3 to 9 working on textual passages from social studies, gradually assuming more responsibility and independence for the summaries. On Days 10 and 11, students returned to the regular social studies curriculum and received feedback regarding the summaries written there. Data from summary passages and a unit test essay was collected on Days 12 and 13.

Analysis of data supported the assumption that trained students would have a greater factual recall. In fact, trained students recalled about 50% more of the macrostructure ideas from the reading passages on the essay test. Summary writing did not show positive effect on the short answer test that probed recall of facts often independent of the "big ideas." Analysis of summaries also showed that students trained over the twelve days were better able to distinguish important points from details. Their summaries included more of the most important ideas and significantly fewer of the least important ideas. The training group had learned the *kind* of information that they should include in a problem/solution text summary.

Slater (1985) designed a study to examine the effect on comprehension and recall of expository text using summaries written with structural organizers.

Like Armbruster, Anderson and Ostertag (1987), one group of students was asked to complete frames to help with the reading of eight junior high history texts. Two of these were in the problem-solution pattern, similar to the frame Armbruster, Anderson and Ostertag used. However, two others were in each of the claim-support-conclusion and cause-effect patterns. A second group of students was given the structure as a written guide, but students were not told to write. A third group, a control group, was directed to read the passage carefully and take detailed notes while reading. At the end of reading, this group was instructed to write down everything they could remember. The fourth group was given the same directions as the third, but was not instructed to make notes.

Results upheld the hypothesis that those who completed the pattern frame would outperform other groups in a free recall and on a multiple choice test. However, Slater had not expected the powerful effect of note making. Note making produced a stronger effect than the structural organizer when students were not actively involved in recording the details of the structural pattern. This effect was consistent for each of the four structural patterns. Slater concluded that students are likely to learn more from text if they receive detailed information about the structure of an expository text and use it to produce a summary. However, note making, even without such a structural organizer, is likely to improve students' learning from text. In fact, according to Slater, note making can improve students' comprehension and recall markedly.

Conclusion for Note taking and Summary making

The quantity of literature on note making and summarizing is extensive and in no way has this review exhausted the possible sources. Current sources, and in particular, those that deal with expository text in middle years content areas, were selected. Literature appears to reinforce the belief that by constructing a summary, students are constructing meaning with active involvement (Flood and Lapp, 1991). Summary-writing forces students to examine text more carefully and record their reworked versions in their own language (Devine, 1991). Similarly, note making forces attention to main ideas and aids in retention. Both summary-writing and note making have been reviewed within the same section because of frequent overlap. Summarizing is often used as a note making strategy. Both note making and summary writing encourage students to pay attention to material learned and organize it in a personally useful way (Anderson & Armbruster, 1991, Annis, 1985).

Guided Study Strategy/SQ3R as a Metacognitive Strategy

While there is an increased emphasis on the metacognitive nature of learning, the instruction of study skills is not a new idea. Incorporating the philosophy of metacognition with this instruction puts greater emphasis on showing students how, why and when to study. Metacognition encourages learners to incorporate strategies into a system of learning. Tierney and Cunningham (1984) stated their reservations on the instruction of skills just to show mastery of the strategy. They warn educators to remember that process is

40

important, but to the extent that comprehension is like gardening. We must be more interested in the vegetables produced than the tools in the shed. While Tierney and Cunningham promote teaching weak readers about the strategies for reading, they remind educators that students need to incorporate those strategies into their personal set of "tools" to improve the "harvest" of meaning.

Educators frequently agree that below-average readers employ fewer tools or strategies and with less expertise than above-average readers. Felsher (1981) reported that above average readers employed reading/thinking/writing study strategies twice as often as below average readers. As expected, Felsher reported that above average readers achieved better scores in the reading/thinking/writing tasks.

Many educators attempt to expand the use of metacognitive strategies among struggling students by providing explicit instruction and practice. One of the most commonly known and frequently recommended study system of learning is SQ3R (Robinson, 1970). SQ3R is an acronym for the following process:

> Survey--the reader previews material, noting general outlines, headings and visuals of the passage.

> Question--the reader generates questions based on headings, visuals and topic of material.

> Read--the reader reads the passage, attempting to find answers to generated questions and find key information.

41

Recite--the reader answers aloud or writes responses to the

questions generated.

Review--the reader rereads the passage or portions of it to verify

answers.

SQ3R does incorporate valid reading strategies (prereading survey,

question-generation, activating prior knowledge, and note taking, for example),

but learners are frequently frustrated, finding it difficult to use independently.

Vacca and Vacca (1996) postulate this difficulty arises from the lockstep formula

learned but not placed within the learner's control. They state that the key to

any system's effectiveness may very well lie in how students learn to control it

through flexible and selective use. By encouraging personal awareness and

including metacognition as an integral aspect of SQ3R, students regain

authorship and locus of control while learning material.

Review of Studies of SQ3R with Middle Years Students

Recent research also investigates the instruction of SQ3R and its effect

on student attitude. Wander (1996) investigated the effectiveness of SQ3R and

SQ4R (Survey, Question, Read, Recite, Review, and Reread) strategies for

improving the recall and questioning skills of grade five students using a content

area textbook (social studies). The study included seventy-six students divided

into three groups: SQ3R, SQ4R and those who were taught according to the

teacher's edition of the textbook (control group). Students participated in pre-

and posttests which examined reading comprehension, question generation and

study strategies (the latter two being a rating scale). Furthermore, nine students from each group were interviewed about their perception of reading/study strategies. While few statistically significant differences were noted between SQ3R and SQ4R, the two strategy groups outperformed the control group in several aspects: the posttests of reading comprehension, question generation, familiarity with study strategies and perceptions about the usefulness of such strategies. Exit interviews revealed that students in the study strategy groups found the training to be beneficial when studying content area text. In general, Wander's findings lend further support to SQ3R and SQ4R as effective study strategies for improving the recall and questioning skills of students studying content area textbooks.

A study by Slade (1984) similarly examined the use of SQ3R in the content area of science. In this study, 401 grade six students comprised the sample. Slade not only examined the effect on reading comprehension of expository science text, but also looked at the changes in attitude toward science. Slade measured gains through tests of content knowledge, using both immediate and delayed tests, and a standardized reading comprehension test. He also examined gains on a science student attitude survey. Slade did not report significant academic differences between the study groups (that is to say that the SQ3R study group was not statistically different when compared as teacher-directed strategy, independent reading-study strategy or the control group using usual classroom instruction). Slade did report that the SQ3R group

members receiving teacher direction had more positive attitudes toward science.

SQ3R as Guidelines Adapted to Suit Reader Needs

A review of literature by Graham (1982) also shared similar reservations about the evidence supporting SQ3R as more effective than traditional study techniques or the students' own best study method. However, Graham offers several factors to be considered. First, SQ3R may be better suited to specific types of content material, and use may also depend upon the instructional purpose of the textual passage. In cases where information is needed for testing or fact recall, the complete strategy may be more appealing, whereas textual passages read for comprehension may not invite students to use all five steps. Graham reaffirms that students will be more inclined to use SQ3R if they understand the principles incorporated within the technique. However, they may not be more successful with SQ3R than they would be using their own best study technique. What Graham fails to state is the likely connection between metacognitive understanding of the principles and personalizing the study strategy best to suit learner needs.

Graham further states that SQ3R may be more effective or appropriate for certain students such as those in need of overall reading improvement or those readers still developing good skills for processing expository text.

Such may be the case in the reported use of SQ3R by Powell and Zalud (1982). These instructors used the strategy of SQ3R to create a worksheet frame with "fill-in-the-blanks" for sixteen students (ages 15 to 19) who were

labeled educable mentally handicapped or specific learning disabled. The worksheet was used to generate an SQ3R study sheet for each chapter of work. A unique feature of the adapted SQ3R process was the requirement that students incorporate key vocabulary within the answers to the generated questions. Results of the use of SQ3R, or in this instance, a modified version of SQ3R, were that the overall grade point average increased from nine to seventeen points for all but one student. Students were more able to analyze textbooks systematically, organize information, restate and paraphrase, and review material more easily.

Success was also noted in study done the same year by Adams, Carnine and Gersten (1982) who had remarkable results using SQ3R with grade five social studies students. Students included in this study had adequate reading (decoding) skills, but showed weak study skills. Students received four days of direct instruction on the strategy, with explicit directions for each step and a gradual transfer of responsibility to the learner through systematic fading of prompts. The procedures included an emphasis on metacognition in that students were told the purpose of each step and given a means to monitor their success (that is, instructions to recite important details after each heading, before attempting to do so at the end of the reading passage). Data were obtained through a free retell of the passage and a short answer test on the content (immediate and again after two weeks). The analysis showed that trained students performed at a significantly higher level on the two short answer

45

tests, and somewhat higher on the free retelling, although the difference was not great enough in the latter to be statistically significant. Difficulty was noted in the interpretation of the scoring of students retelling because of fragmented sentences, frequent use of pronouns without referents and random facts. The experimenters would have preferred to ask for clarification during the retelling that may have yielded more reliable results. In any case, the results support the use of systematic instruction of study strategy (SQ3R).

Observations made by Adams, Carnine and Gersten (1982) between the pretest and posttest also suggest that such instruction increases students' attention to textual structure and increases comprehension. Trained students, instead of reading nonstop through the passage, were observed to attend to subheadings, reread various sections, review and take notes. These observations suggest that students were using metacognitive strategies and monitoring comprehension. Further observations after the two-week delay showed that many trained students modified some strategies and applied them in a more personally efficient method.

Furthermore, a notable difference was observed during test preparation. All students (trained and those in the control group) were allowed to study for a forty minute period. The average time used by students in the control group was only nineteen minutes compared with the thirty-five minutes used by trained students. Without training, grade five students do not appear to know how to use time to study effectively. Clearly, training can improve effective studying

46

and recall of information. SQ3R training provided the stimulus where students learned a helpful system and then were able to personalize steps.

Best and Brozo (1985) conducted a review of the research that investigated the effects of student-generated study aids. They examined studies published between 1979 and 1985, but their findings remain consistent with the review of literature presented here. The analysis revealed that most study techniques were effective when the following conditions were met:

(1) the deeper the student is involved in the processing of the textual material, the better the performance in comprehension recall,

(2) the greater the match between the processing demands of the study strategy and the test or evaluation task, the better the results,

(3) providing adequate training is essential and

(4) the more time students are engaged in processing text, the better their comprehension. (p. 18)

SQ3R Conclusion

In response to students' difficulties in learning from content area textbooks, teachers often use study strategies to give students methods to overcome the problem. One commonly known study technique is SQ3R. Research has continued to examine this strategy in an attempt to rank SQ3R among other strategies. While researchers do not consistently find it superior to other strategies, studies that take care to give explicit instruction, guided

47

practice and supplement the strategy's instruction with an emphasis on metacognition may be more likely to find significant effect with SQ3R.

Furthermore, several strategies that investigated SQ3R and student attitude and self-perceptions found that instruction of a study strategy could have a positive impact. Students who added SQ3R or a variation of the strategy to their approach to content area learning often reported an improved attitude. This impact may be linked to those studies that used a metacognitive approach to SQ3R and encouraged students to adapt the strategy. SQ3R has often been argued to be a rigid approach, yet studies found students could build on the foundation set by the strategy to modify it and add it to the set of tools for content area reading.

Introduction to Reader Confidence

Armbruster (as cited in Collins, 1994) suggests that learners must first become aware of structures of text, knowledgeable of the task and their own characteristics as learners, before they can strategically control the learning process to optimize the influence of these factors. Metacognitive awareness of skills can be gleaned through instruction. Teachers can help and encourage their students to take an active role in reading. Students' perceptions of their own competence will influence the effort they put into recruiting and using different reading strategies (Paris, Wasik & Turner, 1991). The goal is to develop confident learners. This section will examine whether current studies

48

show that integrating metacognitive skills into content area reading can make that goal attainable.

