

TEACHERS' AND STUDENTS' PERCEPTIONS OF THE IMPACT OF CONTENT
LITERACY STRATEGY INSTRUCTION ON TEACHING AND LEARNING

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Reading researchers agree that content literacy strategies are beneficial in helping students learn. However, teachers remain resistant to teaching the strategies. Additionally, many students, even at the college level, lack the learning strategies necessary to experience academic success.

This study sought to gain a deeper understanding of the complexities of content literacy strategy instruction. The research questions that guided the study addressed the benefits, obstacles, and support and experiences needed to sustain the use of the strategies over time. Multiple data sources were used to investigate teachers' and students' perceptions of the research questions.

The main benefit found was increased student understanding and learning of content; additional benefits included increased instructional repertoire, increased student engagement in class, and improved learner independence. Most of the obstacles documented in the literature were supported in the study; however, the obstacle of time was noted most frequently. Teacher confidence was observed by the researcher as an obstacle. The majority of participants indicated they would continue using the strategies learned during the study in the future. Students noted the support needed to sustain content literacy strategy use depended on teachers providing direct instruction, practice using the strategies, and personal success with the strategies. Teachers also identified practice and perseverance as critical to sustaining content literacy strategy instruction.

The support teachers noted most frequently as important to successful implementation was collegial support – teachers helping teachers. Teacher meetings discussing the implementation process were viewed as critical to sustain effective content literacy strategy instruction. Additionally, quality teacher training, administrative support, and accountability were documented by teachers as important.

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CHAPTER I

INTRODUCTION

Background

The importance of content area reading instruction has been recognized by numerous reading researchers since the 1900s (Alvermann & Swafford, 1989; Bean, 1981; Bond, 1941; Herber, 1970; Huey, 1908-1968; Gray, 1925; McCallister, 1932). In 1925, William S. Gray, professor emeritus of the University of Chicago, coined the phrase, “Every teacher a teacher of reading” (Moore, Readence, & Rickelman, 1983) to characterize the responsibility every teacher has to assist students in his or her classroom in using content literacy strategies to optimize their learning. Content area reading instruction is based on the assumption that students construct meaning most effectively in subject areas like social studies, science, and English through the application of thinking and learning strategies which are reflective of the literacy processes used to construct meaning by good readers (Ryder & Graves, 1998). Content area literacy refers to

The process of making meaning from content in a manner that integrates reading, writing, speaking, viewing, listening, and thinking, and allows students to learn in a social context that promotes their ability to construct their understanding from multiple perspectives and multiple sources of information. (p. 5)

Students who can learn independently from content text are strategic readers who can access and link prior knowledge to new learnings or concepts, monitor and adjust their learning through metacognitive thought, and organize their understanding of expository texts with their knowledge of text structure (Stevens, 1980; Hayes & Tierney,

1982). While some learners seem to possess these skills with little or no instruction, others do not. Learners who do not have control over their learning processes and do not apply learning strategies effectively are less likely to live up to their academic potential. As reading demands increase with each new academic year, these students tend to fall further and further behind, establishing a pattern of low achievement and even failure. Thus, explicit systematic content literacy instruction on strategies that will foster their strategic reading skills is warranted (Barton, 1997; Bulgren & Scanlon, 1998; Grant, 1994).

Students in the 21st century will have a greater need to read and to write at a high proficiency level as our society moves from a labor and industry economic base to a technological knowledge base (Barton, 1997). In high schools and middle schools, textbooks still serve as major sources of information (Salembier, 1999). Ambruster, Anderson, and Ostertag (1987) note, “Most learning from reading, both in and out of school, depends on the ability to read and understand expository text” (p. 332). The importance of this is well documented in the literature (Grant, 1994; Lester & Cheek, 1998; McKeown, Beck, Sinatra, & Loxterman, 1992; Musthafa, 1996; Sammons & Davey, 1994). Typical textbooks used in content courses are characterized by heavy conceptual load, technical vocabulary, hierarchical patterns of main ideas and details, and unfamiliar content (Musthafa, 1996). To further complicate this issue, Schallert and Roser (1989) maintain that many content area textbooks are not written very clearly, requiring more strategic effort on the part of the reader. While one way for students to improve their reading of expository text is to read more of it, middle school and high school

teachers often complain that students do not read their textbooks at all. If they do read their textbooks, they do not comprehend what they read (Billmeyer, 1996; Salembier, 1999).

Reading to learn and to obtain information requires different skills than learning to read (Anthony & Raphael, 1989). The shift from learning to read, i.e. acquiring basic word recognition and comprehension skills, to reading to learn occurs around the fourth grade. It is at this time that students are required to read and to obtain information from expository textbooks in subjects such as social studies and science. Prior to this grade most reading instruction occurs with basal readers. However, few basal reading series contain expository passages (Franklin, Roach, Clary, & Ley, 1992). The transition from learning to read to reading to learn in expository genre is less than successful for many. It appears that reading expository text is not an automatic and direct extension from reading narrative text because of the variety of text structures present in expository text and the different demands placed on the reader for comprehension and retention (Musthafa, 1996).

According to Santa, Havens, and Harrison (1989) few students know how to study and to learn from text even though they may read on grade level. Tierney, LaZansky, and Schallert (1982) found that sophomores had a restricted range of strategies for learning from textbooks. Simpson (1984) found similar results with college freshmen. Experts generally agree that students have more difficulty reading expository than narrative text (Salembier, 1999). Craig and Yore (1996) note that reading from science textbooks is

complex and difficult. Strategies that will improve comprehension and understanding of expository text serve as important tools.

The Strategic Reader

Researchers' understanding of reading has changed over the last two decades. In the bottom-up or subskills theory, reading was thought to be a skill that could be decomposed into subskills, i.e., decoding and comprehension, and were simple processes (Dole, Duffy, Roehler, & Pearson, 1991; McKeown et al., 1992). Reading was considered a passive act and readers were recipients of the author's message from the text. The interactive theory views reading as an interactive, dynamic process where the prior knowledge and strategies a reader brings to the task are integral factors in fostering and maintaining understanding. The new view, which has its foundations in cognitive psychology, is complex and often referred to as the constructivist view. While description of the old view includes routinized, automatic behaviors and lower levels of thinking, description of the new view includes flexible plans, reasoning, and metacognitive awareness.

