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Document Type

Thesis

Degree Name

Master of Education (MEd)

Department

Graduate Education

Keywords

Master of Education, thesis, reading strategies, elementary education, reading comprehension

Subject Categories

Curriculum and Instruction | Education | Rhetoric and Composition

Comments

Action Research Report Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education

The Role of Explicit Teaching of Cognitive/Metacognitive
Reading Strategies to Improve Reading Comprehension
At the Elementary Level

by

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Literature Review
Submitted in Partial Fulfillment
of the Requirements for the
Degree of Masters of Education

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March, 2003

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Abstract

This paper presents a summary of selected research on teaching cognitive and metacognitive reading strategies and their correlation to improved reading comprehension at the elementary level. It also reviews instructional programs, and describes implications for teaching. Study findings indicate that explicit teaching of cognitive/metacognitive reading strategies are effective in improving reading comprehension for students at the elementary level.

Introduction: Problem Area and Its Significance

Reading is a very complex skill and the history of education is replete with numerous attempts to discover what is the best way to teach it. For the past century phonics and whole language have been the primary focus of reading curriculum and instruction research at the elementary level. Both have been valuable areas of study and debate. The problem is that actual classroom practice has put a great emphasis on teaching decoding, fluency, and individual comprehension skills. These individual comprehension strategies have often been practiced and then simply assessed. Teachers have shown students "what" to do, but have not shown students the "why", "how" and "when" of using these reading comprehension skills. Explicit instruction of reading comprehension strategies, which includes the "what", "why", "how", and "when" has received very little attention in the classroom (Durkin, 1978; Pearson, Roehler, Dole, &

Duffy, 1992; Pressley, El-Dinary, & Beard 1997; Vacca & Vacca, 1998). There remains disconnectedness between what reading comprehension research recommends and what teachers practice in the classroom.

Interestingly enough, educators, researchers, and parents alike agree that reading comprehension is the essence of reading. In fact, the development of reading comprehension is a declared goal of elementary schools, professional teacher associations, government education plans, and reading associations. All of these organizations have recognized reading comprehension as a principal educational aim, and research of more than three decades has revealed a wealth of information that has increased the understanding of the processes of learning and thinking in relation to reading comprehension. There really has been no controversy about the importance of students being skilled and proficient in using comprehension skills. Henry Beversluis, a Christian philosopher, (cited in Bosma and Block, 1992) states:

> But intellectual growth requires much more than facts. It requires all that
> psychologists mean by cognition, comprehension, memory, divergence,
> discovery, judging, evaluation. It includes understanding things in
> relationships... It includes thinking, understanding problems, forming
> hypotheses, drawing conclusions, testing conclusions. It includes imagining,
> enquiring, exploring, analyzing, probing for meaning and comprehension (p.52)
> (Bosma & Block, 1992 p.12).

Bosma and Block believe that teachers can make a direct application of Beversluis' concept to teaching students to learn how to read. The authors assert that all the elements Beversluis lists as components of intellectual growth can be taught to learners to provide them with a variety of strategies for constructing meaning from text and helping the learner take control of the strategies appropriate to the task and learner's style.

Reading is so much more than just decoding words and gleaning the author's meaning. Reading is also a very personal growth experience. Bruinsma (1990) writes:

> Literature is a repository of a culture's sense of itself and the longings of what it hopes to be. Literature challenges our imaginations and as J.R.R. Tolkien says, "takes us beyond the walls of the world" to show us the reality beyond the limits of our five senses. … If we and our students are going to be able to mine the literary riches of the Bible, as well as other forms of literature, we and they will have to be good readers.

Gladys Hunt (cited in Bosma & Blok, 1997) articulates the value of reading when she states:

> A good book is a magic gateway into a wider world of wonder, beauty, delight, and adventure. Books are experiences that make us grow, that add something to our inner stature. … Take all the words available in the human vocabulary and read them from the dictionary, and you have only a list of words. But with the creativity and imagination God has given human beings, let these words flow together in the right order and they give wings to the spirit. Every child ought to know the pleasure of words so well chosen that they awaken sensibility, great emotions, and understanding of truth. This is the magic of words—a touch of the supernatural, communication which ministers to the spirit, a gift of God. (p.14)

James Schaap expresses this meaning making or metacognitive ability we possess in this way. In an interview Vanderhill (2003) had with Schaap about More than Words, a book he co-authored with other Christian authors, Schaap said that good books transform people's lives. More than Words tells stories of how different Christian authors were influenced by a particular author in their life. In the article Schaap shares how readers make universal connections with the characters and creatures in books and how these influence and actually transform the reader's life.

In spite of the agreement on the importance of reading comprehension and all the research that has established the effectiveness of instructional strategies that improve

comprehension (Bauman & Seifert, 1992; Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Brown, Pressley, VanMeter, & Schuder, 1996; Duffy et al., 1987; Palinscar & Brown, 1984), many educators continue to teach reading in a way that reflects the belief that reading accuracy and fluency should be taught before and separately from reading comprehension (Durkin, 1978; Keene & Zimmerman, 1997; Pearson et al., 1992; Pressley et al., 1997; Snow, 2002). Often educators assume that if a child reads a word correctly, the child automatically knows the meaning of the word. And if they know the meanings of all the words or vocabulary, they will certainty know the meaning of the sentence or passage made up of those words. A tradition in most elementary schools is to first teach basic reading skills, and after that is mastered a move can be made to advance to higher-level comprehension skills. Skill instruction and meaning instruction often remain separated. At the elementary level there remains a great emphasis on teaching reading decoding and fluency skills, and a great neglect of teaching reading comprehension strategies despite all that research has recognized.

Research confirms this dichotomy. Two decades ago Durkin's (1978-1979) research found that in the traditional classroom, reading comprehension skills are often practiced, frequently assessed, but seldom taught. According to more recent research (Pearson et al.,1992) it appears that the widespread practice in education today is that this skill is still "caught, not taught". Keene and Zimmerman's (1997) search for teaching comprehension strategies in the classroom also came up short when they found that many educators believed teaching reading meant focusing on the audible, rather than the cognitive features of reading. Pressley et al. (1997) observed that although teachers reported teaching reading comprehension strategies, and identified comprehension as a

primary goal, there was a significant lack of evidence that comprehension skills were being taught. Pearson and Dole (1987) accuse teachers of instructing by "mentioning the skill", "practicing the workbook", and "assessing whether students got the right answer" (p.151). Wilhelm (2001), in his book, Improving Comprehension with Think-Aloud Strategies, contends that the tradition of educators has been to focus on transferring information (the what), but to neglect sharing the strategies (the how) that enable students to make use of newly acquired information. The need for explicit instruction in the area of reading comprehension continues to be largely ignored in most schools. He goes on to say that classroom instruction does not provide enough guidance for students in the area of learning reading comprehension strategies, or the how, why, when, and where of using them. According to Snow (2002), a report prepared by the RAND Reading Study Group for the U.S. Office of Educational Research and Improvement asserts that successfully developing beginning reading skills may not automatically produce skilled readers able to deal with school reading tasks. This report goes on to suggest that unless the knowledge base on reading comprehension is further developed, the federal government's investment in reading programs will be lost. This totals over $5 billion over the next 5 years. The Carnegie Corporation of New York found that by the middle grades the majority of students appear skillful in the mechanics of reading, but they aren't strategic enough in their ability to explore and interpret meaning (Vacca & Vacca, 2002). The 1998 Nation's Report Card on Reading showed that 40 percent of all nine-year-olds score below the basic level on the National Assessment of Educational Progress (NAEP). The failure of this many children learning to read at the basic level is significant. The above

research appears to offer evidence that schools are neglecting a very important aspect of reading instruction, which is cognitive/metacognitive skill instruction.

<div align="center">Literature Review</div>

The purpose of this literature review is to evaluate if explicitly teaching students cognitive/metacognitive reading comprehension strategies positively influences comprehension achievement, and what research supports as the most effective and practical instructional model for teaching reading comprehension strategies with metacognitive features to elementary students.