Studies that Demonstrated Improved General Attitude

A number of studies investigated student attitude during a project involving the effectiveness of metacognitive instruction. As cited earlier in this chapter, Fralick (1990) found that students who were given instruction into learning styles, previewing, outlining, note making and study skills at the grade six and seven level showed an improved general attitude. Studies by Eberling (1998) and Hickerson (1986) also both cited effective changes in student attitude as a result of instruction for improving comprehension and learning of expository text.

Eberling looked at college students who were instructed in reading comprehension monitoring skills, note taking and other study skills. A small group of ten students participated in pre- and posttests. An analysis of the results showed that student attitudes did improve from pretest to posttest. Hickerson found similar improved attitude to expository text after a six-week treatment on expository text structure using passages similar to those encountered by seventh and tenth grade students in content area reading. Classroom teachers conducted the lessons, pre- and posttested on four measures, one of which was student attitude. The results for grade seven students were highly significant.

Roberts (1993) also traced the progress of a group of struggling

adolescent students who participated in a Reading Workshop designed to

bolster the skills and self-esteem of remedial students. After a year of daily

instruction, they clearly noted gains in reading competence, but not significantly

different from the gains of the control group. No significant group gains were

noted in self-esteem or attitude toward reading although individual students who

displayed the poorest initial attitudes, or lowest academic self-esteem, made

significant gains in attitude. The researchers recommended the workshop as a

means to foster academic gains among struggling students and augment the

reader confidence of those students performing at the lower levels of reading

achievement with the least positive attitudes toward reading.

Studies on Academic/Reader Confidence and Metacognitive Strategies

The studies described in the previous section examined change in

student attitude following instruction to improve reading strategies. A few

studies have more specifically investigated the relationship of metacognitive

instruction on academic self confidence, including confidence in reading. Four

studies are presented below. Of these studies, the first deals specifically with

middle years students instructed in metacognitive skills in a reading and writing

unit. The remaining four involve college or university students who were

identified as students at risk, or with weak academic competence in content

areas.

As stated, a study with grade five to eight students by Collins (1991) incorporated metacognitive training into a reading and writing unit. Middle school students were led toward the use of a number of thinking skills (problem-solving, deductive reasoning, question generation, pattern recognition, and decision-making). The lessons, over a four month period, included discussion and reflective journal responses on thinking competencies and learning. Analysis of the journal entries revealed a significant use of the strategies outside the classroom. Experimental subjects also significantly outperformed control subjects in scores on a measure of self-esteem, suggesting lessons that include a metacognitive approach to strategic learning positively affect students self-esteem.

Academic/Reader Confidence of Postsecondary Students

Studies that specifically examine students' feelings of academic competence at the postsecondary level often cite similar improvements after the instruction of metacognitive strategies for reading or learning. O'Dell (1980) saw a notable difference after a seven-week workshop with college students designed to increase reading comprehension in content areas, note taking from reading, expository writing proficiency, and self-perceptions of academic competence. While scores showed increases in all areas, the most significant was the improved student self-confidence.

Gains in academic self confidence were also statistically significant after an adjunct study skills course described by Langer and Neal (1987) used by

potentially at-risk university students. The five principles of the course reflected

the view that metacognition provided the means for more successful learning.

These principles included:

(1) engaging in *questioning* behavior,

(2) assessing one's learning and progress through *self-monitoring*

activities,

(3) *adapting* one's study approach to reflect course objectives,

(4) *analyzing* complex tasks to identify component skills, and

(5) organizing content ideas and study time. (p. 136)

Metacognition, or thinking about the learning process to choose the best

learning strategy, is evident in each of the italicized segments above.

Throughout the sessions, students increased their awareness of their own

learning strategies and practiced strategies such as note annotations,

summarizing, SQ3R, noting textual organization, use of graphic organizers

(mapping, webbing, matrices), vocabulary learning, and study strategies. These

topics were then practiced using content area reading and assignments

throughout the year.

Evaluative data included academic success throughout the year with pre-

and postinventories related to study habits and academic self confidence. Mean

gains in self confidence were statistically significant and supported by anecdotal

responses from students and instructor's observations about students' progress.

One content area instructor who was initially skeptical about the value of such a

course later enthusiastically promoted the idea of adjunct study skills to overcome students' lack of essential skills for success in content area courses.

Students enrolled in a similar class in a community college also reported growth in the levels of confidence and in strategic thinking. In a study designed by McIntyre (1993) students worked on building metacognitive awareness and increasing use of metacognitive strategies for a month. Some students used a journal to record strategy use. All students completed an open-ended survey about growth. Study results showed significant improvement in levels of confidence, adjustments to academic responsibilities and strategic thinking. This suggested that a metacognitive program could be beneficial in promoting academic growth and confident use of skills and resources.

Conclusion for Reader confidence

Many studies have investigated the role of reading and self-esteem. For the purposes of this study, an attempt was made to review literature that connected metacognitive reading instruction and reader self-confidence. Literature relating to each of the four metacognitive strategies of this study was also reviewed, and wherever possible, connections to reader confidence were made. The body of research that has investigated the impact of this set of four metacognitive strategies on struggling adolescent students' confidence as readers is small but there is good evidence to support the claim that the instruction of such strategies can improve confidence. Those studies that built a

strong emphasis of metacognition into the strategy's instruction seemed more likely to find a connection between the training and reader confidence.

Table of Studies for Metacognitive Strategies

STUDY	Grade	STRATEGY	SIGNIFICANCE
+ Palinscar (1982)	gr. 7	summarizing, self-questioning, predicting, clarifying	modest, but reliable gains on class assignments
+ Lipson (1982) Paris (1982)	gr. 3 & 5	varied reading strategies	outperformed control group even several months after instruction ceased
+ Franklin (1993)	gr. 5 & 6	varied reading strategies	significant gains in student reading achievement after one year in the project
+/- Fralick (1990)	gr. 6 & 7	learning styles, previewing, outlining, note making, study skills	improved students' general attitude, improvement in Reading & Social Studies, but not Math & Science
+/- Brown (1991)	college	varied reading & study skills course	some students showed gains in reading behaviours and study skills
+/- Dawson (1998)	college	eleven reading strategies	students adopted only some and personalized a pattern
- Bick (1995)	gr. 2 to 4	extracurricular program of reading skills	no transfer of strategies in spite of gains in reading
- Elliot (1983)	college	general reading/study skills	no evidence of transfer
+ Graves, Cooke & La Berge (1983)	struggling gr. 7 & 8	previewing	higher scores on comprehension & retention
+ Miller (1995)	gr. 5	advance organizer & note making	both valuable for recall, especially with low achievers
+ Bigelow (1992)	gr. 5 to 8	note making—outlining and matrix	significant improvement on recall and comprehension
+ Harris (1990)	university	text annotation & underlining	annotation superior for long-term recall
+ McIntyre (1990)	university	note making	groups making notes scored significantly higher on quiz

54

STUDY	Grade	STRATEGY	SIGNIFICANCE
+ Wellington (1980)	college	note making	significant improvement with reviewing notes
+ Simpson & Nest (1990)	college	note making including summarizing	higher scores & longer study times noted
+ Augustine (1992)	college	note making as paraphrasing	significant gains with those who generated paraphrases
+/- McNeive (1985)	gr. 6	summary writing	effective at grade 6, not at grade 4
+ Rinehart (1985)	gr. 6	summary writing	longer answers, higher quality on major test items
+/- Armbruster, Anderson & Ostertag (1987)	gr. 5	summary writing using a temporal framework	positive effect on major ideas, not on specific fact recall
+ Slater (1985)	gr. 8	Note making using summary writing & structural organizers	positive result, best improvement cited with note making
+ Wander (1996)	gr. 5	SQ3R, SQ4R	both strategies improved recall & questioning skills over regular instruction
+/- Slade (1984)	gr. 6	SQ3R	no significant academic gains, noted gains in student attitude
+ Powell & Zalud (1982)	EMR/ LD, age 15-19	SQ3R, adapted as a "fill-in-the-blank" guideline	gains in grade point average, gains in confidence
+ Adams, Carnine & Gersten (1982)	gr.5 (weak study skill)	SQ3R	significant gains on short answer test, some with retelling

+ indicates study was effective

- indicates study was ineffective

+/- indicates mixed results

Table of Studies that Investigated Metacognitive Instruction and Reader

Confidence/Attitude

Study	Grade	Strategy	Significance
+ Fralick (1990)	gr. 6 & 7	learning styles, previewing, outlining, note making, study skills	improved general student attitude
+ Eberling (1998)	college	comprehension monitoring, note making, & study skills	improved student attitude
+/- Hickerson (1986)	gr. 7 & 10	text structure	significantly improved attitude in gr. 7, not gr. 10
+/- Roberts (1993)	gr. 5 to 8 struggling students	various reading skills, taught through a workshop	significant gains in attitude noted only with those having the poorest initial attitude, or lowest self-esteem
+ Collins (1991)	gr. 5 to 8	various metacognitive thinking skills	higher scores on measures of self-esteem than control group
+ O'Dell (1980)	college	reading comprehension strategies, note making, & expository writing	gains noted in all areas, but especially in self-confidence
+ Langer & Neal (1987)	struggling university	note making, summarizing, SQ3R, graphic organizers	significant gains in self-confidence
+ McIntyre (1993)	college	general metacognitive awareness	significant improvement in confidence

+ indicates strategy was effective

- indicates strategy was ineffective

+/- indicates mixed results

56

CHAPTER THREE

Methods and Procedures

Statement of the Problem

The purpose of this study was to explore the effectiveness of teaching four metacognitive strategies to a small group of six weak adolescent students from the following perspectives: the transfer of strategies to content area classes, and the changes in student confidence in reading class-related content area texts. The study tracked the six grade seven participants through several small group sessions in a six-week period and then determined differences in academic confidence in content areas of Social Studies and Science and in the participants' self-confidence in reading those content area texts. To do this, the following questions about transfer of strategies and reader confidence were addressed:

1. What transfer occurred from the reading strategy lessons to content area classrooms?

2. What changes were noted in reader confidence in reading content area texts?

3. What are the self-perceptions of the transfer of strategies to content area reading tasks?

Student Selection

Student selection was carried out in conjunction with the content area teacher. Students were selected because of their struggle with the academic demands in content areas and poor understanding of the textual material. These students had a history of academic difficulties and, at the time of the selection, were failing at least one core subject. Furthermore, they all admitted that the textual materials in their content areas were challenging and often frustrating.

Students all came from a grade seven class where the four core subjects, Language Arts, Math, Social Studies and Science, were taught by the same home room teacher. The male teacher had been teaching at the grade seven level for many years and conducted organized and orderly classes. He frequently used projects and research groups in Social Studies which included research using the Internet as well as the school library. Students were expected to read information, make notes and produce reports based on the information they had located. This teacher keeps abreast with developments in curriculum and incorporates new ideas regularly into his units. He frequently uses technology to enhance his programs. Students in this class enjoyed and responded well to his use of computers in both Math and Language Arts.

The group selected consisted of two females and four males, all at the grade seven level. All students had been given the option to attend the sessions and chose to participate.

Overview of Procedures

    a.) Prestudy questionnaires

    b.) Teacher instruction through modelling and guided practice

    c.) Independent practice

    d.) Observations by classroom teacher and researcher

    e.) Poststudy questionnaire and interview

Overview of Assessment Tools

Three prestudy assessment tools were used:

    a.) Rhody Secondary Reading Attitude Assessment (Appendix A)

    b.) Questionnaire on Reading Strategies (Appendix B)

    c.) Student Perceptions on Content Area Reading, Form A (Appendix C)

During the study, assessment of student use of strategies included discussions with students before class, student exit slips, researcher observations during the practice sessions, student responses, and classroom observations by the content area teacher.