The constructivist view of a strategic reader supports at least three areas key to learning and content literacy strategies: prior knowledge, metacognition, and text structure awareness. Content literacy strategies help students become strategic readers, which is the goal for all competent readers. Degree and accuracy of prior knowledge or background knowledge has been identified by researchers as having a causal relationship to comprehension (Hayes & Tierney, 1982; Stevens, 1980). Its importance to the reader is crucial in making connections among concepts that make sense and add to the reader's

schemata (Pearson & Johnson, 1978). Ausubel (1968) went so far as to state, “The most important single factor influencing learning is what the learner already knows” (p. ix). Dole et al. (1991) delineate three forms of prior knowledge: (a) specific knowledge about the topic, (b) general world knowledge about relationships, and (c) knowledge about organization of the text. Possessing knowledge about a topic in and of itself is insufficient to ensure understanding. Learners must know when and how to make relevant connections using prior knowledge to increase their comprehension.

Another crucial factor in constructing meaning is metacognition which literally means “thinking about thinking” (Anders & Guzzetti, 1996, p. 34). Students who possess metacognitive knowledge monitor their comprehension and strategies for learning. They recognize when problems in understanding occur, identify what is wrong and why the problem is occurring, identify strategies which might help ameliorate the problem, select the most appropriate strategy, and determine if the strategy was successful (Barton, 1997). Monitoring and reflecting on their learning, and understanding the purpose of reading are critical attributes of metacognition.

In addition to accessing background knowledge and monitoring learning through metacognitive thinking, strategic readers use text features to increase their comprehension (Barton, 1997). Strategic readers of expository text preview the text by examining the headings, bold-faced print, and graphics. They are familiar with the different text structure patterns such as comparison-contrast, problem-solution, chronological, and proposition-support. Studies have shown that this awareness of text organization has resulted in better comprehension and recall of more information by readers because it

allows them to identify the author's organization of the passage and follow the author's thought process (Meyer, Brandt, & Bluth, 1980). There are certain words present in various text structures which signal to the reader points of importance that increase understanding. For example, when expository text is communicating comparison relationships, words such as "in contrast," "however," "but," and "on the other hand" are used. When causal relationships are found in expository text, words such as "therefore," "as a result," "so that," "in order to," and "because," are used. These words serve as signals of the logical relationships among the propositions presented to the reader.

Unfortunately, many students do not exhibit strategic reading behaviors. Instead, they exhibit behaviors associated with poor reading. Garner (1984) describe these behaviors as follows:

- (a) they fail to monitor comprehension; (b) they believe that the strategies will not make a difference in their reading; (c) they lack knowledge about text features; (d) they are disinterested in the text and unwilling to use strategies; and (e) they prefer familiar yet primitive strategies over less-familiar but more effective tactics. (p. 264)

In order for students to overcome these poor reading behaviors and become more strategic in their reading of expository text, they need explicit instruction (Simpson, 1984).

Teachers' Role in Expanding Content Literacy

Despite almost a century of thought and research about content area reading, classroom teachers are resistant to providing instruction in this area (Fox, 1993; Hollingsworth & Teal, 1991; Wilson, Konopak, & Readence, 1993). The research has shown that students can improve their comprehension and learning by acquiring content

area literacy strategies (Bulgren & Scanlon, 1998; Dole, Valencia, Greer, & Wardrop, 1991; Foos, 1995; Frager, 1993; Monroe, 1997). Developing a repertoire of content reading strategies can result in a reader becoming an independent learner (Musthafa, 1996; Quioco, 1997; Salembier, 1999). To possess a wide repertoire of strategies is to empower the reader to monitor his-her own understanding, which ultimately leads to greater comprehension. Content classroom teachers can select, analyze, prepare, and present information in a format structured to enhance student comprehension (Bulgren & Scanlon, 1998). Various before-reading, during-reading, and after-reading strategies have been investigated by researchers and found to be effective tools for increasing learning. Strategies such as What I Know, What I Want to Learn, What I Learned (K-W-L); graphic organizers; summarization; anticipation guides; and many others have been found beneficial to students' comprehension (Day, 1980; Foos, 1995; Monroe, 1997; Ogle, 1986; Robinson & Kiewra, 1995).

Reasons often cited by teachers for not teaching content literacy strategies to their students include: (a) they take too much time, (b) they make classroom control difficult, and (c) they prevent teachers from "covering" the content (Bean, 1997; McAloon, 1994). Other reasons cited by Bintz (1997) reflect the assumption that reading instruction is the job of elementary, not secondary, teachers. There is the belief by secondary teachers that students should already know how to read proficiently and strategically. This belief is not new. Umans (1963) wrote, "One of the most difficult tasks is to help subject-matter teachers see the necessity of teaching skills related to the reading of that particular

subject. Somehow, the feeling persists that reading is always taught ‘elsewhere’ and ‘at another time’” (p. 7).

O’Brien and Stewart (1990) found multiple reasons that preservice teachers may be resistant to teaching content area reading strategies despite the research to support such instruction. In addition to the common reasons of time constraints, the elementary teachers’ role vs. secondary teachers’ role, and content vs. pedagogy, issues such as constraints of the workplace and membership in content discipline subcultures emerged from their qualitative study. The ubiquitous social and political structure of schools serves as a powerful controller of teacher behavior. Preservice teachers’ desires are to “fit in” with other professionals. They want to live up to the perceived expectations of their fellow colleagues. Consequently, if their perception is that most teachers use lecture as a main instructional strategy and do not use many, if any, content area reading strategies, then the beginning teacher will not use content area reading strategies. Likewise, preservice teachers identify with peers who teach the same subject, and this shapes the pedagogy they are willing to try.

A surprise finding of O’Brien and Stewart (1990) was that many preservice teachers were resistant to learning content area reading strategies because they believed them to be “common sense” strategies that most teachers incorporated into their teaching naturally. They felt that the content reading strategies were really just “old wine in new bottles” (p. 121). This concept was antithetical to the teaching of the content area reading course the preservice teachers were enrolled in during the O’Brien and Stewart study. In

fact, evidence was presented that maintained the argument that reading instruction is not being addressed in content classrooms.

Daisey and Shroyer (1993) interviewed 40 university instructors who teach content reading to preservice secondary teachers to determine why some preservice teachers have negative attitudes toward a content area reading course. Five of the reasons given by the university instructors were: (a) preservice teachers do not see the rationale for a content course, (b) the content and methods course instructors who teach the preservice teachers are unfamiliar with the reading course, (c) preservice teachers are loyal to their content areas, (d) preservice teachers are not readers and writers themselves, and (e) preservice teachers think the course is remedial.

Billmeyer (1996) suggests that teachers need to become proficient in teaching students what strategic reading is and how to use effective content area literacy strategies with their curriculum to increase comprehension. In reality, many teachers have not been trained in how to teach content area literacy strategies (Bean, 1997). Teachers have reported that they spend less than 4 hours per year in staff development activities related to reading (Humphrey, 1992). However, teacher education programs continue to offer very few courses (typically one) in content area reading for secondary teachers (Bintz, 1997). Often teachers are resistant to a mandatory reading course and feel more allegiance to their discipline than to the teaching of content reading strategies (O'Brien & Stewart, 1990).