My aim is to review the scientific knowledge base on reading comprehension and its implications for reading comprehension instruction. The goals for this paper are threefold. First, to review literature and research by prominent authors and educators in this area of study, and find practices they identify that characterize effective instruction in the area of reading comprehension. What are the research-based instructional "big ideas" concerning reading comprehension? The second goal is to examine different instructional programs that have been developed and found to be effective in explicitly teaching cognitive/metacognitive reading comprehension strategies. What is the existing research evidence regarding program design? The last goal is an attempt to connect this research to delivery of instruction by finding instructional implications for teaching cognitive/metacognitive reading comprehension strategies at the primary and elementary level. The end result should be documenting effective instructional programs that use research-based practices to teach cognitive/metacognitive reading comprehension strategies to elementary students.

In considering the relationship between teaching cognitive/metacognitive strategy instruction and reading comprehension achievement, research has identified areas of converging evidence. This literature review will attempt to link empirically supported effective teaching principles and explicit metacognitive strategy instruction as related to reading comprehension instruction at the elementary level.

Converging Ideas - " Big Ideas"

When considering the relationship between reading comprehension and explicit instruction of cognitive/metacognitive reading strategies, there are a number of areas of converging evidence identified in the research. First, reading comprehension is very complex and has many dimensions including metacognitive and cognitive aspects (Ellis & Worthington, 1994; Fielding & Pearson, 1994; Vacca & Vacca, 1999). Secondly, use of comprehension strategies explains much of the difference between proficient and poor readers, and student strategy processes are good predictors of student achievement (Ellis & Worthington, 1994; Harvey & Goudvis, 2000; Palincsar & Brown, 1987; Wilhelm, 2001). Third, reading comprehension strategies are teachable in early elementary grades, and they are best promoted by using instructional programs that include explicit teaching of multiple strategy use with metacognitive components (Brown et al., 1984; Duffy et al., 1987; Palincsar & Brown, 1987; Paris, Cross & Lipson, 1984; Wilhelm, 2001; Yuill & Oakhill, 1991). Fourth, strategic students are active and engaged, and it is important that they interact with text, teachers, and peers to make meaning and construct knowledge (Stronks & Blomberg, 1993; Vacca & Vacca, 1999; Van Brummelen, 1994).

Reading is a very complex process.

Comprehension is much more than the literal understanding of text. Reading is a very complex process and involves a complex set of cognitive and metacognitive skills. Learning to read and comprehend involves many processes using many strategies. It is not a linear process in that decoding must be taught before comprehension. From the beginning of reading instruction, both skills can be taught at the same time. According to Keene and Zimmerman (1997), metacognition is an umbrella under which all cognitive strategies fall. Each cognitive strategy is a variation of metacognition.

The process of metacognition is a very important component of reading comprehension instruction, yet many educators remain confused about what metacognition is. Metacognition or "knowing about knowing" is a term originated by Flavell (cited in Vacca & Vacca, 1999). It is defined as the ability to evaluate whether one is performing successfully. It involves knowing about and controlling or regulating one's thinking and learning. Flavell identified two types of metacognitive activities: knowledge about cognition and regulation of cognition. Metacognitive knowledge includes self-knowledge and task-knowledge. (What cognitive tools do I possess that will most efficiently help me with this specific task?) Student's self-regulation involves the ability to monitor and regulate comprehension through strategies and attitudes that rely on their metacognitive knowledge. (Did I use the correct cognitive tool and was I successful in understanding the meaning of the text?) Self and task-knowledge are prerequisites for self-regulation. Vacca and Vacca note that to be in command of their own reading students must have a repertoire of strategies to draw on, and they must know what to do when they become confused in their reading. Palincsar and Brown (1987)

define knowledge about cognition as an individual's knowledge about his own cognitive processes, or in other words, the reader knows how, why, and when to use a strategy. Knowledge about regulation of cognition includes one's awareness and control over cognition during problem-solving activities such as planning, monitoring, testing, revising, and evaluating. Ellis and Worthington (1992) distinguish between cognitive and metacognitive strategies in the following manner. Cognitive strategies are the "tools" one uses for solving specific types of problems across a variety of situations. Metacognitive strategies are the processes one uses to figure out which cognitive "tool" is needed, to evaluate how it works, and to determine if another strategy is needed.

Metacognitive instruction should not occur as an isolated component of instruction. Metacognitive instruction should occur at the same time as instruction of other cognitive reading strategies takes place. The two shouldn't be separated out from each other during reading comprehension instruction. It doesn't help to have the correct tools if you don't know when to use them or if they are working correctly. Cognitive strategies allow students to construct meaning as they use various thinking skills and processes to read and talk about texts. Metacognitive strategies involve students in making plans for text learning, monitoring their comprehension, and evaluating how well they have accomplished their goals (Vacca & Vacca, 1999).

Fielding and Pearson (1994) define comprehension as a complex process involving knowledge, experience, thinking, and teaching. They contend that comprehension inherently involves inferential and evaluative thinking and not just the literal reproduction of the author's words. According to them, how well a reader

constructs meaning depends in part on metacognition or their ability to think about and control their own learning and thinking process.

Holmes in "The Idea of a Christian College" (cited in Bosma & Blok, 1992) makes the distinction between training and education. This parallels cognition and metacognition.

> Training, in contrast to education, develops skills and techniques for handling given materials and facts and situations. Education admittedly includes some training in the earlier states of learning. But the educated man shows independence and creativity of mind to fashion new skills and techniques, new patterns of thought. He has acquired research ability, the power to gather, sift and manipulate new facts and materials, and to handle altogether novel situations. The educated Christian exercises critical judgment and manifests the ability to interpret and to evaluate information, particularly in the light of the Christian revelation. In a word, if he is to act creatively and to speak with cogency and clarity to the minds of his fellows, the educated Christian must be in the world of ideas and men. (p.15)

Bosma and Blok go on to say that it is the educated person, rather than the trained one that the Christian teacher seeks to develop in the reading program.

Proficient vs. poor readers.

The use of cognitive and metacognitive comprehension strategies explains much of the difference between proficient and poor readers. Numerous studies have identified the characteristics of effective and ineffective readers (Duffy et al., 1987; Ellis & Worthington, 1992; Harvey & Goudvis, 2000; Wilhelm, 2001). Proficient readers are active readers who use many strategies to help them construct meaning from text. The strategies they use consist of an awareness and understanding of their cognitive and metacognitive processes. They recognize when they don't understand or when meaning

is breaking down for them. They know how to coordinate and change the use of strategies they are needed. In summary, they have control of their efforts to use the strategies, and they know "how", "when", and "why" to use them (Ellis & Worthington, 1992). Harvey and Goudvis (2000) also maintain that proficient readers adapt strategies to their purposes for reading. They too claim that this requires metacognitive knowledge, an awareness and understanding of how one uses the strategies during reading. Good readers keep track of how well they understand what they read. They proceed on autopilot most of the time until something doesn't make sense. Then they pick from their repertoire of strategies to repair the meaning. For good readers, strategy use appears to be a skill; it is something automatic and done without consciously thinking about it.

Student strategy processes are good predictors of student achievement. In their comprehension research, Duffy et al. (1987) emphasize the strategic nature of reading and the relationship between metacognition and performance. When comprehension is blocked good readers have many strategies at their disposal to restore meaning, and they know how to use them. Wilhelm (2001) lists several strategies that researchers have discovered good readers use every time they read anything. They include: activating prior knowledge, decoding text into words and meaning, setting a purpose for reading, making predictions, visualizing, asking questions, summarizing, monitoring understanding, reflecting on meaning, and applying what has been learned. Expert readers even go beyond this. They also include many text and task-specific processes. They are interested in entering the story world, imagining the story world, extending and connecting to the story world, and reflecting on the story world.