Two post study assessment tools were used:

    a.) Questionnaire on Reading Strategies (Appendix B)

    b.) Student Perceptions of Content Area Reading, Form B (Appendix D)

Oral data were also compiled through field notes of class observations and discussions. Oral assessments and the final interviews were audio taped and tapes were transcribed by the researcher.

Detailed Explanation of Procedures

Surveys and Questionnaires.

Initial information was gathered through the means of surveys and questionnaires included in the appendix. These were administered before any instruction occurred and a pair of modified surveys was administered at the end of the study. The questions sought to address the effect of instruction on changing confidence of readers. Responses provided direction for conclusions for the research questions:

1. What transfer occurred from the reading strategy lessons to content area classrooms?

2. What changes were noted in reader confidence in reading content area texts?

3. What are the student's self-perceptions of the transfer of strategies to content area reading tasks?

Before beginning any work with metacognitive strategies, participants completed two questionnaires. These provided background information about the students' attitudes toward reading, students' perceived reading problems and on methods students preferred or chose to use to understand difficult text.

The first questionnaire, the Rhody Secondary Reading Attitude Assessment, was a set of statements that aimed at detecting patterns among reading habits and provided background information about student's attitude toward reading.

A second questionnaire, The Questionnaire on Reading Strategies, was given both before and after the study. Here, students answered questions designed to define changes in perceptions of themselves as readers. Students were again asked about reading habits, problems, and strategies. Responses were used as part of the data for determining whether the strategies taught had become a part of the student's repertoire of reading strategies. Self-evaluations also provided information on these students' perceived abilities and changes in their capabilities as readers.

The questionnaires were carefully administered. The final questionnaires were part of a taped interview that was later transcribed. With each survey, I believe there was a delicate balance between questions that were fast and simple to complete with those that provided detailed and useful information. The questionnaires included detailed responses and rated responses (that is--strongly disagree to strongly agree or always to never). Because the questionnaires were given to a number of students who had been identified as weak readers, the researcher read questions aloud to participants as they followed and rated the statements. The oral poststudy interview with each participant provided candid opinions often followed by verbal explanations. Such clarification was extremely useful in determining the changes in reader confidence. It also overcame the problem that likely would have been encountered if a written response had been expected as weak readers are

61

usually uninspired and terse writers, so any written responses would have probably been brief and lacking in detail.

McNicholl (1991) encountered this type of problem on a posttest. The study also included low-achieving students, some with behavioural problems. Instruction of learning strategies stressed comprehension and metacognitive skills. However, the study was unable to demonstrate significant statistical improvements in either comprehension or self-esteem. The model appeared effective because 35 of the 37 students successfully completed the course. Part of the reason there was no change on posttests was attributed to the study's design. Posttests were administered at the end of the year after the completion of the program. The students had obviously filled answers on the posttest in an attempt to finish quickly and without great concern for accuracy. The teachers felt the strategies had been effective in increasing reading comprehension, particularly in content area reading. Unfortunately, the test design and timing of the posttest did not provide statistical evidence to support those feelings.

For the purposes of this study, desired details, then, were obtained through questionnaires and interviews which required the least amount of written response.

Awareness and Regulation

Metacognition and reading have been connected in two dimensions by Paris, Wasik and Turner (1991). One area of their interest centres around the perceptions and conceptualizations readers have about the task of reading.

62

What do readers know about the act of reading? Conceptual awareness is addressed through questions such as "What makes someone a good reader?" and "What makes reading difficult?"

A second area of interest addresses the manner in which readers regulate their own thinking. Questions that examine this interest ask as to reading patterns, habits, and strategies used. Both areas are relevant to the direction of this study, and therefore, questionnaires were sought out and refined to gather information on both reader's monitoring and managing of reading comprehension.

Three Surveys Selected

Three useful surveys had been drawn from Vacca & Vacca (1986). Two surveys, the *Rhody Secondary Reading Attitude Assessment* and the *Questionnaire on Reading Strategies* were administered to the group as the researcher read the questions aloud and participants scored the surveys. Of these two, only the latter was used as a postassessment tool because of its potential to provide responses about strategic learning. The third survey was a series of eight questions directed at gleaning information about the participant's personal set of strategies for attacking content area reading. This set of questions, *Student Perceptions in Content Area Reading*, required reflective responses about the student's self-perception of reading ability and areas of weakness. It also asked the student to define the qualities of a successful reader in the content area and finally asked about the use of particular

63

strategies. The post-study questions were aimed at those strategies explicitly taught through the study: Survey, Reading Notes, GIST (Summarizing), and SQ3R (a study technique). This survey was the basis for the individual interviews between the researcher and the participants.

Two of these surveys, as indicated in the appendix, were administered twice, first, before any instruction and then again as a postassessment device. The comparison of the pre- and post-treatment responses was a useful indicator about the success of the instructional activities on increasing students' confidence as readers and on their development as strategic readers.

Anecdotal Data Collection

As this study progressed, the researcher maintained a journal of anecdotal incidents for data collection, noting student attitudes and responses to strategies. These incidents were sifted, sorted, and analysed to track patterns, successes, and pitfalls. Often, spontaneous comments caught in the daily journal provided insights upon reflection. Upon entering classes students were probed with respect to current content area activities and reading. The researcher asked that students reflect upon strategies learned and their classroom reading during those opening moments. Students were also asked to do such reflective thinking at the close of sessions, sometimes orally and sometimes on exit slips. These comments allowed the researcher to monitor and reflect regularly on progress. Reflective writing provided an opportunity to more carefully examine those items that worked well and to explore alternatives

for difficulties encountered. This data provided a more rounded portrait of the students' changes and of their "gut reactions" to the activities.

This type of data collection showed the difficulty of maintaining a journal for a teacher with a full schedule of classes. Reflective writing of this nature required daily (or at least regular) vigilance where time was specifically set aside to think and write. Such a task proved difficult when other matters took "priority" and journaling got postponed. Opportunities at the end of workshop sessions where the researcher and students wrote journal entries proved to be an effective method of jotting quick notes which could later be expanded.

Progress in Content Area Units

As the study was in progress, the classroom teacher also contributed by maintaining an open dialogue with the researcher about the students' class work and scores. The teacher also made a set of observation notes about reading behaviours during a classroom session that required independent reading of new content area text to gain a better gauge of the students' application of strategies in the classroom.

After the study was completed, the content area teacher was interviewed about students' progress in content area units. These responses and classroom assessment were also a part of the data used to detect transfer made from the study sessions to the content area classrooms. As textual materials used throughout the study were taken directly from class texts in Science and Social Studies, students were encouraged to seek a clearer understanding and better

65

working knowledge of the current units. In fact, the pages of the material used during the study correlated directly with the unit being studied in the classroom. Samples of text were taken from the sections that the students had not yet studied so the readings were not familiar. Samples were also taken on topics that they would study, and this was made clear to students so that the content would be relevant and hopefully, important to the participants. Reading material was selected in this way so that participants would view the strategies as meaningful and applicable.

Method of Instruction

Students in the study group learned the selected metacognitive strategies through *Direct Instruction* or through *Explicit Teaching of Reading Comprehension* (Tierney, Readence & Dishner, 1995). This method of instruction draws learners toward better reading through modelling, guided practice and finally independent practice. According to Tierney, Readence and Dishner (1995), explicit teaching has several variations, but the following make up common features of explicit teaching:

1. Relevance: students are made aware of the purpose of the skill or strategy--the why, when, how, and where of the strategy.

2. Definition: students are informed about how to apply the skills by making public the skill or strategy, modelling its use, discussing its range of utility, and illustrating what it is not.

3. Guided Practice: students are given feedback on their own use of the strategy or skill.

4. Self-regulation: students are given opportunities to try out the strategy for themselves and develop ways to monitor their own use of the strategy or skill.

5. Gradual release of responsibility: the teacher initially models and directs the students' learning; as the lesson progresses, the teacher gradually gives more responsibility to the student.

6. Application: students are given the opportunity to try their skills and strategies in independent learning situations, including nonschool tasks. (p. 280)

While this study addressed only four reading strategies, an average of four classes was dedicated to teaching each strategy. An introductory class for each discussed relevance and explained the strategy. The researcher modelled the strategy using a passage selected from one current unit being studied in grade seven. If time permitted, guided practice was also included during this session. The three following sessions included activities of guided practice leading toward independent practice.

As the researcher presented situations for practice, opportunity for discussion on the strategy's merits or problems also directed students to respond personally. Discussion coaxed students to consider the potential for the

67

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strategy and possible applications for their own reading. There was also time to clarify areas of confusion and answer questions.

The following metacognitive strategies were included:

1) Survey (A method of previewing text, outlined by Aukerman, 1972.)

2) Summarizing (GIST)

3) Reading Notes (Critical and Question Notes used again later as part of SQ3R)

4) Guided technique, (SQ3R)

Brief Description of Survey

This metacognitive strategy was used as a step-by-step process that encouraged readers to consider textual information such as titles, subtitles, opening, visuals and closing paragraphs. Often useful inclusions to the survey were chapter-end questions or reading-assessment questions provided by the text or teacher. SQ3R, the final strategy studied with students, similarly recommended these items be part of the survey, but the step-by-step checklist developed by Aukerman (1972) provided a comfortable learning support until the task became mastered and automatic. Because they repeated this strategy with SQ3R, students were competent with the steps using several types of content area materials. Independence with this strategy eased the transition to SQ3R.

Brief Description of GIST

The instructional method for GIST involved a two-stage process, moving from a paragraph version to a short passage version. The expected outcome, a

short summary, remained consistent throughout the process. Students read a passage and attempted to fit the main idea into fifteen spaces. As they read farther into the text, students rewrote the fifteen words, trying to fit the main ideas of the whole passage into the new summary.

Brief Description of Critical and Question Notes

Critical notes or critical annotations are the reader's reaction or response to the passage's thesis or main idea. It answers the question, "So what?" In writing critical notes, the reader should first state the author's thesis, then state his or her position in relation to the thesis and finally defend or expand on the position taken (Vacca & Vacca, 1996).

"Question notes" or "question annotations" are a means to raise an important issue as a question. The question should reflect what the reader sees to be the most important topic or issue of what has been read. Because both annotations are issues based, they are not equally suitable in all areas of content area reading. A paraphrase or summary such as the one generated through GIST should contain a thesis, and that may guide the direction of these types of annotations.

Brief Description of SQ3R

Robinson (1970) developed SQ3R as a study tool to learn information from a content area reading. As earlier stated the struggling reader often uses the same linear strategy to read all texts, whether fictional of informational. Robinson's strategy discourages reading as merely a linear process from

69

beginning to end, preferring instead thoughtful meaning-making through a five-step strategy. These five steps of SQ3R are as follows: *Survey, Question, Read, Recite, and Review.*

When SQ3R is taught, readers are encouraged to draw away from their sometimes faulty strategies and are coaxed into active reading, questioning and identifying key concepts. The questions composed from topic headings direct the reader to self-check comprehension, either in written or oral form, although Robinson stated the first is more effective.

Note-taking is also a focus of instructions during the process of SQ3R. Readers were directed to learn note-taking skills that differ from copying verbatim from the text. Students were directed to read an entire selection under a heading, and then write from memory a summary or brief words and phrases. Since students had previously written short summaries using GIST, this strategy was incorporated during this study. The strategy used to write critical notes and question notes was also called into practice. Finally, the students used these notes to check comprehension and learning, by reviewing the notes, covering, reciting, and checking.

Robinson claims that with practice, users of SQ3R will have a polished and efficient method for faster reading, picking out the important points, and fixing them into memory. In fact, students in this study found another outcome, test and report questions were familiar, as the questions generated from headings were often the information emphasized by the teacher. My students

found that they were better able to predict the important information for projects and tests as SQ3R steered them to key concepts.

Summary of Time-line

When all the strategies had been instructed in this manner, participants responded again to the questionnaire on reading strategies and on student perceptions on content area reading. Following this outline, the average number of 35-40 minute classes was four slots per strategy. An additional class was used to administer the prestudy surveys. Two classes were also required to administer the poststudy surveys, as each student was individually interviewed. The time for the study group was twenty classes. Timetabling in the school and holidays allowed the group to meet only three to four days each week so that the study was completed in six weeks.