If teachers are provided quality training that embeds the teaching of reading and learning strategies into content area learning while the content is being taught, then they

can guide students toward independence as learners (Bulgren & Lenz, 1996). This approach is described as strategic teaching and is a form of instruction where the teacher models and guides the students in learning how to learn. Teaching learning strategies in isolation, without the relevancy of content students are currently studying, has been found to have limited effectiveness (Wong, 1994). The training for teachers that is necessary to assist them in developing strategic readers involves teaching the strategies in conjunction with content teaching (Bulgren & Scanlon, 1998). In addition to teaching content, teachers must teach the learning processes most useful to comprehending and retaining that content.

This study provided training to equip teachers with the knowledge and skills needed to implement content literacy strategies into their instruction. Ongoing support was provided during the 6 weeks of the study to ensure appropriate use of the strategies. After the study, teachers' perceptions of the training, obstacles, and benefits of using content literacy strategies as well students' perceptions of the obstacles and benefits of using content literacy strategies were examined.

Statement of the Problem

The problem addressed by this study was to understand students' and teachers' thoughts and perceptions regarding the benefits and obstacles of content literacy strategies.

Research Questions

This study was guided by the following questions:

1. What benefits do teachers and students perceive regarding the use of content literacy strategies?
2. What obstacles or challenges do teachers and students perceive regarding the use of content literacy strategies?
3. What reasons do teachers and students give for planning to continue or discontinue the use of content literacy strategies?
4. What support or experiences are needed for teachers and students to continue to use content literacy strategies?

Purpose

The purpose of the dissertation was to examine the benefits and obstacles of content literacy strategy instruction from the students' and teachers' point of view to increase understanding regarding the complexities of sustaining systematic content literacy instruction in the secondary classroom.

Definition of Terms

1. Content area literacy refers to the process of making meaning from content in a manner that integrates reading, writing, speaking, viewing, listening, and thinking and allows students to learn in a social context that promotes their ability to construct their understanding from multiple perspectives and multiple sources of information (Ryder & Graves, 1998).
2. Metacognition is a construct which literally means "thinking about thinking"; it involves how learners think about their learning, how they know what they know, and what they do when faced with challenging learning situations (Anders & Guzzetti, 1996).

3. Prior knowledge or background knowledge refers to specific knowledge about the topic of the text or lesson, general world knowledge about social relationships and causal structures, and knowledge about the organization of the text (Resnick, 1984).
4. Schemata refers to knowledge already stored in memory that serves as a bridge in connecting old learning with new learning; it provides the mental categories and framework necessary for processing and integrating new knowledge (Eanes, 1997).
5. A strategic reader is an effective reader who adjusts his reading to fit the type of text, employs specific tactics or strategies that will help if confusing text passages are encountered, actively pursues meaning, and carries on a mental dialogue with the writer (Barton, 1997).
6. Narrative text refers to text written to provide an aesthetic, entertaining experience such as is found in short stories (Anders & Guzzetti, 1996).
7. Expository text refers to text written to inform; it is nonfiction and is usually characterized by heavy concept load, technical vocabulary, and hierarchical patterns of main ideas and details (Anders & Guzzetti, 1996; Musthafa, 1996). Expository text has a variety of text structures.
8. Summarization refers to a condensed version of a passage that includes the most salient concepts.
9. What I Know, What I Want to Learn, What I Learned is a content literacy strategy developed by Ogle (1986); it is a strategy with three steps that guide the students in accessing what they already know, determining what they want to learn, and recalling what they learned from reading.

10. Anticipation guide is a pre-reading strategy that consists of a series of teacher-generated statements about a topic that students respond to before reading about that topic. The response format is normally dichotomous: agree-disagree, likely-unlikely.
11. Text structure refers to how a text is organized; common expository text structures include description, collection, causation, problem-solution, and comparison-contrast.
12. Graphic organizers are pictorial representations of hierarchical relationships between facts and concepts.

Summary

This study investigated the obstacles and benefits of content literacy instruction and use through the perspectives of the teachers and students teaching and using the strategies. Careful attention through staff development was given to ensure teachers possessed the background knowledge essential to understanding the importance of such instruction as well as the expertise in teaching the strategies to students. Developing an understanding of the obstacles and benefits of this important instruction will assist researchers and school practitioners in the goal of systematic content literacy instruction for all secondary students.

Limitations of the Study

The researcher in the study is the principal of the school where the teacher training, observation of the implementation process, and data collection were conducted. To avoid bias Dr. Alexandra Leavell, an associate professor in reading at the University of North Texas, assisted in the study by serving as co-trainer of the teachers, participating in teacher support meetings and conducting the teacher structured interviews. Dr. Carol

Wickstrom, who has a Ph.D. in reading from Texas Woman's University, served as the second coder of the data. Member checks were conducted with teachers regarding the accuracy of field notes from teacher observations. Dr. Leavell served as a resource throughout the study.

The Pre Study Student Surveys were not coded in any way to match responses with the Post Study Student Surveys, which resulted in a limitation regarding direct comparisons that could be made with students. No coding occurred to maintain participant anonymity and because initially no need was perceived by the researcher to do so. There were no questions that were tapping exactly the same information from the Pre Study Student Survey to the Post Study Student Survey. There were, however, questions on both the Pre Study Student Survey and Post Study Student Survey designed to determine students' knowledge, understanding, and use of content literacy strategies. When analyzing the data, it would have been helpful to see exactly the increase in understanding and knowledge or lack of it, as well as any change of "attitude" that could be gleaned from individual students. This was not possible because there was no procedure in place to identify the participant.

Additionally, the study was initially structured to include only 9th and 10th grade students in regular social studies and science classes. Teachers volunteered to be in the study after a presentation of the study and the commitment necessary on teachers' part for those who agreed to participate. Due to the fact that two of the social studies teachers declined to participate in the study, an additional volunteer was sought to participate. The additional volunteer social studies teacher taught regular world history to 11th grade social

studies students. Therefore, out of the six sections of students who participated in the study, one section was made up of 11th graders.

Volunteerism played another role in a limitation of the study. Only five students volunteered in one of the science classes. At the end of the study, the teacher encouraged others to volunteer and take the Post Study Student Survey. The teacher was not in the class when the study was presented to the students initially. This resulted in 88 students participating in the Pre Study Student Survey and 98 students participating in the Post Study Student Survey.