In contrast to this, strategy use appears to be absent for poor readers. They often show a variety of problems in their cognitive processing of reading. Garner (as cited in Yuill & Oakhill, 1991) has shown that poor comprehenders lack skills in comprehension monitoring. They do not see inconsistencies in text. Garner points out that poor comprehenders concentrate on problems in reading at the level of individual words, rather than text as a whole. Poor readers think understanding occurs from "getting the words right". Yuill and Oakhill found that while poor students may be good at recalling information from the text verbatim, they are poor at recalling the gist. Their recall is close to the literal form of the text, but they are less able to integrate information and make inferences.

Palincsar and Brown (1987) observe that poor readers fail to (a) search for meaning as they read, (b) monitor their comprehension to ensure that they are deriving meaning, (c) engage in strategic behavior to bring meaning to text and restore meaning when there is a breakdown in comprehension, and (d) modify their choice of strategies to meet the varying demands of reading. They recommend that learning behaviors such as these need an instructional agenda with a metacognitive approach that includes: increasing student awareness of the task demands, teaching the student to use appropriate strategies for the task, and teaching the students to monitor how they apply the strategies to the task. Because poor readers lack this understanding of strategic reading, instruction needs to place a greater emphasis on the development of readers' ability to read and reason strategically (Wilhelm, 2001).

Strategies should be taught explicitly and early.

Research has identified what cognitive and metacognitive skills good readers use when interacting with text. What does research advise teachers about delivering these necessary skills to their students? For starters, teachers can *show* kids how to read, instead of *telling* kids how to read (Vacca & Vacca, 1999; Keene & Zimmerman, 1997; Wilhelm, 2001). Reading teachers need to provide explicit, in-depth instruction over a long period of time, instructing students in the cognitive and metacognitive processes and strategies that proficient readers use most often. Explicit instruction shows students not only what to do, but when, why, and how to do it. One effective way to cover all these facets of reading is to scaffold instruction. Instructional scaffolding allows teachers to support readers' efforts to make sense of texts while showing them how to use strategies that will lead them to be independent learners. As students practice these new strategies the teacher models or leads them through the steps until they can independently perform them on their own (Vacca & Vacca, 1999).

Research also shows the importance of teachers using challenging and authentic texts in a literature-rich learning community (Harvey & Goudvis, 2000; Keene & Zimmerman, 1997; Wilhelm, 2001). A variety of texts should be incorporated into meaningful tasks. Both cognitive and metacognitive skills can be taught in early grades because cognitive and metacognitive comprehension strategies can be taught to students using reading material that children read themselves, as well as meaningful content material that is read to students by the teacher (Vacca & Vacca, 1999).

Pearson et al. (cited in Keene & Zimmerman, 1997)) propose that the strategies discussed become part of the reading comprehension curriculum for kindergarten through

twelfth-grade. According to Snow, Burns, and Griffin (1998) research on what young

comprehenders do is not as far along as research on children's word processing. Primary

grade teachers often focus so much on decoding that they neglect teaching

comprehension strategies. Research provides evidence to suggest that we should focus

our attention on comprehension as well as decoding in K-3 classrooms (Beck et al., 1996;

Brown et al., 1996; Duffy et al., 1987; Bowman, Donovan, & Burns, 2000; Snow et al.,

1998; Smolkin & Donovan, 2001).

Active engaged learners are strategic.

Strategic learners are active and engaged learners. Vacca & Vacca (1999)

indicate that students who struggle with the reading process are often unaware of the role

they as the reader play in comprehending text. Low-achieving students often aren't sure

what strategies are important in a task or *how* and *when* to use the strategies that they do

possess. The also have trouble recognizing *why* they are reading, that reading has a

purpose. The authors write that from a strategic point of view, a reader's main goal is to

make sense of the text they read. Active, engaged learners are strategic in their

interactions with text and know how to search for meaning in what they read. Vacca and

Vacca believe that a strategic reader's mind is alive with cognitive questions.   The

authors write that reading is an active process that takes place behind the eyes. The

meaning of a text resides not in the print itself, but in the interactions and transactions

that take place between the reader and the text. Active readers have a personal

relationship with text. That, they explain, is why schemata or prior knowledge is so

important to comprehension.

Instructional practices that involve mostly lecture result in passive learning and nonparticipation by students. Yet, according to Vacca and Vacca (1999) assigning and telling are still common teaching practices. They submit that students will be less ambivalent about the act of reading if teachers make reading more social, collaborative and interactive. Talking to learn helps students explore, clarify, and think deeply about the ideas they encounter.

Van Brummelen (1994) affirms that an essential ingredient of the Great Communion in Christ is that students need to learn to appreciate each other's gifts and learn to support each other. He believes that a Biblical view of knowledge demands a personal response. Students need to use their knowledge, thought, and creativity to extend what they have learned. They need to make personal choices and act on personal values and commitments. He proposes that in order for students to perform in using these higher thinking skills they must be engaged in their learning.

Stronks and Blomberg (1993) indicate that effective classrooms are ones in which students are encouraged to be team players and cooperative learners. They contend that this kind of classroom promotes responsive discipleship where gifts are unwrapped, burdens are borne, and joys are shared. They maintain that when students get help from their peers, their work tends to improve. The authors write that human beings are created in interdependence, and our knowledge is a communal possession. Students depend on each other for understanding. The authors stress that group activities and interactions lead to metacognitive and reflective abilities, and that these activities must be a part of teaching and learning in a classroom that promotes discipleship.

Literature Review of Research and Programs and Routines

Research of more than two decades has revealed the importance of explicit strategy instruction for reading comprehension achievement. Recent reviews and research continue to confirm this. In considering the relation between teaching strategy instruction and reading comprehension, research has identified areas of converging evidence. This literature review will examine research studies by authors such as Beck et al. (1996); Brown et al. (1996); Duffy et al. (1987); Palincsar & Brown (1984); and Paris, Cross, & Lipson (1984). All of these authors have contributed significant findings that have made a difference in the ways educators think about teaching reading comprehension. Two older, but very important studies, done by Palincsar and Brown (1984) and Paris et al. (1984) will be discussed briefly. Three more recent studies done by Brown et al. (1996), Duffy et al. (1987), and Beck et al. (1996) will be reviewed in depth. Following the studies current reading comprehension programs or routines that have been developed will be briefly described. These routines incorporate many of the strategies recommended by research.

Early strategy research focused on instruction of individual strategies. A small number of them proved to be effective in increasing comprehension and memory for text. The problem was that use of individual strategies seldom showed evidence of generalized improvement in reading (Brown, et al., 1996). Later research on skilled readers discovered that improvement in reading requires more than instruction in a single strategy (Pressley & Afflerbach, 1995). Skilled readers apply a variety of strategies while reading. This understanding encouraged researchers to develop instructional interventions that involved teaching multiple comprehension strategies (Palincsar &

Brown, 1984). They found that more intensive direct explanation and modeling of small

repertoires of strategies were generally more successful in improving reading

comprehension (Collins, 1991; Duffy et al., 1987). Some educators became aware of the

strategies that researchers espoused as being effective and began to use this strategic

instruction in their classrooms, but with changes. Researchers began investigating how

these elementary educators were implementing the comprehension strategies in their own

classrooms.

Reciprocal Teaching.

Palincsar and Brown (1984) investigated the program referred to as reciprocal

teaching. This was a researcher-designed, multiple strategies instructional package

(Brown et al. 1996). Reciprocal teaching is used to enhance comprehension skills and is

comprised of a general set of procedures that incorporate elements of scaffolded

instruction (Vacca & Vacca, 1998). The four cognitive strategies used are predicting,

question generating, summarizing the main content, and clarifying. When using

reciprocal teaching the teacher begins with a discussion to activate students' prior

knowledge. There is much dialogue between teachers and students throughout all phases

of learning for the purpose of jointly constructing meaning from text. The students then

make predictions based on this knowledge. The teacher will then model or demonstrate

how to question, summarize, clarify, and predict. The use of these strategies follows a

pretty rigid sequence. Eventually the students perform these activities under guided

practice and then independently. The teacher continues in a coaching or guiding role by

prompting, instructing, or modifying when needed. Ultimately, the students assume

control and act as teachers to their peers using the strategies they have learned. It is

typically conducted in small groups, but can be used one-to-one or in large groups. A

lesson takes about 30 minutes.