Final Assessment Tools

At the close of the instruction and practice time, the researcher asked each student to complete the questionnaire on reading strategies (Appendix B). The identical questionnaire had been read to the students during the first class of the study. At this point, students completed the questionnaire independently, and then responded on an exit slip as a final reflection on the study. Writing prompts given asked students to focus on strategies that had been useful and those that had been less so. They were also asked to reflect on their own habits and method of dealing with content area text, and make comments about changes that had occurred. Finally, students were asked whether they believed

the sessions had been worthwhile to them, and whether similar sessions would be worthwhile to other students. These prompts directed students to think about their growth and confidence as content area readers. I hoped to be able to discuss the students' progress in content areas and to gain a sense whether transfer of studied metacognitive strategies has made a difference to content area class work. I hoped that postquestionnaires and exit slips would provide reliable information for an answer to my questions:

1. What transfer occurs from the reading strategy lessons to content area classrooms?

2. What changes in reader confidence occur when working with content area reading materials?

3. What do students perceive as the transfer of strategies to their content area reading tasks?

The students then returned for an additional interview based on the questionnaire, "Student Perceptions on Content Area Reading, Part B" (Appendix D). This interview was audio taped and transcribed later. Students were probed to clarify and give further explanations to several questions, so that more detailed information was gathered about reading. Through such probing, several students gave details on the strategies used for reading and learning and revealed more about their perception of classroom performance. A more detailed explanation of each student's response appears in Chapter Four.

CHAPTER FOUR

Review and Discussion of Data

This study sought to investigate the effectiveness of teaching four metacognitive strategies to a small group of six struggling adolescent students. Throughout the study, information was gathered in an attempt to address student changes from two perspectives: the transfer of strategies to content area classes and changes of student confidence in content area reading. While students studied the four strategies: previewing text, summary-writing, note-making, and SQ3R, data was collected through surveys, class discussion, student interviews, journal responses, and classroom teacher's observations.

This chapter is divided into six sections. Each section is a narrative that describes the raw data for each student, including a brief set of background information. Some details of school history and areas of academic difficulty are included to provide a more rounded presentation of the student. The section then tracks the student's responses, following the time line below, to trace learning with respect to the metacognitive strategies and growth in confidence. Concluding remarks in the section attempt to summarize significant improvements for the questions of the study:

1. What transfer occurred from the reading strategy lessons to content area classrooms?

2. What changes were noted in reader confidence in reading content area texts?

73

3. What are the self-perceptions of strategy transfer to content area reading tasks?

Outline of Individual Data as Presented

A. Background

    Brief description of student

    Family and school history

B. Indicators from prestudy session

    Rhody Secondary Reading Attitude Assessment

    Questionnaire on Reading Strategies, Prestudy (Form A)

C. Indications during study sessions

    Observations by researcher

    Student remarks, journal entries and behaviours

D. Indicators from poststudy session

    Individual comments during interview

    Questionnaire on Reading Strategies, Poststudy (Form B)

E. Summary

    Brief Overview of Student Behavior and Changes

Student One: Shayne

Background

Shayne is dark, very tall for his age, and has the lean physique of an athlete who has begun to develop broad shoulders. His hair is neatly clipped short and tends to curl at the back. He has a winning smile and a sense of humour that are especially interesting for the girls of the class.

Shayne is the youngest of three boys. He has a very supportive home with parents who expect him to complete high school. During his primary years, when learning the basic skills of reading proved difficult, Shayne's parents and siblings committed regular blocks of time to reading at home with him. Since then, they have tutored him at home with spelling and writing skills, but he is now often argumentative and balks at homework. Shayne has exceptionally poor spelling and writing mechanics, which affect his written products in all areas of school. About one year ago, after consultation with parents, Shayne dropped Second Language Instruction (French) from his timetable to use that time with a tutor in an effort to build skills and improve content area work.

Because he struggles academically, Shayne's social popularity is a boost to his self-confidence in school, helping overcome the stigma sometimes attached to poor readers. He had difficulty reading in the primary grades and continued to be a poor oral reader. He misreads words, rarely self-corrects and even creates new words such as "fletch" for "fetch" and "strudged" for "struggled". Word substitutions change the meaning of the passage: "Several

75

towns, he felt lost," should have been "Several *times* he felt lost." In spite of the errors, Shayne usually gets the main idea of the passage. He has an excellent bank of general world knowledge and relates information to background knowledge well. Reading assessments showed broad understanding, but frequently poor recall of details about the information. Standardized testing annually done at school consistently shows Shayne to be a weak reader, about two years below level.

Indicators from Prestudy Session

Perhaps then, his responses on the Rhody Secondary Reading Attitude Assessment are not surprising. Shayne says he seldom reads a book, has little interest in reading and no interest in reading for pleasure. While he does visit the library regularly, this is a mandatory visit made with his class where he is obligated to check out at least one book. He claims he hates reading and that it takes a long time to read a book. In his eyes, people who read a lot are strange.

When asked about reading in content areas with the prestudy Questionnaire on Reading Strategies, Shayne did appear to have some good strategies in place for dealing with text. He indicated that he looked ahead at the pictures. However, he admitted that he "looked at all the pictures in the whole textbook first," and he knew about the benefit of underlining important parts. He said, "Underlining works, but I don't do it. It takes too long." Shayne also suggested that he often thought "of something else while reading," because

he was "usually finished reading first". In Shayne's opinion, "the best readers read fast."

Observations made by the researcher on the first session with a sample reading revealed that Shayne read from beginning to end and was by far the fastest reader in the group. When completed, he looked away from the passage and sat waiting for "the next job."

Shayne also demonstrated knowledge of some other good reading strategies. He knew about asking himself or others about parts not understood or main ideas and checking to see if he could recall key points. However, he also frequently used more faulty strategies such as reading as fast as he could and skipping parts not understood. When asked if he came back to the sections he didn't understand, Shayne admitted "Not usually . . . when you're done reading, you're done." He claimed that in class, "If I have trouble understanding, I just sit there."

Indications during Study Sessions

Throughout the first few sessions of the workshop, Shayne seemed bored and off-topic for much of the class yet he exhibited an eagerness to try new methods. He was cooperative, but his responses showed that he relied heavily on group or partner ideas. When he needed individually to work with a reading passage, his initial response was to give up. An example of his resignation to accept defeat is evidenced in the researcher's journal, following the guided practice for Survey. "Shayne sat looking at the passage for a time, not reading,

77

just assessing the task. He said 'It's too hard.' and pointed to the reading. I said, 'What have we practiced in our groups?' Within a few seconds, his eyes moved back to the page, and he picked up his pen. He began to use the headings to generate questions and then put notes under the questions as he read. He moved to the next block of text with the same strategy. He CAN do it! Confidently. He worked well during the practice sessions, stopping only at the bell."

Shayne's attitude toward taking the time to read and learn information continued to be an area of struggle. After learning to make summaries and other notes, Shayne stated that "this is a better way to study, IF I'm going to study." Although he saw value in the strategy, it seemed uncertain that he would he choose to use it.

Indicators from the Poststudy Session

During the final interview, Shayne was questioned about his use of strategies with his content areas. He admitted that although he knew how, he was not applying the strategies and was not ready to commit the time required to improve strategies. In the final interview with the researcher, he stated that he did not make questions or summaries while reading. If he made notes, he "read it and if it looked like something interesting, (he) just wrote it down." He didn't usually make notes because it took "too much time." Shayne claimed he did work at home on class work, and tried to learn the information. When questioned "What do you do if you are stuck when reading?", he replied "I read

78

it, that's all." When asked what specifically "I read it" meant, Shayne said that he no longer thought of something else while reading, nor did he skip parts not understood without returning to them, (he usually reread them), and he no longer read as fast as he could.

Summary

Shayne's seemingly stubborn unwillingness to use the tools and strategies of which he had confidently shown mastery was both frustrating and insurmountable. He could confidently pull the strategies out to apply them whenever the classroom teacher or sessions required it of him. Yet, he did not independently select those strategies for personal use. Transfer of the strategies into content areas was evident only when so directed by the teacher. However, on a more positive note, Shayne did better recognize the negative strategies, and had adopted the strategy of rereading difficult passages. He appeared to have put aside some of the less useful strategies and internalized better strategies. There was a notable increase in self-confidence in his own ability to *read it*, where he previously had been resigned to defeat.

Student Two: Stacy

Background

Stacy is blond with smiling blue eyes. She is athletic and participates in nearly all intermural sports. She is well-liked by all students and respected by teachers for her hard-work ethic. Stacy always completes tasks, studies for tests and unfailingly completes homework. In class, she is quiet, not especially self-

confident, but will say when she is having trouble. Stacy is not a risk-taker, but hesitates when called upon to share her ideas with a group, although she bubbles with eagerness in a group of friends. She is a careful reader, slower than others. Her reading scores on the annual standardized tests suggest that she reads at level. Her writing is neat and has few errors. Although Stacy often struggles to learn new information, she usually maintains a C average, largely because she completes assignments to the best of her ability. She wants to please the teachers, paying attention to instructions and trying hard to meet class expectations.

Indicators from the Prestudy Session

Stacy believes she is not a "smart student". She finds reading in the content areas difficult. Her responses on the Rhody Secondary Reading Attitude Assessment indicate that she does not read in her free time, but has a positive attitude to reading overall. She thinks "kids who read a lot are okay" and would not make fun of them. Her room has many books, but she says it takes a long time to finish a book. She visits the library with her class and completes the mandatory book reports for her teachers. Stacy remembers the books she has read and admits a few have "been really good."

However, Stacy still finds "school can be hard." She said that she was aware of some metacognitive strategies, though she did not seem to use many. She indicated that she looked ahead at the pictures while reading and thought of other things that connected to the text while she was reading. However, she

80

said that she almost never used other strategies like underlining, asking herself questions about ideas or parts not understood, checking back, and returning to parts not understood. Stacy did admit that she thought "checking back to remember is a good idea." When she reaches a part she doesn't understand she "reads it over and over" and goes on. If she "can't get it," she asks "a friend." Furthermore, she recognized negative strategies such as copying the passage verbatim. Yet, she admitted that when she wanted to make study notes, she would "take a sentence out of each paragraph on the page . . . (and) copy right out of the book." Stacy stated she did not read as fast as possible, or repeat words often. When she had to study, she would reread the chapter "and get someone, like (her) mom to quiz" her.

Indications during Study Sessions

Stacy cooperated well through the sessions, participating in the activities, although many more verbal group members overshadowed her during discussion. Observations made by the researcher suggested that Stacy was becoming an independent user of the strategies presented to the group. One journal entry made by the researcher about half way through the sessions recorded that "Stacy is looking at the headings and captions now. She predicts information. Makes useful questions. She looked at the independent passage today much longer than the others before beginning to read. Her survey questions and notes were great." Another response by Stacy during a class discussion also confirmed Stacy was excited about the strategies. "This really

81

helps it stick in your head. We have to read about lots of stuff in Social Studies and Science and learn it."

Indicators from the Poststudy Session

During the final interview with the researcher, Stacy reflected that she was now working on a Social Studies project where the class needed "to make notes off the textbook." She described her strategy: "Just . . . look for the subtitle . . . and then copy, well, we don't copy word for word, . . . whatever seems important . . . The reading is not really tough, but I'm not the best reader." When asked if she understands what she is reading, she nods. When asked about the strategies used, Stacy says that she almost always asks questions and checks to see if she recalls key points. She was much more able to gauge good strategies and set those apart from less helpful strategies, than she had been before the workshop sessions.