Lastly, the teachers were aware that the principal values content literacy strategies. Therefore, this knowledge may have influenced how they responded to the pre and post study surveys, during the teacher support meetings and the structured interviews. Dr. Leavell conducted the structured interviews to address this concern. The principal made every effort to reassure the participants in the study that honesty and their true perceptions were critical to the study, and no repercussions of any kind would occur regardless of their perceptions, positively or negatively, of content literacy strategies.

Organization of the Study

The study consisted of five phases and a timeline was developed (see Appendix A).

Phase I: Teachers and students took the pre study surveys.

Phase II: The teachers participated in training for two half days on the importance of content literacy strategies, the research related to content literacy strategies, and implementation procedures regarding content literacy strategies.

Phase III: The researcher observed level 2 teachers teaching the strategies to students and provided technical support through one-on-one dialogue and meetings.

Phase IV: Teachers and students took the post study surveys.

Phase V: Selected teachers and students participated in structured interviews.

Significance of the Study

The ultimate goal of the study was to increase systematic use of content literacy strategies in public schools by assisting researchers and school practitioners in understanding the benefits and obstacles of using such strategies as perceived by teachers and students. Although the value of such strategies is well documented in the literature, secondary teachers remain resistant to using them, students continue to struggle with understanding concepts from expository text, and 90% of colleges offer courses to assist students in learning strategies to help them comprehend expository texts.

This study sought to understand the obstacles from the perspectives of teachers and students using the strategies. Are there obstacles that can be overcome? What benefits of content literacy strategies would be necessary to negate the obstacles? If becoming an independent learner is valued in public schools, then what role can content literacy strategy instruction play in achieving that independence?

Teaching students how to learn is truly a lifelong skill that will serve them well for the rest of their lives. Content literacy strategy instruction is one important component to helping them with that endeavor.

CHAPTER II

REVIEW OF RELATED LITEARTURE

The review of related research was gathered from various sources. The Handbook of Reading Research, Vols. I and II, textbooks, compendiums, and the Educational Research Information Clearinghouse (ERIC) were explored for pertinent information on the topic of content literacy strategy instruction. An historical perspective was investigated as well as current studies and schools of thought.

The need for learners of all ages to possess strategies which assist them in the comprehension and retention of information from text (commonly referred to as content area reading or literacy strategies) is well documented (Bean, 1997; Dole et al., 1991; Simpson, 1984). Learning in schools and the workplace today is heavily dependent on obtaining information from text (McKeown et al., 1992). To construct meaning from expository text, readers must become strategic in using content literacy strategies.

Reading is more complex than was once believed. Reading was viewed in the past as a skill that could be decomposed into a set of subskills that involved both decoding and comprehension (Smith, 1965). Readers were thought to be passive recipients of information from the text. The current view of reading acknowledges that it is a complex process where the readers bring knowledge to the task and strategies they use to foster and maintain understanding. It is viewed as a dynamic, interactive process where the

reader is continually comparing new information with prior knowledge and assimilating or accommodating this information into their schemata.

Reading and learning from content textbooks in subjects such as social studies, science, and mathematics is not new (Bond, 1941; Fay, 1956; Gray, 1925; Herber, 1970; Huey, 1908-1968; McCallister, 1932; Smith, 1965; Thorndike, 1917). The research of the 1940s, 1950s, and 1960s found support for the notion that reading ability and achievement in content areas was connected. The idea that certain reading skills were related to certain subjects was held by most reading researchers during these decades. For example, Shores (1943) found that the reading skills necessary to comprehend historical material were different than the skills needed to comprehend science material. Artley (1942) and Krantz (1955) compared general reading scores with reading scores of content material and concluded that there were certain reading skills that were specific to specific content areas. Consequently, most of the research conducted was content-specific (Anders & Guzzetti, 1996). Two prominent content reading researchers during this era were Nila Banton Smith and Ruth Strang. As a result of the research by these two women, secondary developmental reading programs were established, and materials were published to address the needs of readers in content classes.

During the 1970s, the debate between the notion that different reading skills were necessary for different content areas versus a more holistic view of content reading emerged. Herber's (1970) Teaching Reading in Content Areas was the first textbook devoted entirely to content reading. Herber believed that the reading skills necessary for content reading did not vary across content subjects. The current view of content literacy

instruction is in line with a more holistic view that expanded in the 1980s, and supports the premise that content literacy strategies are not content specific, but are effective in any content area.

Strategic readers possess a large repertoire of strategies. They adjust their reading to fit the type of text, employ specific strategies to assist them if they encounter confusing text, actively pursue meaning, and carry on a mental dialogue with the writer (Barton, 1997). In addition, they exhibit skills associated with good readers, can decode rapidly, understand phonemic awareness and text features, and use large vocabularies.

Strategic readers use their background knowledge to connect old learning with new learning. They understand the importance of metacognition to their learning, and they are aware of and use text features to aid in discerning information from expository text (Barton, 1997). Strategic readers or learners understand that they have to use different cognitive strategies before, during, and after reading. They realize that before reading they must activate prior learning and focus on the topic. During reading they understand the importance of processing the content by selecting and organizing information. After reading, they integrate and apply the new learning. In order for students to become independent learners, teachers must teach these strategies directly (Reading-Language, 1989). Vacca and Vacca (1993) identified a number of metacognitive skills that strategic readers use. They recognize when problems in understanding occur and why, determine what strategies might fix the problem, and then select and apply those strategies.

Unfortunately, many students do not possess the skills of a strategic reader. In 1994, a quarter of our nation's high school seniors and approximately a third of our eighth graders failed to reach the basic level on the reading assessment portion of the National Assessment of Educational Progress (NAEP) (Williams, Reese, Campbell, Mazzeo, & Phillips, 1995). Carpenter and Johnson (1991) report that 90% of all U.S. colleges provide developmental reading programs to support at-risk college students.

Poor readers do not exhibit strategic reading skills and have misperceptions about what it means to be a good reader. They often believe they are successful readers if they read the text without error and have verbatim recall (Duffy et al., 1987). These readers seldom demonstrate metacognitive skills (Pogrow, 1993). Kletzien (1991) found that good and poor readers use the same type and number of strategies on easy passages, but as the passages become more difficult, good readers use more types of strategies and use them more often than poor readers. However, even competent readers often experience difficulty with expository text. Tierney et al. (1982) surveyed 10th graders in social studies and biology and found them to have a limited range of strategies to learn from text. Simpson (1984) found that students could rarely explain why a strategy was important to their learning and did not know when they were ready for a test. These findings support the need to teach students metacognitive strategies.