The study (Palincsar & Brown, 1984) was conducted to evaluate reciprocal

teaching of comprehension fostering and comprehension monitoring of seventh grade

students who had extremely weak comprehension skills. The middle school students in

this study had grade level decoding skills, but were typically achieving two years below

grade level in comprehension. The program focused on using expository text. Lessons

were conducted daily for several weeks. The students were taught four strategies in the

context of small group instruction using shared dialogue between the teacher and student.

The four cognitive reading comprehension strategies taught were summarizing,

generating questions, clarifying, and predicting. Students were explicitly informed on

how to use the strategies, why they were important, and when they should use them.

They were also taught to use the strategies to monitor their understanding of the text.

Initially, the teacher explicitly modeled the strategy, and then gradually transferred more

responsibility to the student while she continued to coach and provide feedback. Group

members took turns being the leader or teacher and the adult teacher would scaffold the

activity if needed. Students worked cooperatively to develop an interpretation of text.

Acquisition of the strategies in this context resulted in significant improvements.

Students scored significantly higher on tests of reading comprehension than matched

control-group students. Poor readers improved on their comprehension test scores from

below 40% to over 75%. When measured over a 4-month period, students in the

reciprocal teaching group averaged a 20-month gain on a standardized measure of

comprehension. The control group made only a 1-month gain. The reciprocal teaching

group improved from the twenty-fifth to the seventy-eight percentile in social studies and from the fifth to the sixty-ninth percentile in science. In contrast to this the control group moved from the thirteenth to the eleventh percentile on a social studies test and from the twentieth to the nineteenth percentile on a science test (Pearson & Dole, 1987). The improvements shown by the reciprocal teaching group were maintained over time (2-6 months after the intervention has ceased) and generalized to improved classroom performance.

Reciprocal teaching positively affected comprehension in Palincsar and Brown's (1984) original study and also in subsequent studies done by Rosenshine and Meister (1994). Reciprocal teaching was found to be more successful when there was more explicit teaching of the four comprehension strategies.

Informed Strategies for Learning Study.

Paris et al. (1984) investigated how children's awareness about reading can facilitate intentional use of reading strategies using the program Informed Strategies for Learning or ISL. This instruction increases the learner's awareness of the purpose of reading, provides specific means for achieving meaning, and promotes comprehension monitoring. Instructional techniques incorporated in ISL included (1) informing students what the strategy is, how it works, and when and why is should be used; (2) describing the strategies in meaningful terms and making visual reminders; (3) having group discussions regarding the strategies; (4) guided practice in applying strategies; and (5) using reading from content area to promote generalization of the strategy across subject matter. The ISL program taught strategies that included inference, main idea, summarization, skimming, monitoring, and fixing-up. The researchers hypothesized that

teaching students ISL strategies would improve their reading comprehension. The program was evaluated with third and fourth graders using a variety of outcome measures. The results indicated that students who received the ISL instruction increased their awareness of the role of strategies in reading and the goals of reading. Students from the ISL program also improved their reading ability. The data from the yearlong study showed that ISL student outperformed students in a control group on error-detection tasks and cloze procedures, although the results on tests of reading comprehension on standardized tests showed no differences between the groups (Pearson & Dole, 1987).

The following three studies are significant in-depth research investigations. They are illustrative of approaches to reading comprehension instruction that elementary teachers implemented in their classrooms after becoming aware that more than single strategy use was required for students to successfully construct comprehension.

Students Achieving Independent Learning (SAIL) Study.

Students Achieving Independent Learning (SAIL) is a form of Transactional Strategy Instruction (TSI) (Pressley et al., 1992). TSI promotes active learning and shared thinking and emphasizes transactions between students, teacher, and text. Teacher's actions are guided by students' reactions. Instruction takes place in a collaborative, social setting. Teachers use direct explanation and scaffolding of a small set of strategies at a time. TSI can be used at any grade level and linked across content areas. It also consists of a common strategy language for use across grade levels. TSI uses deliberate teacher language to turn skill instruction into strategy instruction. Explicit

instruction focuses on the "what, how, and why" of strategies that leads to the development of students who are independent and self-regulated in making meaning from text. Some of the cognitive/metacognitive strategies SAIL uses are: thinking aloud, constructing images, summarizing, predicting, activating and relating prior knowledge, questioning, clarifying, verifying, analyzing text structure, monitoring comprehension, setting a goal, previewing, rereading, skipping, substituting, looking back, attending to the most important information, and asking someone for help. These strategies are taught through teacher think-alouds and explicit instruction such as modeling, coaching and scaffolded practice. SAIL also uses the following strategies to place an emphasis on student interpretation of text: imagining how a character might feel, creating themes, reading for multiple meanings, creating literal/figurative distinctions, looking for a consistent point of view, relating text to personal experience, relating text to another, and responding to certain text features such as point of view, tone, or mood. Students are not only taught how to use these strategies, but also when, where, and why to use them, along with the benefits of using them. Strategies are taught to students both independently and in groups. Direct explanations and modeling help students to internalize and use strategies adaptively. There is not a predetermined sequence of strategy use in SAIL. It is more flexible and opportunistic than the reciprocal teaching strategy. There is also more emphasis on an individual's interpretation of text, and helping students learn when to best use particular comprehension strategies. SAIL is a long-term process that occurs across school years.

The following describes in detail a quasi-experimental study of SAIL done by Brown et al. (1996) that confirms the effectiveness of the approach in improving student

comprehension of text. Brown and his colleagues observed that past qualitative studies of TSI provided an understanding of the nature of TSI instruction, but it lacked formal comparisons on a variety of reading measures of students who received TSI instruction versus more traditional instruction. This study attempted to address that formal comparison between SAIL, a TSI program, and traditional reading programs.

In their study Brown et al. (1996) put forward three hypotheses. First, those students participating in SAIL would increase their reading comprehension as measured on standardized tests. Second, after a year of SAIL instruction, there would be a clear indication of students learning and using the strategies as measured by strategy interview data and a think-aloud measure. Third, students would develop deeper, more personalized and interpretive understandings of text after a year of using SAIL as analyzed by student recall protocols. They tested these hypotheses using a design that was an academic-year-long quasi-experimental study.

The hypotheses were evaluated using low-achieving second-grade students. The evaluation contrasted the achievement of low-achieving second-grade students who participated in SAIL with that of five matched groups of second-grade students receiving high quality, but more conventional reading instruction.

The participants of the study were not randomly assigned. The five TSI teachers had been trained in the SAIL approach and their beliefs about teaching were consistent with a TSI philosophy. The comparison teachers were not trained in SAIL nor had ever used it. Second graders who were reading below second-grade level at the beginning of the year were selected as student participants in this study. Students were given the Stanford Achievement Test (SAT), a standardized achievement test, in late November or

early December because they wanted students functioning at least at the 1.5 grade level for this test. Then, in March and April lessons were videotaped and transcribed. There were clear instructional differences noted between the SAIL and non-SAIL classrooms. In the SAIL classroom no fewer than seven comprehension strategies were taught; in the comparison group no more than three were taught. In the spring there was much more strategy instruction going on in the SAIL classroom.

Measures used in this study were strategies interviews, story lesson and retelling questions, think-aloud measures, and the SAT subtests; Reading Comprehension and Word Study Skills. The evaluations consisted of finding out whether SAIL instruction produced better performance than the comparison instruction. With respect to measures of reading comprehension strategies, there was no significant advantage for the SAIL students in the fall. By spring SAIL groups were observed using many more strategies than the comparison group. They used more comprehension and word-level strategies than did the comparison group. SAIL students were significantly more interpretive in their recalls and even recalled more literal information than the comparison group. SAIL students used strategies on their own more than the comparison group, which is suggestive of self-regulated readers. The think-aloud analysis showed SAIL students responding more interpretively as well as personally. By the academic year's end, the SAIL second-grade students showed a statistically significant increase in their performance on standardized tests given for reading comprehension (p<.05). They clearly outperformed their peers in the comparison group.