Stacy also wrote in her last journal entry that the strategy (SQ3R) "is useful for studying before tests and it is useful to learn about that subject. You could use it in an assignment (like) Social Studies reading and Science reading. It would not be as good for LA novels, but it could be useful for Geography." Stacy also described her study technique during the final interview with the researcher as one where she would "read things over and quiz (herself) sometimes." When asked if she wrote questions on paper, she replied, "Sometimes, not all the time." She stated that she found the reading workshop useful because she "got a better marks."

Summary

Stacy appeared to begin the sessions as a less strategic learner than she ended. Though she was initially unaware of the strategies she was using, she added strategies to her repertoire and used them. While Stacy would not state that she was a better reader, she did have fewer difficulties managing the content area textbooks and she thought she probably studied better. Her self-confidence with content area reading was clearly greater. Her classroom teacher noted that Stacy's marks went up during the term and she did better on tests than she had before. Of all the students in the group, her score on the Questionnaire on Reading Strategies rose most substantially, showing improved awareness on seven of the ten strategies listed. On the remaining three strategies, Stacy had initially shown good use of them and she remained consistent with them at the end of the study. She displayed good awareness of those metacognitive strategies, improved use of good strategies in content areas and appeared to be more confident in her ability to manage content area reading. Where Stacy began the sessions with the belief that she was not a "smart student", she left the sessions with a feeling of self-confidence.

Student Three: Arlis

Background

Arlis is a husky boy with short hair streaked in a brassy blond. He is usually pleasant and likes to socialize with peers. His clothes are fashionable, loose and comfortable, reflecting his personality. He wears glasses, round wire

frames and seems to have a speculative gaze, as though he is constantly assessing the situation. Although he is cooperative in a one-on-one setting, he has a history of behavioral problems in class. He seems to have an image to maintain in the class, and can be defiant. He distracts others and gets the group off the topic with his quick answers. He does not go out of his way to help in class, nor attempt to keep a neat binder, hand in completed work, or organize for the day. Arlis is not a reader; he frequently does not complete class book reports and "looks at magazines" during his library period.

Arlis has had a long history of academic problems. He had difficulty learning to read in the primary grades. He continues to be a weak student, although he is not a weak reader. Standardized testing suggests he can read above level passages although his scores in vocabulary are low. His classroom teacher reports that Arlis is "much more capable than school marks show, but he lacks enthusiasm and application in school." By the middle of the school year, he was a student at risk of retention, failing all core subjects, Social Studies, Science, Math and Language Arts. The classroom teacher also noted that Arlis "did little or no homework."

Indicators from Prestudy Session

When Arlis reflected on his use of reading strategies using the Questionnaire on Reading Strategies before the workshop, he appeared to have a mixture of positive and negative strategies. He said that he checked to see if he could recall key points, skipped or asked question about parts not

84

understood. Yet he also tried to "learn" by repeating the words often. Arlis felt that "the best way to remember information is to memorize it," but he did not study, "maybe about 1% (of the time.)" He used no note taking strategies; in his words, "Why would you write down what's already in the textbook?"

Observations made by the researcher during the prestudy session showed that Arlis "read fast, and reread a sentence that he seemed to find difficult. When asked to reflect upon his reading, he said that he tried to understand most of it . . . He almost understood it."

Arlis did not complete the Rhody Secondary Reading Attitude Assessment as he left the prestudy session early for an appointment. However, Arlis fits the profile of many other group members who do not read for pleasure, and visit the library only as a class requirement.

Indications during the Study Sessions

During the sessions, Arlis frequently appeared disinterested and off the topic. During paired practice sessions, Arlis was slow to start and always tried to convince his partner to do the writing. Several times the researcher became his partner because he was distracting other group members. On one such occasion, the researcher reflected that "I need to coax Arlis to produce constantly . . . He can summarize well orally, but I feel as if he lacks the energy even to put the words on paper." After the final session, the researcher's journal entry read, "Arlis put very little serious effort into the activities. In class today he said, 'We know how to study, but I still don't.'"

Indicators from the Poststudy Session

In the final interview, where no peers were present, Arlis presented a different picture of himself. When asked how the reading workshop was useful, he replied, "It helped me. I made better paragraphs. We just had a quiz, and I got 17/17 on my paragraph. My studying is different now. (To get a good grade), I need to work hard, (that means) working in class, answering questions, and reading the text again. I have to catch up on work and on tests, if I study, I can do good on tests." When asked how he learned information, he answered "I studied it . . . go over and over it. I know how to study. I read it, and put it down and write questions to ask myself on a piece of paper, and tell my parents to ask me the questions and then answer them." To answer the questions, he would "look it (the text) over for the approximate words, skim it, and use clues to find answers like using headings." When asked how often he would be likely to do that, he replied, "Sometimes, but not always, but when I do it, it really helps."

Summary

In spite of lacking effort during the sessions, Arlis was using better strategies within his content areas. He also said on his poststudy survey on reading strategies that he now almost always underlined important parts. Several negative strategies that he had been using before the sessions were now listed as almost never used: say words over and over, read as fast as possible and thinking of something else while reading. He seemed confident about the strategies. In fact, his opinion on the characteristics of a good reader

had changed from someone who "reads fast" to someone "who reads fast and he reads it over and while he is doing his question, he looks back. He reads it over again." It would appear that Arlis had a new perception on the process of reading. He had moved away from the ideal of speed and toward the goal of comprehension. His self-esteem had improved, reflecting the added confidence he now appeared to have with content area reading.

Student Four: Luke

Background

Luke is a tall athlete. He has a cutting wit that attracts some students and angers others. In a group of peers, he is usually the center, directing the laughter. In class, he responds orally eagerly and is very articulate about his rationale and thinking process.

Academically, Luke is a bright student, quick to learn new concepts. However, he is a struggling reader. He would like to be able to "read better" and in his eyes, the "best readers read fast." He reads very slowly and with poor comprehension. He consistently scores about two grades below level on a standardized testing done at the school. He also has poor mechanics in writing: weak spelling, paragraphing, sentence structure, and punctuation.

Indicators from Prestudy Session

On the Rhody Secondary Reading Attitude Assessment, Luke admitted he "hates reading," but he "does sometimes read". His home has many books, and he enjoys books about sports. On the other hand, he thinks people who

87

read lots are strange. He would rather just have someone tell him the information, than bother reading.

When Luke was surveyed with the Questionnaire on Reading Strategies, he appeared to use very few strategies to manage difficult reading and seemed frustrated. He did look at the pictures and captions first, and asked questions about parts not understood. However, if he had trouble, he also noted that he might "sit there until the class is over."

Luke did recognize several negative strategies to be "useless." When asked about copying, he replied, "I never copy it out." Yet, if Luke had to write a response or answer questions about a passage, he stated with a sideways smile, "I copy from the book." Luke also believed repeating words over and over almost never helped, nor reading as fast as possible.

However, Luke said that he almost never used any of the other possible strategies surveyed or was unsure about the value or usefulness of some. In a discussion about mentally asking questions while reading, Luke commented that "you can ask anything as long as you're paying attention because it's not like you're gonna learn anything by asking yourself questions . . . It almost never helps." He appeared to have no faith in the strategy or perhaps had no understanding of the rationale for the strategy.

Similarly, Luke was at a loss with the idea of skipping parts not understood. When prompted about skipping and coming back later, he retorted, "That helps, but if I still don't understand, what then?" He said, "If you don't

understand, you don't really know what it means anyway so it doesn't matter if you read every word."

Indications during Study Sessions

During the sessions, Luke actively participated in the tasks, often taking leadership in activities. After working with a group on the strategy of making questions from headings, pictorial aids and bold printed words, and then make reading notes, Luke breezed confidently through four pages of text. The researcher made this journal entry, "Luke was stuck looking at a picture during his initial survey and his eyes kept swinging back from the picture to the print. He said, 'I don't know how this is connected to the chapter.' I responded, 'Can this be a question you ask as you read?' 'I'm doing that', he said and proceeded to read the chapter."

The classroom teacher observed Luke's performance on a quiz on that section a few days later: "Luke began immediately, worked steadily, asked one clarification question and was done well within the time." Closer analysis of the quiz revealed that Luke had done well on the part that required identification of concepts. Yet he had done poorly on the sections that required him to explain concepts. Luke's comment in the session was that "these (survey and note taking) could be useful if I took more time to study. It makes it easier to study and get better grades. These are better ways to study."

Indicators from the Poststudy Session

At the end of the sessions, Luke believed that he had become better at finding good strategies when needed. He showed frequent use of five positive strategies: looking ahead at the pictures, asking questions about parts not understood, underlining, checking recall on key points, and asking about main ideas, where he had previously shown only the first two. He said in his final interview that on his last test he "made point-form notes" and used questions to study. He recognized the benefit of summary writing because "it is a lot easier to study then." To make notes, he would "look over the chapter, . . . skim it, . . . and write down the notes that (I think) will be on the test from the study sheet and write that down." When asked about his success in class, Luke replied with a smile, "I'm getting 70's now."

Luke's performance in school made a turn for the better. Not only had his grades improved in those content areas that he had previously been failing, his classroom teacher stated midway through the sessions that Luke's "attitude had improved overall." Luke also displayed his newfound enthusiasm in his comments at the end of the sessions. "This reading workshop should keep going into the next grade because it helps me understand my other subjects. Using textbooks to teach reading skills is great because it carries over better because it is exactly what we are doing in class. When we do some reading here and then do it in class, I read it again, check whether I know what it is about. Then I can do better on my tests."

Summary

Luke was more confident in his content areas after the study. He clearly had shown increased awareness of metacognitive strategies and claimed that he was using them to pull off better grades. He recognized difficulties in reading in the content areas and had better strategies after the study for managing the texts. He felt successful and was enthusiastic about the sessions. His self-confidence in content area reading had improved and a corresponding change in self-esteem was also evident.

Student Five: Andrea

Background

Andrea is the oldest of a family of four children. She is the only girl, quiet and slightly insecure. Her brothers are athletic and energetic, so she presents a noticeable contrast. She is blond and slight, and always neatly dressed. She gets along well with her peers at school, but has only one close friend.

Andrea works hard in school, doing homework and reviewing for tests. However, Andrea's marks in class are poor and the classroom teacher was worried about her poor academics in content areas. Reading comprehension and writing are areas of weakness. On standardized tests, Andrea consistently scores about two grades below level. She scores particularly low on the vocabulary portions of those tests. She has struggled with reading since her primary grades. Her parents have encouraged her gently to "do her best," but

have remained at arms' length from the school, rarely attending school functions or parents' days.

<u>Indicators from Prestudy Session</u>

Andrea struggles with reading in the content areas, although she does read in her spare time. While completing the Rhody Secondary Reading Attitude Assessment, she is currently hooked into reading books from the "Babysitter's Club," a series designed for a young adolescent audience. She does not think she reads "a lot, at least not as much as some people do." She thinks, the "best readers read a lot." She claims that she "hates reading," and that "it takes her a long time to read a book".

During the prestudy session, Andrea showed that she had some good strategies in place. On the Questionnaire on Reading Strategies, Andrea said that she looked at pictures first, checked recall of key points and asked questions about parts not understood. She regularly made notes from the textbook, and detailed her method saying, "I go over each paragraph and take two sentences from each of them. I have tried summary writing and when making notes I write out a section and try to put it in my own words . . . When I have to study and remember information, I read it over about a hundred times. I read it over and sometimes I get quizzed on that chapter. If I have trouble, I ask my friends."

Although good strategies were in place, Andrea was clearly having difficulty. An observation made by the researcher during the prestudy session

when Andrea was given a content area reading passage stated that "Andrea worked from beginning and read to the end . . . did not survey, or reread parts. She appears to have an average reading speed. Looked up puzzled, did not appear to understand content during the discussion that followed."

Indications during Study Sessions

Andrea appeared to refine some of her strategies throughout the workshop. One journal entry made by the researcher after the sessions on Survey noted that "she (Andrea) is looking ahead, stopping at headings and pictures—good strategy evident. I asked, 'So you skim?' She said, 'I guess so. I get the idea, the picture of the whole thing.' Without any further remarks, she worked hard and constantly."