Research suggests that poor strategic readers can benefit from strategy training (Anderson, 1978; Afflerbach, 1990; Baker & Brown, 1984; Calfee & Chambliss, 1987; Hanson & Pearson, 1983; Raphael & Pearson, 1985). For example, Duffy et al. (1987) investigated the effects of directly explaining the mental acts associated with strategic

reading. Twenty third-grade teachers and their students in low reading groups participated. Ten teachers made up the treatment group and were taught when and how to explain the mental processes associated with strategic readers, and the other 10 teachers served as the treated-control group. As expected, the researchers found that the students of the treatment teachers were more aware of lesson content and of the need to be strategic when reading, and scored better on reading achievement tests.

There are three key areas that assist students in becoming strategic readers: prior knowledge, metacognition, and text features. These three important constructs provide the framework for content area literacy strategies. As Applegate, Quinn, and Applegate (1994) state, “Schema theory, metacognition, and sensitivity to text structure provide a fairly complete and plausible description of the act of reading, one with numerous implications for college reading instruction” (p. 33). Teachers must possess a deep understanding of the importance that prior knowledge, metacognition, and text structure play in helping students learn. Additionally, this understanding is necessary for teachers to make appropriate instructional decisions about when to use strategies that emerge from the research in these three critical areas.

Prior Knowledge

Reading research supports the existence of a causal relationship between prior or background knowledge and comprehension (Tierney & Cunningham, 1984). Prior knowledge comes in many forms, including specific knowledge about the topic of the text, general world knowledge about social relationships and causal structures, and knowledge about the organization of the text (Resnick, 1984). Bartlett (1932) was the

first researcher to describe background knowledge in his research of story retellings. Prior or background knowledge builds upon itself to form a framework, a schemata, into which all new learning must be integrated. This schemata provides mental categories that serve as the “hooks” upon which new pieces of information are hung (Eanes, 1997).

Schema theory attempts to explain how the learner makes sense of new information. There are three necessary ingredients for comprehension based on schema theory: categories, assimilation, and accommodation. Categories are systems about the surrounding environment. Assimilation fits new information into existing schemata, and accommodation requires adjusting or modifying existing schemata (Readence, Bean, & Baldwin, 1992). Research supports the notion that when students’ schemata or prior knowledge conflicts with new knowledge encountered in expository text, the existing knowledge is not altered (Alvermann, Smith, & Readence, 1985). Schema chunks or units contain knowledge of objects, situations, events, actions, and sequences of actions (Rumelhart, 1980). Clearly, schemata are critically important to each new learning and are constantly changing as the learner assesses the congruence of new information with available schema (Ryder & Graves, 1998).

In the classroom, an important role of a teacher is to assess students’ prior knowledge or schemata. Many content literacy strategies assess students’ prior knowledge (Ogle, 1986; Nichols, 1983). “What I Know, What I Want to Learn, What I Learned” (K-W-L) is one such strategy that activates students’ background knowledge (Ogle, 1986). This strategy involves three basic steps that guide the students’ thinking by asking them

to access information they already know about the topic or subject, determine what they want to learn, and then assess what they did learn after reading the passage.

Another well-known strategy for activating students' prior knowledge is the anticipation guide. This strategy was developed by Readence et al. (1992) and serves as a motivational tool in addition to tapping students' background knowledge. An anticipation guide includes statements designed to access prior knowledge and challenge commonly held beliefs about a topic prior to reading a passage. Students must decide whether they believe the statements included in the guide are true or false, and then read the passage with the purpose of verifying their prereading thinking about the topic.

The more knowledge students bring to the text, the more likely their comprehension will be successful. Likewise, if students bring minimal prior knowledge to the text, comprehension may suffer (Readence et al., 1992). It is therefore important for the teacher to not only equip the students with strategies to help them assess their own background knowledge, but also to provide needed information lacking prior to reading. Schifini (1994) recommends using one or more of the five senses to build background knowledge with students who are lacking the schemata necessary for a successful learning experience with a given topic or text.

Providing background knowledge alone may not yield the results in student comprehension desired, however. A study by McKeown et al. (1992) involved 48 fifth-grade students who received a prepared instructional module designed to provide background knowledge for understanding the text. After this module was presented, students were assigned to one of two text conditions: the original text or a revised version

of the text. The results indicated that the version of the text, original or revised, had the greatest impact on students constructing meaning from the text. The students who read the original text, although they had the same background information, were unable to use this knowledge to make connections with the text. The conclusion drawn from McKeown et al. was that background information is most useful when the text is coherent, and teachers may not be able to provide sufficient background information if students are required to read from a poor or less coherent text.

Although analyzing the impact of prior knowledge is complex due to the different variables, such as the text, as the McKeown et al. (1992) study points out, there are still a multitude of studies that advocate using strategies that tap prior knowledge. For example, Dole, Valencia, et al. (1991) investigated the effects of two prereading instructional treatments on students' comprehension of narrative and expository texts. The study examined the comparative effectiveness of two different instructional strategies for activating and building prior knowledge. In the study, 53 fifth graders were divided into three groups: teacher-directed treatment group, interactive strategy treatment group, and control group. The researchers developed the prior knowledge measure by identifying the major topic and constructing a paragraph to activate students' prior knowledge. Students were then asked to examine a list of 15 possible ideas and events they might find in a passage.

Scripts were developed for the two prereading strategy treatments. In the teacher-directed treatment, a 3 to 5-minute presentation was made by the teacher providing key background ideas important to the selection. In the interactive strategy treatment, the

teacher led a discussion to activate students' existing knowledge and to elicit from them important concepts related to the topic. The control group was given no prereading instruction, but instead were asked to read the selection and answer the comprehension questions. Both of the treatment groups using prereading strategies to activate prior knowledge were more effective than the group using no prereading strategies. However, the teacher-directed treatment group performed better than the interactive strategy treatment group. Although several explanations for the results were given by the researchers, their final comment was a caution about teachers "leading from behind" with prereading strategies. This finding reinforces the premise that teachers must provide explicit instruction on how to use content literacy strategies in order for students to benefit from them (Dole, Valencia, et al., 1991).