In summary, the authors discovered that strategy instruction in the SAIL classroom and the conventional classroom differed greatly in that strategy instruction was

much more prominent in the SAIL classroom. Students in the SAIL classroom acquired

more information from the stories they read and developed a richer, more personalized

understanding of the stories. They also remembered more content from their daily

lessons than students in the non-SAIL classrooms. On standardized measures of reading

comprehension and word attack, the second grade students in SAIL classrooms

outperformed students in comparable non-SAIL classrooms. The experimenters inferred

that SAIL students learn more from their reading lessons than do students in more

conventional classrooms. All reading achievement measurements converged on the

conclusion that a year of SAIL instruction improves the reading of at-risk second-grade

students more than alternative high quality reading instruction does.

The importance of this study is that it showed it is possible to teach primary-level

students to use strategies such as predicting, questioning, visualizing, clarifying, and

summarizing with positive results on reading comprehension.

Direct Explanation Strategy Instruction study.

The study by Duffy et al. (1987) evaluated the effects of direct explanation

strategy instruction on reading comprehension achievement. This study's results had a

profound effect on the reading education community, with the result that many educators

subsequently implemented this type of comprehension strategy instruction in their

schools (Pressley & Wharton-McDonald, 1997).

The experimenters' hypothesis was that teachers need to explicitly explain in

consistent ways, over extended instructional periods, the mental processing associated

with using a reading strategy. They also need to explain and model when it can be used,

and how to apply it in a flexible manner. Doing this will make students more aware of

lesson content, more aware of what good readers do to make sense of text, and more likely to use strategic reasoning while reading, and thus score higher on measures of reading achievement.

Three research questions were posed: (1) Can teachers learn to be more explicit in explaining the reasoning associated with using basal text skills as strategies? (2) Can explicit teacher explanations increase low-group students' awareness of both lesson content and the need to be strategic while reading? (3) Can explicit teacher explanations increase low-group students' conscious use of skills as strategies and ultimately lead to greater reading achievement?

The experimenters reasoned that if results indicate that explicit teacher instruction of mental processing improved the awareness and achievement of low-group students, then by inference, such explanation could be an important instructional ingredient not only for at-risk students, but for students of higher ability levels also.

The subjects were 20 third-grade teachers and their students in urban schools in the Midwest. The students were from the low reading groups. Baseline data showed students to be equal on all pretest measures.

Students in the treatment group were taught the reasoning that expert readers employ when strategically reading. Students were taught how to strategically use the skills taught in the basal. The emphasis was not on the skills, but rather on the mental processes an expert reader uses when strategically applying basal text skills to achieve comprehension of text.

Teachers recast the isolated skill tasks as problem-solving strategies by analyzing the cognitive and metacognitive components of that skill. Teachers then supplemented

the procedure skill exercises emphasized in the basal guide, with modeling of the cognitive and metacognitive acts involved. Searching their repertoire of strategies and reasoning were the essence of the mental processing modeled by the teachers. Teachers were not provided with scripts and they developed their own strategy explanations for each lesson. They presented their own explanations to students as to what good readers do and how it is done in a flexible and unique way.

The critical difference between the two groups was that the treatment group of teachers was taught to emphasize the mental processes involved in using skills as strategies. It focused on assuming cognitive control of instruction by making decisions about how to recast skills as strategies, and about how to explain the mental processing one carries out when using such strategies. The treated-control group of teachers followed their usual instructional routines for basal textbook skill instruction.

The study was naturalistic in that (a) the treatment teachers incorporated the curricular and instructional innovations into their normal reading program; (b) the regular teachers did all the teaching; (c) the lessons were scheduled as part of the routine basal reading text instruction: and (d) the teachers did not use scripts, but made preactive and interactive decisions about how to modify the text.

The results of the study showed that explanation ratings of treatment teachers were significantly higher than the explanation ratings of treated-control teachers. Analysis of variance (ANOVA) procedures were used to examine the differences in explanation rating of treatment and treatment-control teachers. Repeated measures using six observations as time points and found a significant main effect favoring treatment teacher explanations ($p < .001$). In other words the treatment teachers were found to be

more explicit in explaining the mental processing associated with using reading skills as strategies than the treated-control teachers were.

The study found that explicit teacher explanation was related to increased student awareness. Lesson interviews showed that low-group students whose teachers provided explicit explanations of mental processes involved in using skills strategically became more aware across time of lesson content generally, and of the situational and procedural knowledge presented during lessons particularly. No difference was found between groups for declarative knowledge. The authors contribute this finding to the fact that declarative knowledge is easier to develop an awareness of, and it is easier for teachers to make it explicit. Concept interviews revealed a significant difference in the total concept interview scores favoring students in the treatment classrooms. The concept interviews showed that treatment students were more aware of the need to be strategic when reading.

Poor readers are thought to have poor metacognitive skills. This means that they do not possess strategic knowledge, nor do they know how, when, or why to apply the knowledge of the strategies they do possess when reading. But this study shows that this is not necessarily the case. Poor readers may just need to have these strategies taught to them in a more explicit way in order to become successful.

In conclusion, this study affirmed that (a) teachers can learn to be explicit in explaining the reasoning associated with using basal text skills as strategies; (b) explicit explanation increases low-group students' awareness of lesson content and the need to be strategic; and (c) explicit explanations lead to more conscious use of strategic reasoning, and to higher achievement on one subtest of a standardized reading test and on a maintenance measure administered 5 months after the end of the study.

The authors believe that the results across measures are strong enough to conclude that explicit teacher explanation of the reasoning associated with using reading strategies is an important component of reading instruction, especially with low-group students.

Questioning the Author (QtA) study.

Another important study on reading comprehension was done by Beck et al. (1996). The Questioning the Author (QtA) approach attempts to engage students with text and tries to develop in students an improved understanding and a critical disposition toward texts. QtA is more student-centered and includes more interpretive discussions than traditional reading programs. It encourages students to play a more interactive role with the text, their teacher, and their peers and it focuses on having students discuss, debate, and reflect on what an author is trying to say in order to build an interpretation from it. QtA uses cued think-alouds and divides the text into short segments. The teacher models queries or prompts to assist students in coming to terms with the author and his ideas as well as the way the text is constructed. Then the student queries or questions a text collaboratively, section by section. The authors of this program have developed a set of generic questions or queries that could be asked to initiate a discussion, help students focus on the author's message, link information, and identify or clarify problems with the way the author presented information (Wilhelm, 2001). QtA's instructional goal is to activate and engage readers by using four features. First, it addresses text as the product of fallible authors. Second, it deals with comprehending text by using broad probes, which are directed toward making sense of ideas in text and constructing meaning. Third, it takes place in the context of reading as it initially occurs throughout the

classroom content area. And fourth, it encourages collaboration in the construction of meaning with peers and teachers.

Beck et al. (1996) did a yearlong study examining their approach to reading comprehension. This study's goals were to learn the extent to which teachers found the approach practical, how this approach changed teacher's interactions with students, and the extent to which students' interactions with text were affected; both in the classroom and when they were reading on their own.

The study involved 23 inner-city fourth-grade students and their reading/language arts and social studies teachers. Teachers were acquainted with two tools that are used with QtA instruction. The first tool was a Modeling Protocol, which was used by the teacher to demonstrate or make public how a reader might think through the ideas presented in a text in order to build understanding. It involved modeling the cognitive and metacognitive processes a good reader uses to construct meaning from text. The second tool was a set of Queries designed to initiate discussion of the text, and also to keep the discussion focused on clarifying the information read. Queries were used to explore ideas, in contrast to just asking questions for recall. The authors developed Initiating Queries and Focusing Queries. They used the same Initiating Queries (ask what the author is saying or the message) for expository and narrative text, but had separate Focusing Queries (ask what the author means or let you know something has changed) for the two types of text. Focusing queries foster students' understanding and appreciation of stories by drawing attention to the author's manipulation of narrative elements such as plot shifts, characterization, resolution of conflicts and author's style.