Throughout the sessions, Andrea consistently let others take the lead. She appeared uncertain with each new strategy as it was presented and was clearly not a risk-taker. She benefitted from the guided practice as a means to become an adept user of the strategy. Near the end of the sessions, Andrea worked independently to summarize a section from the Science text. She was successful and at the end of the time stated, "This is too easy." A quick examination of her summaries by the researcher showed that she had not copied from the text.

Indicators from Poststudy Session

During the final interview, Andrea also said that she now had several strategies for dealing with difficult text. She observed that "sometimes I look at the book's print and stuff, when I remember, and sometimes when it's hard. (If I'm having trouble), I just skip a few and then read some of it and then go back and then read it again, then I probably get it right away." On the final questionnaire on reading strategies, Andrea also indicated that she had a greater number of good strategies that she almost always used. Before the study, she noted only two strategies, but at the close of the workshop, she noted use of four strategies. Andrea confidently identified all the negative strategies, listing those as "never" or "almost never" used. The classroom teacher observed that in spite of the fact Andrea was still clearly struggling with the course work, she was much more confident in her ability to handle the textual materials.

Summary

Over the time of the study, Andrea clearly changed her pattern of reading. She used an increased number of strategies and could more confidently identify good strategies and poor ones. Her behaviour in the last sessions suggested that she applied strategies to content area passages. Andrea responded well to the guided practice and gradual release of responsibility, working independently and with confidence using the strategies. An evident increase in reader confidence with the content area passages was evident.

Student Six: Dale

Background

Dale is the second youngest child in a large family. He is short among the others in his class, as if he has not yet begun his adolescent growth spurt. His hair is curly and short, and his face is freckled. His oldest sister is nearly finished high school and Dale's parents, especially mother, hope that he will do the same. His mother has been very supportive of Dale and works hard to give him the extra help he has needed with his academics. Dale has attended summer school to boost his progress in Math and Language Arts. He is also part of a Homework Club, and stays after school about twice a week to study and improve his grades.

Dale is a weak student who reads slowly, but reads at level according to standardized tests. He has good general knowledge, yet has difficulty in some areas such as Math. Unfortunately, he is a student who avoids homework and studying, or does a very quick job just to say he is finished. In class, he is dreamy, and often does not appear to be actively task-oriented. When the teacher gives instructions, he appears to need a long processing time, and he rarely volunteers to respond orally in class.

His classroom teacher has been very worried about his grades. By midyear, Dale was failing all four of his core content areas and was at risk of retention in grade seven. Not only was his work poorly done, he lacked the organization to get things in order. He often missed dates and deadlines, in

95

spite of a mandatory homework planner; poorly ordered notebooks and binders meant that assignments went "missing" or notes were lost. At this point, a parent-teacher meeting set up a plan to organize these books, set aside a regular study time, and complete overdue work. Dale claimed he was interested in better success at school and he worked hard toward improvement.

Soon after this meeting, Dale was recommended for inclusion in the study. He was eager to join the group, and was the first student to return his letter of permission.

Indicators from Prestudy Session

On the Rhody Secondary Reading Attitude Assessment, Dale showed that he does not see himself as a reader, although he does have books at home. He has several favorite authors that he often shares with his brother. The house does not have a television, so he reads during free time, in his words, "if there is nothing else to do." Dale does not hate reading and he actually likes to get books for gifts.

During the prestudy interview, Dale openly shared that he wanted to get better marks and learn how to do better in school. When asked what he was going to do, he replied, "to get a good grade, . . . I need to work. When I have to make notes, the best way is to do this in groups . . . I copy my notes out of the book. When I study, I memorize it by reading the notes over." On the Questionnaire on Reading Strategies, Dale said that he was very aware of good reading strategies, noting that four of the five positive strategies were helpful for

him. He stated that he always looked ahead at a passage before reading. "I don't even read it, I just look at the pictures and then I imagine what it's about. Reading the captions helps, too." However, he responded that he did not underline, nor did he skip parts he did not understand and return to them later. He also said that when he had to learn information, he memorized it, saying it repeatedly. He added, "Copying the section almost never helps me learn it."

Indications during the Study Sessions

During the sessions, Dale remarked several times that the ideas were valuable up to a point, "This (survey and GIST) would work for me, but I would need to take more time to read." He found the textual materials challenging. One entry from the researcher's journal near the end of the workshop, notes Dale's struggle: "Dale looks up and around frequently . . . chews his pencil . . . easily distracted by noise or movement. Seemed fixed upon the first words. 'How are you doing?' I asked. Dale said, 'I'm stuck.' 'What did we do when we worked with a partner?' He thought, then smiled and began to survey the chapter and jot down questions." However, as time progressed, Dale was more confident with his use of the strategies. At the last session, during a group discussion, Dale remarked, "I can write better paragraphs (for summaries) now."

Indicators from the Poststudy Session

At the final interview, Dale suggested that he was more able to carry out strategic learning, but still battled with the self-initiative to devote the time. His last journal entry noted that his method of studying in Math had changed. He

97

wrote, "A good set of study notes would have been useful for Math (too). I make my own questions. I used to read over the examples and did as many questions as I could to practice. (Now) I made myself questions and read it a couple (of times). I know how now to study better because I made up questions for myself and had to answer them."

Summary

Dale began the workshop with an awareness of strategic reading, and tried to use a number of strategies, but was not always using good strategies. He was not confident even with the strategies he tried to use, but he was ready for help. At the close of the sessions, Dale appeared to be more confident with the strategies. He could use them independently even in subject areas not addressed through the workshop. However, his performance in class was sporadic as he continued to forget about reading assignments, projects and tests. However, when he did take the time to put in the effort, he scored much higher than previously and his grades did go up significantly.

Summary of the Review and Discussion of Data

Five of the six students in the study appeared to have benefitted from the sessions and made some gains on one or both of the perspectives of the study. In the eyes of the researcher, this study was viewed as having a positive benefit to the group of students. Generally, when working with struggling students, progress is slow and in small steps. Although only three of the six students showed evidence of transfer to the content area classroom, the classroom

teacher and researcher felt that the workshop had been a positive contribution to the students' education. A brief summary of the student changes follows, regarding the two perspectives: the transfer of strategies to content area classes and the changes in student confidence in content area reading.

All students increased in their ability to recognize good strategies and select valuable strategies for content areas. However, not all students appeared to make a clear transfer to content areas. Shayne demonstrated that he had mastered the skills and could do the strategies when instructed but was not self-initiated to apply them to content areas. Arlis claimed he had better strategies in the content areas, but he continued to lack effort and little evidence of the application or transfer to content area classes is evident. Similarly, Dale increased his awareness of strategies and became better at selecting useful strategies. He appeared to have better study skills, but continued to lack initiative on class assignments. His improvement was sporadic.

The remaining students appeared to have a more clear transfer to content areas. Stacy showed improved awareness of strategies already used and included new ones in her reading. She believed she studied better, and her marks went up. Likewise, Luke increased his repertoire and use of strategies. He had better class performance, higher marks and improved attitude. Andrea refined her existing strategies and enlarged her scope to include more good strategies. She was less frustrated with content area reading in spite of continued academic difficulties.

Regarding the issue of reader confidence, there is again evidence of student improvement. The three students who made clear transfer to content areas also displayed a clear increase in their confidence with content area texts. Stacy appeared to have fewer difficulties with reading in the content areas and was evidently more confident in her ability to be successful there. Luke also was much more confident and similarly was experiencing fewer difficulties is his class. Andrea was not evidently successful in her content areas, but she was no longer frustrated by the reading in those areas. In that respect, she felt confident that she had good strategies in place to support her.

The confidence of the remaining three group members is not as easily defined. All three, Shayne, Arlis and Dale, were more confidently able to recognize and select valuable strategies after the sessions. However, they did not display clear application of the strategies, nor did they show significant improvement in their classroom performance. While it would appear that the information does not seem to have gone much further than the state of "knowledge," they did benefit from the instruction, and successfully learned better strategies.

Table of Findings Relative to the Purpose of the Study

Student Name	Evidence that reading strategies transferred to classroom	Evidence of increased reader confidence with content area texts	Student's self-perception of strategy transfer to content area reading tasks
Shayne	no	confident recognition & selection, lacks application	no
Stacy	yes	yes	yes
Arlis	no	confident recognition & selection, lacks application	yes
Luke	yes	yes	yes
Andrea	yes	yes	yes
Dale	sporadic	confident recognition, selection & application	yes

CHAPTER FIVE

Conclusions and Recommendations

Currently, strategic learning and metacognitive strategies are popular ideas. Metacognitive strategies are generally defined as those strategies that enable or empower learners to gain knowledge. Metacognitive strategies are varied and numerous, and this study includes four strategies specifically selected to address the needs of a student struggling with reading in the content areas. Struggling readers are often at risk, having difficulties in content areas, poor school success and likely to drop out of the school system before graduation. When working with 'at risk kids', educators often try to direct educational activities so that these students will develop life skills. These strategies were chosen for the study because they seemed well suited to help students develop a repertoire of strategies for learning the information *independently* and improve reader self-confidence.

This study seeks to study the effect of metacognitive strategies, used independently, on reader confidence. Metacognitive strategies put the locus of control into the hand of the student. The chosen strategies were aimed at becoming compensatory behaviors that would take into account areas of weakness while providing a method for success and building confidence. Instruction of such strategies was based upon content area reading passages from the class. The objective was to broaden the number of strategies used by

these students and to facilitate the transfer of the strategies into content areas, improving reader confidence.

Metacognitive Strategies Used

In order best to fit the schedule and content areas of this study, only the following four metacognitive strategies were chosen:

1) Text Preview (labelled Survey by Aukerman, 1972)

2) Summarizing—GIST, (Cunningham, 1982)

3) Note taking (Definitions, Annotations, & Summarizing)

4) Guided study technique, SQ3R (Robinson, 1970)

Statement of the Problem

The study tracked the six participants through several small group sessions. Differences in academic confidence in content areas and in the participants' self-confidence in reading content area texts were investigated. To do this, the following questions about transfer and reader confidence were addressed:

1. What transfer occurred from the reading strategy lessons to content area classrooms?

2. What changes were noted in reader confidence in reading content area texts?

3. What are the self-perceptions of the transferability of strategies to content area reading tasks?

Summary of Findings for the Question of Transfer to Content Areas

An indication of transfer from the reading strategy lessons to the content area classrooms was strongly present for three of the six students engaged in the study. Use of the strategies was evident through three or more of the following indicators:

1. Improved awareness of strategies individually used

2. Inclusion of new strategies in content area reading

3. Improvement of study procedures reported by student

4. Improved marks in content area tasks

5. Less frustration with content area texts

Some indication of transfer was also noted with two other students, Dale and Arlis, although improvement was sporadic in the first case and in the latter, improvement had not moved from home to the classroom. Both were clearly more aware of strategies, and they were confident that they had better study skills, but little evidence supports the claim that they were applying the strategies in content area classes.

The remaining student, Shayne, could confidently identify strategies and articulate the process, but no evidence supported the issue of transfer to the content area classroom.

Summary of Findings on the Question of Reader Confidence

Indications of improved reader confidence in content area texts were evident with the three students who made clear transfer to content areas. In

104

each of these cases the students reported that they felt better equipped to

manage reading in content areas and learn information from reading. Teachers

also reported that these students appeared less frustrated in class and were

more successful with the tasks that involve content area reading.

The remaining three students also reported increased confidence in the

use of metacognitive strategies, but their cases are not as easily summarized

into a single statement. Therefore, the question of confidence of the other three

students is best addressed with brief individualized statements. Shayne could

confidently apply the strategies when required by the teacher, yet he did not

improve or adopt new strategies. Arlis appeared extremely confident in his

ability to use many metacognitive strategies and reported use of these strategies

as he worked with content area information at home. However, evidence of this

confidence had not moved into his classroom. It appeared that in front of his

peers, he had an "image to maintain". Dale also appeared more confident than

he had been before the sessions. He was more aware of good strategies, and

was more sure of himself about putting these strategies into use when he sat to

work. The issue here was that he continued to be dreamy in class and

frequently "forgot" about the work.