Metacognition

Metacognition is the second area that is important for teachers to understand so they can facilitate students' development of strategies to help them learn. Flavell (1978) defined metacognition as "knowledge that takes as its object or regulates any aspect of any cognitive endeavor" (p. 104). Knowledge about cognition and regulation of cognition are two key characteristics of metacognition. Metacognition involves checking, planning, monitoring, testing, revising, and evaluating one's own strategies for learning (Baker & Brown, 1984). Baker and Brown draw on Brown's (1980) work to identify metacognitive skills. Some of the metacognitive skills involved in reading are:

- (a) clarifying the purposes of reading; that is, understanding both the explicit and implicit task demands;
- (b) identifying the important aspects of a message;
- (c) focusing attention on the major content rather than trivia;
- (d) monitoring ongoing

activities to determine whether comprehension is occurring; (e) engaging in self-questioning to determine whether goals are being achieved; and (f) taking corrective action when failure in comprehension are detected. (Baker & Brown, 1984, p. 353)

Although there is not a consensus, the trends in the literature suggest that younger and less academically mature students do not engage in metacognition and use it as a means of improving their comprehension or learning (Anders & Guzzetti, 1996; Readence et al., 1992). Brown (1978), however, maintained that although metacognitive skills are used more often by older students, young children are capable of monitoring their own thinking on a simple problem.

Content area literacy strategies are designed to assist students in using metacognitive strategies to improve their comprehension and learning. One such strategy is the think aloud technique (Nist & Kirby, 1986). In this strategy, the teacher reads aloud from a text and verbalizes whatever comes to mind to model for students how to reason and the cognition that occurs while reading. It gives the teacher the opportunity to demonstrate various metacognitive processes that can assist students with their own comprehension.

Franklin et al. (1992) conducted a study to investigate the effect of metacognitive reading strategies on students in their social studies and science courses. The researchers identified strategies most strongly supported by research, trained and assisted intermediate grade level teachers in the implementation of these strategies, and evaluated the effects of structured systematic instruction on student learning when teachers understood how, when, and where the strategies should be integrated into their existing

curricula. The teachers were provided with 36 clock hours of training, as well as professor-modeling of strategies in the participating teachers' classrooms.

A multivariate analysis of variance (MANOVA) was used to control dependency between pre- and post-test measures. A one-tailed test of significance revealed that the correlations between IQ and scale scores on the subtests of reading comprehension, science, and social studies were significant at the .001 level. The findings of the study support the use of metacognitive reading strategies in content area classrooms, as the efficacy of instruction was improved when teachers were competent in their application (Franklin et al., 1992). This study also supports the notion that content area reading training for teachers is a worthwhile endeavor that yields positive student learning results.

Case studies were conducted on at-risk college students using metacognitive strategies to improve achievement (Applegate et al., 1994). Student A was diagnosed with significant weaknesses in concept development which were contributing to his reading comprehension problems. Student A met once a week for a 2-hour session for 4 weeks. During these sessions he was taught the Surveying, Questioning, Reading, Recording, Reciting, and Reflecting (SQ4R) strategy (Robinson, 1946) and schema mapping strategies. The goal of these strategies was to improve the student's concept development in academic disciplines.

Student B in the study was an excellent student who had received a bad grade that had affected her confidence in her ability to be successful in rigorous college courses (Applegate et al., 1994). The researchers diagnosed her as a student who was not adjusting her studying techniques or monitoring her own comprehension based on the

demands of the text or course. This student also met for 4 weeks with a tutor who taught her the SQ4R (Robinson, 1946) strategy and the K-W-L strategy (What I Know, What I Want to Know, What I Learned) (Ogle, 1986). Additionally, she was asked to self-question what she wanted to know, predict what topic(s) the author would elucidate, and reflect on her own purposes for reading.

Both student A and student B demonstrated academic success using the strategies learned in the study (Applegate et al., 1994). Student A completed his second year in college with a 2.50 grade point average in a demanding liberal arts curriculum. The researchers analyzed comments made by student A and assessed metacognitive growth and the development of a self-monitoring system. Student B improved her grade in the course in which she was experiencing difficulty and continued using the strategies she learned in the study after the study had ended. The researchers concluded it is possible to teach metacognitive skills for an entire spectrum of processes.

Text Features

Another construct important to content area literacy strategy instruction involves activities that familiarize students with text features including reader aids, vocabulary, and text structure. The importance of textbooks in learning information is well documented in the literature (Ambruster et al., 1987; Grant, 1994; Lester & Cheek, 1998; McKeown et al., 1992; Salembier, 1999). Duffy et al. (1989) referred to the textbook as “the core of the curriculum in most schools” (p. 436). Most learning requires students to read and understand expository texts. Expository text is text that is informational; content areas such as social studies and science have textbooks that fall into this category.

Ambruster et al. (1987) state, “Although the empirical evidence is weak, experts contend that children generally have more difficulty reading expository than narrative text” (p. 332). Narrative texts tell stories such as those found in basal series or literature anthologies and are used in teaching students how to read. In the United States, most school districts teach their children to read using a basal series of some kind. Yet, basal series consist mainly of narrative text and simple stories of high interest to students. Few basal series contain expository passages like those the student will face in content textbooks (Noyce & Christie, 1989). Content textbooks are characterized by their heavy concept load, technical vocabulary, hierarchical patterns of main ideas and details, and unfamiliar content (Musthafa, 1996). Therefore, there is a great need to engage students in strategies to assist them in learning from expository text. However, students receive little instruction of how to transfer their narrative reading skills to skills required with expository text (Mandeville & van Allen, 1993).

Text structure refers to how the ideas in a text are interrelated to provide a message to the reader. Some ideas in a text are more important than others, and the structure of the text signals to readers the main ideas as well as subordinate ideas. Top-level structure refers to the overall organization of the principles in the text. There are five common expository text structures: description, collection, causation, problem-solution, comparison-contrast (Richgels, McGee, & Slaton, 1989). In description, ideas are grouped by association; in collection, ideas are grouped with an organization, order, or sequence. In causation, students look for causal connections between ideas. Problem-solution structure is similar to causation, but it is more structured, and a clear problem-

solution is evident. In the last text structure, comparison-contrast, similarities and differences between ideas are noted.

Although students who use text structures to assist them with comprehending text recall more important information over time, students are not often explicitly taught strategies that can assist them with organizing and understanding text structure, such as structured notetaking (Bartlett, 1979; McGee, 1982; Smith & Tompkins, 1988). If students are aware of text structure patterns, they can use this knowledge as they study and process key concepts from the text. Text structure strategies can improve students' understanding of the text. Two studies with ninth-grade students document the effectiveness of such strategies. In the first study, students were taught four text structures to assist them with comprehension. The students taught the text structures outperformed the control group on recall of information (Bartlett, 1979). In the second study, ninth-grade students' ability to use an author's text structure accurately predicted passage recall (Meyer et al., 1980).

There are numerous strategies teachers can employ to assist students in developing their awareness and understanding of various text structures. Students experience more difficulty with expository text than narrative text (Grant, 1994; Musthafa, 1996). Therefore, most of the strategies are designed for expository text. One reason for this is that narrative texts have a consistent structure--setting, initiating event, internal response, attempt, consequence, and reaction. Expository texts may have a variety of structures. Because students in secondary schools as well as in colleges must be able to learn by using expository texts, it is imperative they develop a repertoire of

strategies to assist them in this endeavor. Development of these strategies do not occur automatically for the majority of students; they need explicit strategy instruction.