The two teachers implemented the QtA approach during their reading and social studies classes.

The main thesis supposed was that using the QtA approach would move instruction from a direct question-and-answer session toward participatory discussions based on constructive conversations.

The type of questions teachers asked were categorized by purpose into four groups: (1) to retrieve information from text, (2) to construct the message of the text, (3) to extend discussion, and (4) to check for specific knowledge. The questions teachers asked students were then scored by using these groups. Analysis showed a significant difference between the baseline and the QtA lessons for both social studies and reading/language arts teachers. There was a shift from retrieving information questions to constructing meaning questions. After implementing QtA, teachers reacted differently to student responses. They no longer focused on factual questions, but on questions that asked students to think and construct meaning.

The authors felt that if QtA promotes discourse they should find out who was doing the constructing. In the traditional initiation-response-evaluation (IRE) lesson format the teachers dominate the talk and students are given few opportunities to respond for any length. A changing pattern of discourse was observed in QtA classrooms. There was a shift away from the teacher dominating the lesson to increased student talk. The amount of student talk doubled in reading/language arts, and more than tripled in social studies.

The authors also examined student-initiated comments and questions. Analysis of student initiations showed not only that students' inquiries increased, but it also showed

that students' remarks became more complex. Students' responsiveness to their peers

also showed a dramatic change. Students went from never acknowledging their peer's

responses to many constructive comments and using their peer's responses to formulate

their own responses. The authors felt that exchanges such as these indicated a

collaborative meaning-constructing dialogue; contrasting with the competitive nature of

what was seen in the base-line lessons.

A long-term goal of QtA was to have students implement this approach to

constructing meaning and monitoring understanding into their own independent reading.

On the pretest, the lower levels of constructive activity dominated students' responses,

contrasting with the posttest where more than half the responses dominated higher levels

of constructive activity.

The investigators also evaluated the students' monitoring of their own

understanding as either successful or unsuccessful. The results of the monitoring

question were dramatic in that the pretest and posttest were virtual mirror images of each

other. On the pretest nearly three-quarters of the students failed to monitor the extent of

their comprehension. On the posttest more than three-quarters of the students succeeded

in monitoring their comprehension. The authors are of the opinion that...

> "The monitoring result may be even more meaningful than the result for the
> constructing-meaning question, because a reader cannot always make sense of a
> text, as in the case if it has poor coherence or requires extensive background
> knowledge. It is possible however to recognize when one is confused. Indeed,
> recognition of the existence of a problem is a necessary first step in trying to deal
> with it." (p.408)

The overall results in analysis of independent comprehension situations showed students

moving toward the same engagement with text seen in the collaborative discussions. The

results in this test cannot with certainly be applied to QtA because of the lack of a control group, but the authors saw a pattern of results across the constructing meaning and monitoring questions.

As students' involvement in the reading process continued under QtA, students began to see themselves as capable thinkers who had ideas worth sharing. Teachers moved toward more shared control of classroom discussion, and redefined their roles in fundamental ways. There was a shift to teach for depth, instead of coverage of a large quantity of material. Teachers saw themselves more as directors or coaches. Both teachers were encouraged that the collaboration brought about by QtA included the "low ability" students who were now experiencing more success. Teachers commented that students developed positive attitudes toward learning, and they were motivated by the intrinsic awards of understanding and mastering knowledge, rather than by extrinsic awards.

The authors of QtA (Beck et al. 1996) admit that there are some difficulties with the program. Initially it was not easy for the teachers to implement, nor was it ideal in every experience. It was difficult for the teachers to break habits they had developed, and it was difficult for the teachers to give up more control to the students. Teachers had to become more flexible and follow student reactions to the text. In QtA there are no scripts and the teachers had to formulate using the appropriate queries to follow the form of a particular text. The teachers in this study had a high level of support from the experimenters. The authors assert that this support would not be feasible for wider distribution to ordinary school settings.

Beck's et al. (1996) data on the efficacy of questioning the author is encouraging. Teachers can transform traditional classrooms to more student-centered classroom and students who are engaged in more interactions and discussions assume more control of their learning. Students become more successful at higher-order comprehension skills.

Reading Comprehension Routines or Programs

Reading comprehension routines or programs have been developed that include many of the components that the previous research studies have emphasized as being effective in teaching students cognitive/metacognitive reading comprehension skills. This paper will review them briefly.

Reader's Workshop.

Reader's Workshop is a reading comprehension program developed by Keene and Zimmerman (1996). In their book, Mosaic of Thought, the authors claim that too many children do not have an awareness of their own comprehension. Teachers need to monitor their own awareness of their thinking processes while reading and then explicitly model those processes frequently for their students (p.39). They do this using a Reader's Workshop method that employs whole group, small group, and individual instruction while guiding students through their use of reading comprehension strategies. The authors identify seven basic comprehension strategies that proficient readers use when they read. They incorporate these strategies into their instruction. They are: (1) activating prior knowledge, (2) determining important ideas or themes, (3) drawing inferences from text, (4) retelling, (5) asking questions, (6) monitoring comprehension or utilizing fix-up strategies, and (7) creating visual and mental images.

Keene and Zimmerman (1997) recommend a method that moves away from worksheets. The authors encourage use of more real-world, student-driven instruction and application of reading strategies that all of us use every day. Reader's Workshop begins with the teacher modeling his/her reading process and strategies through think-alouds. In small or large groups students are invited to share their thoughts about the text. Students meet in groups or pairs to discuss the themes and an understanding of their comprehension. Book clubs focus on determining the importance of the text. Think-alouds are used to assess the student's use of a strategy. Text sets are used to emphasize themes. Sharing time focuses on what student's found important and what strategies they used to enhance their comprehension. Connections between strategies are made throughout the study. The teacher models a variety of texts, with students gradually assuming responsibility for modeling.

Keene & Zimmerman (1997) observe that research suggests that strategies used by proficient readers be taught with singular focus, over a long period of time, and to students in all grade levels. The teacher should model and students should practice strategies using a variety of texts. Instruction begins with a great deal of modeling. Gradually, responsibility for using the strategies is released to the students and they become more independent in using the skills. The authors claim that in doing so students will comprehend more deeply, critically, and analytically.

Think-Aloud Strategy.

The think-aloud strategies presented in Wilhelm's (2001) book, Improving Comprehension with Think-Aloud Strategies, evolved from ideas formulated by Russian psychologist Lev Vygotsky. Vygotsky contends that each child has a zone of actual

development (ZAD) and a zone of proximal development (ZPD). The ZAD is where a child can effectively operate without assistance. The ZPD is the level where the child cannot handle the task alone, but can be successful with the help of a more expert person. This is also the premise behind scaffolding instruction.

Wilhelm's premise behind think-alouds is that the most important thing we can teach our children is how to learn, which is teaching strategic knowledge. The most effective way to teach strategic knowledge is through explicitly modeling the strategies expert readers use in the context of a meaningful task using authentic texts.

The think-aloud technique makes strategic knowledge visible, audible, and overt to students by vocalizing internal thought processes. According to Wilhelm, a think-aloud of reading creates an observable record of the strategic decision-making and interpretive processes that experts use when going through a text. It reports everything a reader is aware of, noticing, doing, seeing, feeling, asking, and understanding as they make their way through a text. It involves talking about not only the reading strategies being used, but also the content of the text being read. Think-alouds identify the hidden strategies of experts and share the reader's secrets by making them visible.

Teachers using the think-aloud approach teach multiple strategies in a flexible opportunistic way. Teachers scaffold the instruction by explicitly modeling the strategies, then slowly let the students take over responsibility for using the strategies. Learning takes place in a cooperative collaborative environment, with much dialogue and discussion taking place between teachers and peers. This encourages students to become active engaged readers. Think-alouds not only involve students actively in the reading process, but they also allow teachers to assess the student's progress (Rosenshine, 1997).