Summary of Findings on the Question of Reader Self-Perception

Students strongly said that they perceived transfer of the strategies to

content area reading tasks. Five of the students indicated clearly that they saw

the value and potential for the strategies and perceived transfer to content areas

had occurred. All five students were more confident that they had good strategies for content area reading. As noted earlier, for two of these students, the researcher did not perceive evidence of transfer. In the final case, the sixth student admitted that he "knew how", but was not using the strategies in the content areas. He was not willing to commit the time required. He thought the strategies could be useful in content areas, but he did not perceive any transfer.

Final Conclusions

From the data gathered, evidence supported the claim that when strong indications of transfer into content areas occurred, improved reader confidence was also evident. When student use is sporadic, the effect on confidence is less dramatic. It is also noteworthy that student self-perception of transfer and confidence was greater than that observed by the classroom teacher and the researcher. Five of the six students perceived transfer of the strategies had occurred with content areas and were more confident in their ability to manage content area reading. This study indicates a strong link between the transfer of metacognitive strategies to content areas and reader confidence in content areas. From the review of literature in Chapter Two, we know that the use of metacognitive strategies increases students' ability to read content area texts. This study also supports the use of metacognitive strategies as a means to increase reader confidence.

Limitations of the Study

While the study shows connections between transfer of metacognitive strategies and reader confidence in the content areas, the study was limited in several ways. First, the group was limited to six participants that met during one period each day, about thirty-five minutes. Furthermore, because the sessions used reading passages that were currently being studied in the classroom, this study was limited to a small group of grade seven students from the same classroom. Furthermore, the study was limited to the topic and text, to match as closely as possible, the classroom unit's information and promote the most likely transfer of strategies to the content areas.

Furthermore, this study was also limited in the selection of students. Student section was done with the content area teacher to consider academic struggles and difficulties understanding content area textual material. Students were failing one or more of their core subjects, Math, Social Studies, Science or English Language Arts, at the time of selection. These students also had a history of academic or reading difficulty. Finally, they all were students who admitted (or complained) that the textual materials in the content areas were challenging and often frustrating.

This study, by design, facilitated a close rapport between the researcher and the six students. The climate in the group was warm and collegial. Students were open and responsive to the added personal attention. This atmosphere may have encouraged students to try to please the teacher and

researcher and may have swayed their answers and responses throughout the study. In light of the possible "wanting to please" that was likely a part of the sessions, indications and student perceptions of transfer therefore are subject to scrutiny. As stated previously, the issue of transfer can only be addressed in that transfer appeared to have occurred with three students.

Implications for Further Research

The number and the grade level of students limited the results of this study. Interesting directions for further research would be to explore these variables. Would student confidence also improve if the grouping were larger, or if the activities were a part of classroom instruction? Would similar results be noted at other ages? Content area reading usually becomes more demanding between grades four and six. An interesting study might include a range of students from these grades, done as part of regular instruction, investigating student confidence concerning their learning.

Finally, the review of literature noted that while many studies investigated student self-esteem, few studied could be found that directly connected metacognitive instruction to reader confidence. Little research appears to be done with the body of struggling learners and reader confidence. It seems that more research on the instruction of metacognitive instruction in this area could be useful.

Implications for Classroom Practice

The results of this study suggest that teacher should consider explicitly teaching metacognitive strategies with content area passages. Direct instruction of metacognitive strategies and guided practice with tasks like those encountered in the classroom is supported by literature reviewed in Chapter Two and this study's findings. After instruction with strategies, students in this study were confidently able to recognize good strategies and a good number of them began to improve their own strategic use. Content area teachers should reflect upon methods that review and reinforce taught strategies to anchor the strategy and foster independence among the learners.

Furthermore, the team-teacher approach appeared to work well in this study. The team approach in this study provided an opportunity for peer coaching and support that encouraged the classroom teacher to include the instruction of strategies in his classroom throughout the year. The team approach in this study was valuable, and helped create an environment that facilitated the transfer of strategies to content areas. If teachers can create an environment that facilitates good transfer of strategies to class work, this study suggests reader confidence will be positively affected.

Perhaps more indirectly, this study highlights the issue of early intervention for struggling students. Each of these students had a history of academic struggles and three of them had been identified as struggling readers in the primary grades. In each of these cases, interventions had occurred, but

the student continued to struggle in school. This study seems to bring up the questions surrounding effective early intervention for students as a means to circumvent academic difficulties in later years.

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111

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APPENDICES

Appendix A: Rhody Secondary Reading Attitude Assessment

(From Vacca R.T. and J.L. Vacca. 1986. Content Area Reading. Boston: Little, Brown, & Co.,p.80-81)

Directions: This is a test to tell how you feel about reading. The score will not affect your grade in any way. You read the statements silently as I read them aloud. Put an X on the line under the category that best represents how you feel about the statement.

SD - Strongly Disagree   D - Disagree
U - Undecided
A - Agree   SA - Strongly Agree

	SD	D	U	A	SA
1. You feel you have better things to do than read.	__	__	__	__	__
2. You seldom buy a book.	__	__	__	__	__
3. You are willing to tell people that you do not like to read.	__	__	__	__	__
4. You have a lot of books in your room at home.	__	__	__	__	__
5. You like to read a book whenever you have free time.	__	__	__	__	__
6. You get really excited about books you have read.	__	__	__	__	__
7. You love to read.	__	__	__	__	__
8. You like to read books by well-known authors.	__	__	__	__	__
9. You never check a book out from the library.	__	__	__	__	__
10. You like to stay at home and read.	__	__	__	__	__
11. You seldom read except to do a book report.	__	__	__	__	__
12. You think reading is a waste of time.	__	__	__	__	__
13 You think reading is boring.	__	__	__	__	__
14. You think people are strange when they read a lot.	__	__	__	__	__
15. You like to read to escape from problems.	__	__	__	__	__
16. You make fun of people who read a lot.	__	__	__	__	__
17. You like to share books with your friends.	__	__	__	__	__
18. You would rather someone tell you information so you won't have to read to get it.	__	__	__	__	__
19. You hate reading.	__	__	__	__	__
20. You generally take out books when you go to the library.	__	__	__	__	__
21. It takes you a long time to read a book.	__	__	__	__	__
22. You like to broaden your interests through reading.	__	__	__	__	__
23. You read a lot	__	__	__	__	__
24. You like to improve your vocabulary so you can use more words.	__	__	__	__	__
25. You like to get books for gifts.	__	__	__	__	__

125

To score, a very positive response receives a score of 5, and a very negative response receives a score of 1. On items 4, 5, 6, 7, 8, 10, 15, 17, 20, 22, 23, 24, and 25, a response of "strongly agrees" indicates a very positive attitude and receives a score of 5. Therefore, on the positive statements, "strongly agree" receives a 5, "agree" receives a 4, "undecided"receives a 3, "disagree" receives a 2 and "strongly disagree" receives a 1.

On the remaining items, a "strongly disagree" indicates a very positive attitude toward reading and should receive the 5 score. The same pattern as used above is reversed on the negative items. The possible range of scores for student responses is 5X25 (125) to 1X25 (25).

Appendix B: Questionnaire on Reading Strategies

(Administered before & after the study)

(From Vacca R.T. and J.L. Vacca. 1986. Content Area Reading. Boston: Little, Brown, & Co.,p.84)

Does it help to understand a text selection if you...

1. Think about something else while you are reading?

_____ Always _____almost always _____ almost never _____ never

2. Look ahead at the pictures?

_____ Always _____almost always _____ almost never _____ never

3. Underline important parts of the selection?

_____ Always _____almost always _____ almost never _____ never

4. Ask yourself questions about the ideas in the selection?

_____ Always _____almost always _____ almost never _____ never

5. Write down every single word in the selection?

_____ Always _____almost always _____ almost never _____ never

6. Check through the selection to see if you remember key points?

_____ Always _____almost always _____ almost never _____ never

7. Skip the parts you don't understand in the selection?

_____ Always _____almost always _____ almost never _____ never

8. Read the selection as fast as you can?

_____ Always _____almost always _____ almost never _____ never

9. Say every word over and over?

_____ Always _____almost always _____ almost never _____ never

10. Ask questions about parts of the selection that you don't understand?

_____ Always _____almost always _____ almost never _____ never

Positive strategies: Questions 2, 3, 4, 6, 10
Negative strategies: 1, 5, 7, 8, 9

Appendix C: Student Perceptions on Content Area Reading
Form A (Prestudy)

1. What is the most important reason for reading these books? (Show currently used Social Studies and Science textbooks.) Why does your teacher want you to read these books?

2 a. Who's the best reader you know in Social Studies?

   b. What does he or she do that makes him such a good reader?

3a. Who's the best reader you know in Science?

   b. What does he or she do that makes him such a good reader?

4. What do you have to do to get a good grade in Science or Social Studies in your class?

5. If the teacher told you to find the answers to questions in this book what would be the best way to do this?

6a. If the teacher told you to write notes on the information given in a chapter, what would be the best way to do this?

b. Have you ever tried summary-writing? How does it work?

c. How do you make notes?

7a. If the teacher told you to study and remember the information given in a chapter, what would be the best way to do this?

b. How do you study?

8. If you are having trouble understanding what you are reading, what do you do?

129

Appendix D: Student Perceptions on Content Area Reading

Form B (Poststudy)

The following questions (Form B) will be used as a guide for an interview between researcher and participating students after all study work has been completed.

1. What is the most important reason for you to read these books? (Show currently used Social Studies and Science textbooks.)

2 a. Who's the best reader you know in Social Studies?

2 b. What does he or she do that makes him such a good reader?

3a. Who's the best reader you know in Science?

3 b. What does he or she do that makes him such a good reader?

4. What do you have to do to get a good grade in Science or Social Studies in your class?

5a. If the teacher told you to find the answers to questions in this book what would be a good way for you to do this? (Probe for details.)

130

5b. How likely are you to survey the whole chapter before reading?

6a. If the teacher told you to write notes on the information given in a chapter, what would be a good way for you to do this? (Probe for details.)

6b. How likely are you to read and summarize using a strategy like GIST, or SQ3R?

7a. If the teacher told you to study and remember the information given in a chapter, what would be a good way for you to do this? (Probe, for example, How did you study for your last test? What exactly did you do? What about your last test in another subject?)

7b. How likely are you to try SQ3R?

8. If you are having trouble understanding what you are reading, what do you do? Probe for alternatives, for example, What if that is not possible?

The following are samples of the process of a pair of students who produced a twenty-word summary.

1. The roller coaster train is being pulled by electricity all the way to the top. (Fourteen words)

2. At the first hill, electricity is turned off (potential energy) and the descent is kinetic energy. (Sixteen words)

1 & 2 together:

The descent is kinetic energy. Electrical energy pulls up the cars, turns off, potential energy exists, then kinetic energy takes over. (Twenty words)

132

Summary (GIST):
Linkages are devices or networks like trains, planes, boats and cars that move people or goods or information.

Question Notes:
   e.g. What will the farmers do when the rail lines shut down towns in our area?
   The text says there are many kinds of transportation linkages. Farmers will use another type of transportation linkages to move grain such as big trucks.

   e.g.. Is our water system a linkage?
   The text says water is a linkage. In our area we get our town water from far away so I guess we are linked that way.

   e.g.. What would life be like without linkages?
   The text lists many linkages, and I can't imagine being without hydro, phone, roads or water. It sounds like pioneer days.