In a study by Lester and Cheek (1998), 44 high school students in the 9th, 10th, and 11th grades were asked questions about their textbooks. Courses were grouped together to form six general categories of social studies, math, science, English, physical education, and electives. The students identified their English textbook as their favorite. Reasons cited included “good stories and poems” and “stories or biographies about the authors and pictures of them” (p. 284). The students’ least favorite textbook was math. Students’ comments about their math text included “it’s hard to understand,” “not specific enough,” and “poor arrangement” (p. 285). Social studies textbooks also received negative reviews. Students felt their social studies text was “confusing” and contained “too much information in one book” (p. 286). These findings are consistent with the premise that students experience more difficulty with expository than narrative text.

Thus, reading researchers advocate explicitly teaching expository text structure.

Readence et al. (1995) recommend the following three-step process.

1. **Modeling:** Before expecting students to use text structure, it is necessary to demonstrate what it is. This can be done by having teachers model their thought processes for students as they (the teachers) use text structure. During modeling, it is essential to show students a particular text structure and point out why a certain type is organized. Furthermore, it is necessary to point out any words that signal, or cue, the reader in to what the text structure is. It has been found that signal words such as however, because, and therefore assist students in becoming aware of text structure improving their recall (Meyer et al. 1980).
2. **Recognition:** This part of the teaching sequence amounts to walking students through a particular text structure. This can be accomplished by asking judicious questions that focus students’ attention on selected aspects of the structure.

Teachers may begin the recognition step on a listening level first. Or teachers may choose to begin with sentences or paragraphs before moving on to lengthier passages. The essential part of this step is that students verbalize the why and how of the text structure.

3. Production: Once students have gained some facility in perceiving text structure, they should now be ready to produce a text structure on their own. Just as recognition precedes production, a logical extension of perceiving text structure through reading is producing it through writing. Using a graphic organizer or some other form of skeletal outline based upon a text passage, students are directed to compose their own version of the passage. Students are required to write using a particular text structure and whatever signal words are appropriate to cue that structure. (p. 155)

Ambruster et al. (1987) conducted a study with 82 fifth-grade students to see whether direct instruction in recognizing and summarizing a conventional text structure (problem-solution) would improve their ability to learn from similarly structured social studies material. The students were divided into two groups, the training group and the traditional group. The findings of the study supported the following four hypotheses: (a) compared to the traditional training group, the structure training group recalled more information on an essay test over the main idea of problem-solution passage; (b) the structured training did not affect performance on the short-answer test; (c) compared to the traditional training group, the structure training group wrote summaries that included more passage main ideas; and (d) compared to the traditional training group, the structure training group wrote better organized summaries. These results support the practice of providing direct instruction on conventional text structure.

In addition to becoming proficient with text structure, it is important for students to possess strategies regarding the visual aids in a textbook. Visuals are frequently found

in expository textbooks; however, adolescents and young adults perform only moderately well with visuals (Kirsch, 1985). Vacca and Vacca (1993) contend that:

when students learn how to use and construct graphics representations, they are in control of a study strategy that allows them to identify what parts of a text are important, how ideas and concepts encountered in text are related, and where they can find specific information to support more important ideas. (p. 267)

Students tend to ignore illustrations and visuals in textbooks because they believe they can learn all the information from the text (Olson, 1977). Often teachers also ignore visuals in a textbook (Rakes, Rakes, & Smith, 1995). Strategies for analyzing visuals in a textbook include teacher-generated and student-generated strategies. Examples of teacher-generated strategies are providing written or oral directions immediately before using the illustrations, study questions over visuals, and student evaluation of graphics in content area materials. Student-generated strategies require the student to create visuals from information in the text. Examples include creating illustrations for embedded questions, using illustrations to summarize text, creating semantic maps, completing partial drawings or labeling drawings, creating flow charts, constructing maps, creating icons that symbolize main ideas in text, and creating charts and graphs.

Another research-based study reading strategy designed to be used with expository text is PLAN: Predict, Locate, Add, Note. The strategy uses the research on prior knowledge, metacognition, and text structure. The first step involves predicting the content and structure of the text and creating a probable map of the author's ideas using the chapter title, subtitles, highlighted words, graphics, etc. The second step requires the student to locate known and unknown information on a map by placing checkmarks by

familiar concepts and question marks by unfamiliar concepts. In the third step, the reader adds words or short phrases to confirm or extend information known about the concepts. The last step is an after-reading activity. The student takes note of his or her map and applies it to the task. College students have demonstrated success using this strategy (Caverly & Nicholson, 1993).

Summarization is a strategy that has been shown to be effective in helping students understand and retain information from text (Brown, Campione, & Day, 1981; Brown, Day, & Jones, 1983). To effectively use this strategy, students must use metacognitive thinking by making sure they understand the main points of the text, eliminate the information that is not critical to that understanding, and condense information in their own words. To do this, students must be able to discern and analyze text structure.

Brown and Day (1983), Kintsch and Van Dijk (1978), and Taylor (1982) each present a major approach to summarization strategies. Brown and Day's rules for summarizing include the following three steps.

1. Read the whole of a selection before you attempt to summarize it. Then, summarize first smaller and then larger units as noted below.
2. Summarize paragraphs by following these rules:
Delete trivial and redundant information.
Use superordinates, categories, and terms that are more general. For example, if the author mentions perch, trout, and salmon, you might write down fish.
Identify a topic sentence for the paragraph.
3. Summarize complete passages by first summarizing the individual paragraphs. Then, construct an overall summary of the complete passage. (pp. 1-14)

Kintsch and Van Dijk's (1978) five-step approach to summarization instructs the readers to eliminate unnecessary detail, collapse lists, use topic sentences, integrate information, and polish the summary. Taylor (1982) advocated a hierarchical summary procedure. This procedure includes three steps that demonstrate to students how to create a skeletal outline and then fill in the outline with pertinent information for a summary. Text structure knowledge is especially important with this strategy. The result from all summarization strategies is not only the metacognitive process that occurs in the development of the summary, but the product, the summary itself, that can be used as a study guide.

Frequently summarization is taught in conjunction with graphic organizers. The graphic organizer can provide a visual dimension while the summary provides the written dimension. Graphic organizers are pictorial representations of hierarchical relationships between facts and concepts (Barron, 1979). There are many kinds of graphic organizers, and they can access prior knowledge, involve metacognitive thinking, and make use of the research on text structure. In fact, in some cases, text structure is actually taught by using graphic organizers. McGee and Richgels (1985) developed a seven-step approach to teaching students about expository text structure using graphic organizers. Those seven steps are as follows.