Baumann and his colleagues found that instruction in the think-aloud strategy helped improve students' abilities to monitor their comprehension. Both teacher and student uses of think-alouds have been shown to improve comprehension (Baumann et al., 1992).

Think-alouds are part of a number of programs that research has proven effective for teaching reading comprehension. These include Reciprocal Teaching, Informed Strategies for Learning (ISL), and SAIL (Brown et al., 1992; Palincsar & Brown, 1984; Paris et al., 1984).

Collaborative Strategic Reading (CSR).

In the Collaborative Strategic Reading (CSR) (Klinger & Vaughn, 1999) approach students work in small cooperative groups and have specific roles. They apply four comprehension strategies to reading. Cue cards may be used and learning logs are completed before and after reading. The cognitive/metacognitive strategies taught and practiced are: (1) Preview (predict), (2) Click and Clunk (monitor comprehension and use fix-up strategies), (3) Get the gist (main idea, restate) and, (4) Wrap up (summarize, ask questions).

Implications for Teaching

What implications for teaching do the reviewed research studies and programs show us? The studies demonstrate that strategy use is causally related to reading comprehension acquisition. The studies also show evidence that these reading comprehension strategies are teachable to all readers, including high-risk readers, and are teachable in the early grades. These strategies are best promoted by using instructional programs that include explicit teaching of a repertoire of strategy use with metacognitive components in an interactive group setting. Classroom teachers are asking the following

questions. What can we do to teach students to engage in these effective behaviors?

How can we help students acquire the strategies and processes used by proficient

readers? What "best practices" or "big ideas" can teachers glean from research and

studies to incorporate into the design and delivery of their reading comprehension

curriculum and instruction? The converging evidence from the studies suggests that

effective, proven instructional practices for reading comprehension include the following

components:

A.   Effective reading comprehension instruction teaches children multiple cognitive

and metacognitive strategies used by expert readers. The thinking strategies most often

used by proficient readers include: activating prior knowledge or predicting, determining

important ideas and themes, asking questions of themselves and the author, creating

visual images, drawing inferences, summarizing or retelling, and clarifying or using fix-

up strategies (Brown et al., 1984; Ellis & Worthington, 1992; Fielding & Pearson, 1994;

Palincsar & Brown, 1987; Paris et al., 1984; Vacca & Vacca, 1999).

B.   Proficient reading involves much more than just using individual strategies. It is

constantly adapting many cognitive and metacognitive processes to the needs at hand.

Teachers need to be proficient and knowledgeable in many strategies to respond flexibly

and opportunistically to students' needs (Keene & Zimmerman, 1997; Wilhelm, 2001;

Vacca & Vacca, 1999).

C. Effective reading comprehension instruction is explicit with teachers modeling

strategies and giving students ample time for guided practice, coaching, and independent

practice and feedback (Brown et al., 1996; Duffy et al., 1987; Palincsar & Brown, 1987;

Paris et al., 1984).

D.   Effective reading comprehension instruction is scaffolded, where teachers skillfully

structure the environment to make it easier for students to participate in complex tasks

that they cannot perform adequately without assistance. They use this process to help

children achieve more than they can on their own. The ultimate goal is independent use

of the strategy by the student (Paris et al., 1984; Wilhelm, 2000).

E.   Effective reading comprehension instruction is meaningful and taught across all

content areas and pervades all genres and subjects. It should not be taught as an isolated

event (Vacca & Vacca, 1999).

F.   Effective reading comprehension instruction actively engages and motivates students

using cooperative and collaborative instructional practices (Keene & Zimmerman, 1997;

Stronks & Blomberg, 1993; Vacca & Vacca, 1999; VanBrummelen, 1994; Wilhelm,

2001).

G.   Effective reading comprehension instruction should start early, even before children

read conventionally, and it should continue for many years. (Beck et al. 1996; Brown et

al. 1996; Duffy et al. 1987; Bowman et al. 2000; Snow et al. 1998; Smolkin & Donovan,

2001).

The instructional programs or routines discussed earlier in this paper all include

cognitive and metacognitive strategies in their routines and have been developed to

explicitly teach reading comprehension skills at the elementary level. They include many

of the "big ideas" found to be effective in instruction of students at the elementary level.

These routines are an integrated set of practices that can be consistently applied to any

text, at any level, and used by any classroom teacher.

In their book, <u>A Vision with a Task</u>, Stronks and Blomberg (1993) write that teachers often act as though most learning is disconnected from personal meaning or context and not inherently meaningful. Teachers often forget that facts and skills are important only when used in a meaningful context to deepen insight or enable more informed thinking and acting. Instruction needs to include metacognitive strategies that give meaning and purpose to the task at hand, as well as strategies to monitor and reflect on their progress. Students are not passive recipients of information, and active engagement of students in their learning has to be emphasized. Students are called to be responsive disciples and schools need to help prepare students for real-life decision-making. Stronks and Blomberg write that when God brought the animals to Adam to name He witnessed that humankind has the calling to participate actively in both discerning and shaping meaning. Adam was fully capable of responding to creation in an imaginative and creative way, just as we have to believe our students are capable of responding. This ability to make meaning is God's gift to all of us, and teachers need to bear this in mind when equipping their students with skills needed to use this gift to their fullest potential. All the strategy instruction routines previously detailed describe teaching using a collaborative, student-centered approach, welcoming students' ideas and contributions. This shows respect and dignity for students as image-bearers of God.

In this era of ethical relativism and moral equivalence it is important to teach students to read strategically. It not only helps them construct meaning from text, it also helps them respond to, or resist if need be, the meanings authors put forth. They learn that authors have the potential to be fallible. Students must be able to analyze and critique their worldviews and other worldviews presented to them. Students need to

receive instruction that enables them to interpret what the author's message is compared to what the Bible teaches, or read text from the viewpoint of Scriptural truth.

Constructivist teaching approaches stress process over content. The instructional programs or routines reviewed also stress process, and as shown, process is very important. But content is just as important. These programs do not attempt to tell teachers what the content is; only that strategy instruction will help improve comprehension of the content being taught. Children need to understand that they are not creating new knowledge, just using strategies and group discussion to understand facts and truths that have always been there, knowledge given to us by God. There is objective knowledge and transcendent universal truths that are unchanging. With successful comprehension comes discernment; the ability to discern the difference between true and false, good and evil, the ability to discern that God is in all things. Paul says in Romans 12:2 "Do not be conformed to this world, but be transformed by the renewing of your mind, that you may prove what the will of God is, that which is good and acceptable and perfect."

Summary

Research has shown us some instructional "big ideas" concerning reading comprehension. It recognizes that proficient readers use multiple cognitive and metacognitive strategies to comprehend text. During reading they think about their own thinking by monitoring and regulating the skills they need to be proficient. Teaching multiple reading strategies improves reading comprehension and these reading comprehension strategies can be taught using multiple instructional programs that have been developed for elementary teachers and are ready for implementation in the

classroom. Teaching these reading strategies help students become independent, proficient, critical readers, and these strategies have been shown to benefit all readers.

Comprehension strategy instruction programs have many commonalties. Many are balanced programs that teach comprehension by incorporating multiple strategies. Research validates that educators should teach elementary students a repertoire of reading comprehension strategies with metacognitive components. This teaching should be done using an explicit approach followed by much guided practice on the part of teachers and students. Instruction should take place in a cooperative collaborative setting. It should include many text genres, an authentic setting, and real world experiences. Instruction should occur across content areas with emphasis on integrating reading with regular curriculum content instruction. Instruction should start early and be taught across all grade levels. The ultimate goal is that students will internalize the strategies taught, and use them in an independent self-regulated way. The development of such competence requires long-term instruction that occurs over semesters and years.