Critical Notes
   e.g.. Should the government step in and stop the rail lines from closing in small towns?
   The text says that linkages encourage business growth. I think the government should step in.

   e.g.. Should the Internet be limited so there would be less junk on it?
   The text does not talk about this. I don't know.

   e.g.. Why are taxes so high in our town?
   The text says that taxes pay for many of the linkage systems like roads and water.

Appendix G: Questionnaire on Reading Strategies Scoring Sheet

Student Name_____

Does it help to understand a text selection if you . . .	Prestudy	Score Poststudy
1. Think about something else while you are reading? __1_ Always __2_almost always __3_ almost never __4_ never	__	__
2. Look ahead at the pictures? _4__ Always __3_almost always __2_ almost never __1_ never	__	__
3. Underline important parts of the selection? _4__ Always __3_almost always __2_ almost never __1_ never	__	__
4. Ask yourself questions about the ideas in the selection? __4_ Always __3_almost always __2_ almost never __1_ never	__	__
5. Write down every single word in the selection? _1__ Always __2_almost always __3_ almost never __4_ never	__	__
6. Check through the selection to see if you remember key points? __4_ Always __3_almost always __2 almost never __1_ never	__	__
7. Skip the parts you don't understand in the selection? __1_ Always __2_almost always __3_ almost never __4_ never	__	__
8. Read the selection as fast as you can? __1_ Always __2_almost always __3_ almost never __4_ never	__	__
9. Say every word over and over? _1__ Always _2__almost always _3__ almost never __4_ never	__	__
10. Ask questions about parts of the selection that you don't understand? __4_ Always __3_almost always __2_ almost never _1__ never	__	__

Totals___   **___**

Positive strategies: Questions 2, 3, 4, 6, 10
Negative strategies: 1, 5, 7, 8, 9

Appendix H: Overview of Lessons and Timeline

Prestudy assessment tools:

1. Rhody Secondary Reading Attitude Assessment

2. Questionnaire on Reading Strategies

3. Interviews with Student Perceptions on Content Area Reading, Form A

Topic 1: Survey

Period 1: Introduction & Modeling

Period 2: Modeling of Question Development and Guided Practice

Period 3: Further Practice & Journal Time

Period 4: Independent Practice and Discussion

Topic 2: Summarizing (GIST)

Period 1: Introduction & Modeling

Period 2: Practice with Group, Then with Partner

Period 3: Chunking Modeled with further Practice

Period 4: Independent Practice with Short Passages & Journal Time

Topic 3: Reading Notes

    Period 1: Introduction and Modeling of a Question Note and Critical Note

        through a Think-aloud by teacher

    Period 2: Modeling of a Passage, making mental notes and Group

        Practice

    Period 3: Practice guided by teacher, and Paired Practice

    Period 4: Paired Practice, Independent Practice and Discussion

Topic 4: Guided Study Technique (SQ3R)

    Period 1: Introduction & Modeling

    Period 2: Practice with Group, Then with Partner

    Period 3: Independent Practice with Short Passages & Journal Time

Poststudy Assessment Tools

    1. Questionnaire on Reading Strategies

    2. Interview on Student Perceptions on Content Area Reading, Form B

<u>Lesson Plans for Survey</u>

Period 1:

A) The researcher *models and provides guided practice* activities for

students using steps developed by Aukerman and cited in Tierney,

Readence and Dishner (1995).

Step 1: *Analysis of the Chapter Title.* After reading the chapter title, or

main section heading, students are directed to consider the following

questions:

- What do you think this section will be about?

- How does this section relate to the material previously

  covered?

- What do you already know about the topic?

Step 2: *Analysis of Subtitles.* After a brief preview of the subtitles,

students turn each subtitle into a question. This activity parallels the

Question stage of SQ3R. The resulting questions are intended to serve

as the reader's purposes and guide readers to key concepts under each

subtitle. For example, we could a subtitle, 'Astronaut Selection', into the

question, "What are the important things to consider when astronauts are

137

selected?" We record the resulting list of questions on an overhead or blackboard until the student is ready to practice independently. Sufficient space needs to be left between each question for Step 7, where they will jot an answer and an example down.

Step 3: *Analysis of Visuals.* While most students immediately examine the photo included in the text, many fail to recognize these photos and the corresponding captions as a source of valuable information. Similarly, many students fail to recognize information on other visuals such as maps, graphs, or charts, as a learning aid. In the same manner as under *Analysis of Subtitles,* students reframe visual aids into questions, preferably only one or two questions per illustration.

Step 4: *Analysis of Introductory Paragraph.* Students are asked to read the introductory paragraph to confirm the key concepts now identified through the previous steps.

Step 5: *Analysis of Concluding Paragraph(s).* The final paragraphs or the chapter summary should provide additional confirmation about the key concepts. A discussion could occur about the fit of the questions generated to the summary provided by the textbook authors. We also ask

that students summarize the main idea of the section, using the

information they have just gleaned through the survey.

Period 2:

A) *Additional time as needed is taken to guide* students through other

passages using the five steps to *Survey* and *Question.* It is

important that students be encouraged to develop good questions

and if necessary, additional guided practice should be focussed on

this aspect of the strategy.

B) If time does not permit students to have sufficient practice, additional

class time should be allowed before proceeding to the steps of

· *Read, Recite, Review of SQ3R.*

Period 3:

A) Any additional practice needed to gain independent mastery of the

strategy is done as needed.

B) Researcher and students take time to respond in journals. Prompts

are directed at usefulness of the strategy, likelihood of classroom

application, and personal reflection about reading with the strategy.

Lesson Plans for Summarizing using GIST

Period 1:

>   A) *Several paragraphs, three to five sentences in length,* that lend
>   themselves to a single sentence summary are preselected by the
>   researcher from content area texts similar to those used by the
>   students.
>
>   B) The researcher then models the following steps: A sample is provided
>   in Appendix E.

Step 1: *Read and retell.* The first sentence is read for the purpose of
retelling.

Step 2: *Summarize the first sentence.* A set of 15 blanks is displayed on
an overhead, chart paper or chalkboard. A summary of not more than 15
words is fitted onto the blanks. Summary generation is first modeled by a
teacher thinking aloud, and then is developed with group participation,
until students are able to begin summary construction independently. The
summary is reread and revised until readers are satisfied at which point it
is put away or covered unless a student wants to reread it.

Step 3: *Summarize the first two sentences.* Readers now attempt to retell and then summarize the first two sentences in fifteen words or less. Again, revisions are permitted until they satisfy readers. As a final check, readers may uncover the first summary to compare and check accuracy.

Step 4: *Continue sentence by sentence to the end.* The processes of "read, retell, and summarize in fifteen words or less" continues until readers feel they have generated the best summary possible. (Tierney, Readence, & Dishner, 276-277)

Period 2:

A) The researcher will *review the process* by working through a short paragraph guiding the group. Hints for summarizing given may include using topic sentences, collapsing lists, eliminating description and removing repeated words. (Hare & Borchardt, !984).

B) Students will *work with a partner* on a second paragraph, to produce a summary.

C) After the process, the group *discusses and shares summaries* and difficulties.

D) The balance of the class is devoted to *paired work* and subsequently, if time permits, independent practice of the strategy.

141

Period 3:

A) The researcher *introduces and models the chunking of text*. A shift is made

from the sentence by sentence approach so they summarize several

sentences in each step.

B) *Students practice* generating summaries with clusters of sentences, first in the

large group, then with a partner, and finally, independently.

Period 4:

A) The *move is made to a short passage*, if the researcher feels the students

are confident in summary creation with a paragraph. Passages of three to

five paragraphs are used to develop a 20-word summary.

B) *Students read, retell and write a summary* for the first paragraph of a short

passage. Revisions are made until students are satisfied with the

summary, which is then put away or covered.

C) The *second paragraph is read*, and a new summary written, using the same

procedure as previously used in the sentence by sentence approach.

D) Researcher and students take time to respond in journals. Prompts are

directed at usefulness of the strategy, likelihood of classroom application,

and personal reflection about reading with the strategy.

Period 1:

A.) Define "critical notes" or "critical annotations" as the reader's reaction or response to the passage's thesis or main idea. It answers the question, "So what?" In writing critical notes, the reader should first state the author's thesis, then state his or her position in relation to the thesis and finally defend or expand on the position taken (Vacca & Vacca, 1996).

Define "question notes" or "question annotations" as a means to raise an important issue as a question. The question should reflect what the reader sees to be the most important topic or issue of what he has read. Because both annotations are issues based, they are not equally suitable in all areas of content area reading. Clarify with students that a paraphrase or summary such as the one generated through GIST should contain a thesis, but that may give guidance for critical or question notes.

B) Using a passage previously used for GIST, model the creation of a critical and question note. A sample is provided in Appendix F.

C) Using an unfamiliar reading passage, model the creation of a critical note (state the thesis, a position and a defense).

D) Using an unfamiliar passage, model the question note (ask question and answer with the author's thesis and support).

Period 2:

A) Remind students of the *purpose* and *characteristics* of the strategy.

B) Researcher models the reading note strategy and provides opportunity for questions to check understanding. Rosenshine (1987) states that the main problems of demonstrations of this manner appear to be giving directions too quickly, assuming everybody understands because there are no questions, and introducing more complex materials before students have mastered early material.

C) Group practice guided by researcher.

D) Paired practice followed by discussion and reflection.

Period 3:

A) Students are asked to restate main points of reading notes.

B) Paired practice continues with discussion of notes made, comparisons, and suggestions.

C) Practice activities increase in the expectation of independent use of the strategy.

Period 4:

A) Review of the reading notes occurs.

B) Paired students work on longer passages selected by the researcher. Both partners read the passage silently and through discussion determine a

144

logical section of text to treat as a block for the basis of the notes. As a team, they write a set of notes.

C) Paired students read the next block independently, write notes without consultation and then compare, refine or alter notes.

D) Participants are given time to note problems, advantages and possible uses of reading notes. Discussion is also guided toward the possibility of making mental notes during reading to improve retention of information.

E) Researcher and students take time to respond in journals or on exit slips. Writing prompts are directed at the usefulness of the strategy, likelihood of classroom application and personal reflection about reading with the strategy.

Lesson Plans for the Guided Study Technique, SQ3R

These five steps of SQ3R are as follows:

Survey

Question

Read

Recite

Review

Period 1:

A) The researcher provides a *brief overview of SQ3R* and its purpose. In this class, students will review the *Survey and Question* steps outlined earlier, using the procedure set out by Aukerman (1972).

B) If time permits, the *researcher models SQ3R*, using Steps 6 to 8 as detailed in the following lesson plan.

Period 2:

A) The researcher returns to *model the steps of Read, Recite, Review*, using the procedure outlined in Steps 6 to 8, adapted from Robinson (1970). The passages chosen for the strategies of Survey, GIST, Question and Critical notes were used for further study here.

Step 6: *Read.* Begin reading the first subsection, starting after the introduction previously read in Step 4. Read to answer the question generated by that subtitle. Encourage students to avoid plodding through the passage word by word, but to engage in an active search for the answer to the question. Stop at the end of the subsection.

Step 7: *Recite.* Look away from the text and recite answers to generated questions. Students must use their own words and cite an example if the text gave one. If this cannot be done, students are directed to glance over the section again. In this project, students will be directed to jot down their answer and example using key phrases or point-form notes, in the spaces left blank between the generated questions.

Students repeat 6 and 7 with each successive subsection until they have read the selection and have produced a complete set of notes.

Step 8: *Review.* When they have read the passage, students look over their new set of notes. If the notes are to be used for study notes, students would cover and recite the key

points of the passage. Then notes would be exposed line by

line, as the student tries to recall answers and examples

under each question.

B) *Guided Practice* with the group begins until students are ready to work with a

partner.

Period 3:

A) Students *work with a partner* on a new passage to develop a set of reading

notes using SQ3R.

B) Students *independently practice* SQ3R on a new passage.

C) Researcher and students take time to respond in journals. Prompts are

directed at usefulness of the strategy, likelihood of classroom application,

and personal reflection about reading with the strategy.