One of the most exciting results of research is that comprehension strategy instruction is especially effective for students who are poor comprehenders. In some studies, less able readers who had been taught a comprehension strategy were indistinguishable from more able readers who had not been taught the strategy directly (Fielding & Pearson, 1994).

Concerns

Comprehension strategy instruction routines or programs are relatively new in education, and there remain many concerns for researchers and educators. Pressley

(2000) makes a valid point that comprehension strategy instruction might become overwhelmingly complex, and if all the components are thrown into the mix, instruction will be confusing and ineffective. What is the optimal number of strategies to teach, and what routine is the most effective for what students? Teachers must be provided with appropriate training to ensure that they know the answers to these questions, along with training on how to teach strategy routines.

Pressley et al. (1997) conclude from their research that comprehension-strategies instruction is an intervention that appeals to and is only possible for some teachers. In their study, teachers voiced concerns about how comprehension-strategies instruction would fit or mesh with their current reading program. Teachers were concerned about their ability to extend comprehension-strategies instruction across the curriculum, and they required a great deal of support and guidance implementing comprehension-strategies instruction. Teachers also voiced the reasonable concern that it was difficult to assess student progress in mastering strategies.

Teacher resistance continues to be a large obstacle to teaching cognitive and metacognitive reading comprehension strategies. Why do many teachers avoid teaching students comprehension strategies and routines? Teachers have a difficult time letting go of old patterns; such as giving up control and letting their students have more autonomy. But, the teacher is the final arbiter or trendsetter of instruction. They are the bridge between research and practice (Ellis & Worthington, 1994). Keene and Zimmerman (1997) contend that one way to overcome teacher resistance is to get them hooked on being good comprehenders themselves by explicitly teaching them to use the comprehension strategies used by proficient readers, and then they in turn will teach their

students these strategies. Pressley (2000) asserts that Keene and Zimmerman's book might succeed in getting teachers to use active comprehension strategies, and in doing so they will better understand why strategies should be taught and therefore be more committed to using them. Teachers play a crucial role in helping students learn to comprehend. Keene and Zimmerman stress that teachers are the chief learners in their classrooms. They stress that teachers need to understand their own reading comprehension strategies before they can successfully teach them to their students.

Concerns by some constructivist educators are that teachers can inadvertently communicate that "my way is the only way" causing students to get a false sense of the role of reasoning in comprehension strategy instruction. Other researchers and educators argue that process cannot be separated from content and they believe direct instruction of strategies emphasizes isolated skills, rather than whole and meaningful academic tasks (Pressley et al. 1992).

All of the previously mentioned programs or routines use some form of scaffolded instruction, which has its limitations. There are educators who also feel all instruction should be individualized, as the ZPD is different for every student. This would make strategy instruction very labor and time intensive. Some teachers have difficulty letting students make and find their own errors. Using scaffolded instruction requires a skilled teacher. Scaffolded instruction does not lend itself to Teacher-Manuals, or Curriculum Guides. It is very flexible and opportunistic in responding to students' needs for instruction and feedback (Ellis & Worthington, 1994).

John Van Dyk (2000), in The Craft of Christian Teaching, brings up valid questions that instructors need to ask themselves. Do the strategies proposed contribute

to our task of guiding, unfolding, and enabling? Do the strategies equip students for knowledgeable and competent discipleship? Van Dyk reminds his readers that teaching is not merely a technical procedure and teaching methods are never neutral. Teaching strategies are controlled by a religious vision or driven by a philosophical perspective. He writes that every teaching strategy consists of an individual personal touch and a universal standard technique. This paper has addressed many strategies from the technical perspective. Teachers also need to be attentive in using strategies that demonstrate a "personal touch" with frequent opportunities for student interaction, response and reflection, and use cooperation and collaboration strategies that encourage discipleship. Van Dyk contends that teachers who can successfully employ a range of strategies will meet learning needs of more students because they tap into more learning styles and student interests.

<center>Recommendations for future research</center>

Since reading is so complex, much more research on reading comprehension is going to be required. A lot of questions still need to be answered. What cognitive strategies should be taught and in what amount? What metacognitive components should be included? What instructional methods or programs should be implemented? How do we determine the most effective and efficient balance? These are some of the general questions that need to be answered. Specifically, the focus of future research in the area of reading comprehension should concentrate on (a) programs that will be acceptable to teachers; (b) authentic ways to assess comprehension that informs instruction and monitors student progress; and (c) determining the age at which to start teaching strategies.

Conclusion

Reading research has provided valuable insight into the thinking processes that proficient readers use when comprehending text. The Report of the National Reading Panel (2000) claims that comprehension instruction does work, and conscious, controlled strategy instruction is the best way to help students construct meaning. Data also suggests that all skill levels would benefit from being taught reading comprehension strategies. NPR acknowledges that becoming an effective teacher in strategy instruction takes several years.

Consistent finding in research, document that explicitly teaching the metacognitive reading strategies proficient readers use to students at the elementary level improves their reading comprehension. This research gives educators a clear picture of what needs to take place during the instruction of reading comprehension for students to become effective readers. Educators now know a great deal about how to help students become more knowledgeable, effective, self-regulated readers. Instructional programs have been developed and can be incorporated into the present curriculum across content areas. There is a rich repertoire of reading strategies to pick from with programs developed to fit most educators needs, but educators will need much training and support to use these strategies effectively with their students.

Educators need to not only believe teaching metacognitive reading comprehension strategies are important, they need to put that belief into practice in their classrooms. Evidence-based research needs to be the basis of our design and implementation of reading comprehension instruction. Reading comprehension

instruction should reflect what has been learned through research. Keene and Zimmerman (1997) sum it up quite well with this question.

> "If we know that thinking about our own thinking and using the strategies that form this metacognitive foundation are associated with the tendency to read more deeply, critically, analytically, and independently, shouldn't comprehension strategy instruction be a major focus of our work with children who are learning to read and reading to learn?" (p.43)

Learning is a life-long venture. Teachers not only need to teach their students what to learn; they need to teach them how to learn. Strategy instruction is one way to do that. Research proves that reading is more than just words.

My Personal Experiences with Strategy Instruction

Although the purpose of this study was to review literature, research and programs related to teaching reading comprehension strategies, my ultimate desire was to find personal ideas to use in helping my elementary resource students become more independent successful readers and learners. I wanted my students to read more purposefully, thoughtfully, reflectively, and become more engaged with the text and author.

One of my goals was to find an existing instructional approach that I could use, or reformulate to meet my students' needs. I also wanted to be able to use current content - area texts when teaching comprehension skills. The program or routine I chose to use with my students was the Reciprocal Teaching Program studied by Palincsar and Brown (1987). I chose this program because it used all the components that converging evidence recommended. I could also teach this program using small groups for thirty minutes per day. Explicit instruction of the strategies predicting, questioning, summarizing, and clarifying were modeled for students using the think-aloud strategy.

Instruction was scaffolded through guided practice that led to independent practice with other students. Using this program encouraged much dialogue and interaction between my students and myself, which I considered a priority. I was also able to teach these skills using content-area texts in a meaningful context.

What I learned about my students parallels much of what research says. I found that my students have few metacognitive skills. They can learn the cognitive strategies without much difficulty, but they have much difficulty knowing how, when, or why to use the strategy independently. They really don't know when to use a strategy, or why they need to use it. They often do not even realize that meaning has broken down for them, or if they do realize this, they don't know what to do about it. With the Reciprocal Teaching strategy instruction my students were forced to be much more actively engaged in their reading. After listening to me model the strategies using think-alouds, they were much more willing to participate in dialogue and discussions and try the strategies out in small groups.

Of the fourth grade students that I taught these strategies to, one out of the seven was below grade level, three were at grade level, and three were above grade level on ITBS reading comprehension scores. Last year, four of the seven were below grade level, two were at grade level, and one was above grade level. Although this is very informal data, as a resource room teacher I feel this has significance for my students. I will continue to strive in becoming more proficient in teaching these strategies and learning more about the different routines and programs being developed.

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