1. Find a passage from the students' textbook that is well organized, represents one text structure, and has appropriate clue words.
2. Prepare a graphic organizer for the passage.
3. Introduce students to the idea of text structure.
4. Show the students the graphic organizer that has been constructed from their text.
5. Help the students use the graphic organizer to write a passage.

6. Have students read the passage from their text and compare it with the text they have written.
7. Help students move beyond short, single structure passages to longer passages with more than one structure. (pp. 745-746)

Graphic organizers can improve students' comprehension during and after reading; they have been found to be an effective instructional tool (Alvermann & Swafford, 1989). However, it is critical that a discussion about the content of the organizer occur for maximum benefit. As with other content literacy strategies, students need explicit instruction on the purpose, use, and benefit of the strategy as well as modeling by the teacher and time to practice using the strategy.

Teachers' Role in Content Literacy Strategy Instruction

Although content area literacy strategy instruction has been found beneficial to students (Anderson, 1978; Raphael & Pearson, 1985; Ogle, 1986; Hansen & Pearson, 1983; Afflerbach, 1990), teachers remain resistant to teaching these strategies (Fox, 1993; Hollingsworth & Teal, 1991). In fact, required university course work has yielded mixed results as to the transfer of strategies learned into classroom teachers' instructional repertoire (O'Brien & Stewart, 1990). Even providing teachers with opportunities to reflect on strategies for improving student understanding has not resulted in teachers changing their instruction (Alvermann & Hayes, 1989). Teachers often do not see the value of such strategies or view them as time consuming (O'Brien & Stewart, 1992; Vacca & Vacca, 1993).

O'Brien, Stewart, and Moje (1995) maintain that teaching content literacy strategies is a paradox; it can be viewed as radical pedagogy or nothing new. From the

radical point of view, content literacy instruction confronts deeply held beliefs, values, and practices of secondary teachers, therefore affecting school culture. However, when examining the overall curricular goals, content literacy is not new. Helping students learn from content textbooks, prepare for exams, and write essays is not new. However, when the notion of content literacy instruction invades the pedagogy of teaching content to include assisting students to socially construct knowledge through such strategies as cooperative learning, it takes on a radical hue.

O'Brien et al. (1995) purport that complexities such as curriculum, pedagogy, and school culture affect teachers' receptivity of content literacy instruction in schools. For example, curriculum is divided into subject areas, each with its own set of content goals and expectations. Reading and writing to learn strategies are viewed as belonging to other disciplines and are rejected by some teachers because they represent "competing" pedagogy and content. These content literacy strategies threaten to blur subject area divisions that serve as part of the deeply embedded organizational structure of schools.

Another reason cited for resistance of teachers toward the teaching of content literacy strategies is the long standing need of some teachers to "control and tell," thereby maintaining control of the amount of content covered and its delivery. A shift from viewing the teacher as the disseminator of all information to the facilitator of learning with texts has to occur before content literacy instruction will be accepted (Vacca & Vacca, 1993). In classrooms where the teacher is a facilitator of learning, students are expected to take a more active and independent role in their learning. Such suggestions

for a student-centered classroom are incongruent with the teacher-centered classroom, especially when tied to disciplines (Myers, 1992).

Ratekin, Simpson, Alvermann, and Dishner (1985) conducted a qualitative study examining eight classroom teachers' instructional practices in the classroom. Each participant had at least 8 years of teaching experience, and they represented math, science, social studies, and English or language arts content areas. As the researchers observed the teachers, they categorized their observations into three areas: organizational settings and instructional methods, inferred instructional purposes, and instructional resources. Results of the study indicate these teachers used the whole class organizational setting as opposed to small groups settings and relied a great deal on lecture and lecture-discussion. Sixty-nine percent of instructional time was devoted to presenting information, and less than 15% involved readiness activities such as prereading activities designed to tap prior knowledge. In addition, the teachers used a single textbook as the instructional resource the majority of the time, with only 20% of the time devoted to providing guidance for the text.

The researchers concluded that the teachers in the study did not follow recommendations of content literacy textbooks due to a variety of reasons (Ratekin et al., 1985). The teachers may have conducted strategies they felt fit the parameters of content area reading instruction and the constraints of their class. Second, perhaps they tried content literacy strategies, had not found them to be helpful to students, and abandoned their use. Last, when teachers use lecture as the primary vehicle for concept development,

and the textbook is used to validate information rather than as a learning tool, then content literacy strategy instruction may not be useful.

Although students probably are exposed to some kind of study skill or content literacy instruction during their 12 years of schooling, it is either not sophisticated or not systematic enough for the strategies to be internalized by the students (Durkin, 1978; Simpson, 1984). The content literacy strategy or study-learning strategy instruction needed must include a deep understanding of the research behind the pedagogy by the teachers, a desire for students to become independent learners, and a great deal of modeling and guiding activities.

Simpson (1984) offered three reasons why college students may lack the reading or study strategies necessary for learning after surveying 395 college freshmen. One of the reasons cited dealt with teachers. Simpson purported that students are not taught systematic independent learning strategies. This lack of direct instruction may account for high school as well as college students' poor skills in this area (Simpson, 1984; Tierney et al., 1982).

Can teachers learn to be more explicit and effective in training students to use reading strategies? Duffy et al. (1987) posed this question in their study of third-grade teachers working with low achieving reading groups. The study found that teachers could learn to become explicit and effective in training students to use reading strategies. The difference between the treatment teachers and treated-control teachers was six 2-hour training sessions that focused on three areas: (a) how to make decisions about recasting prescribed basal text skills as strategies; (b) how to decide on explicit statements about

the strategy being taught, when it would be used, and how to do the mental processing involved; and (c) how to organize these statements into a lesson format that progressed from an introduction, to modeling, to interaction between teacher and students, to closure. The students in the classes with the treatment teachers outperformed the students in the classes with the treated-control teachers. This finding supports the premise that training teachers on how to teach students about the mental processes associated with strategic reading provides benefits to students.

An additional dimension of teaching content literacy strategies and the skills associated with them to teachers is the fear factor. The Duffy et al. (1987) study involved third-grade teachers, and elementary teachers are much more comfortable teaching strategies associated with reading than secondary teachers are. Two quotes in an article by Bintz (1997) reveal the issue of teaching content literacy strategies from the teachers' perspectives.

My nightmare is that I am insecure because as an English teacher, somehow I am expected to know about reading, but at the college level I was only trained in English content. (high school English teacher, 1996, p. 12)

My nightmare is that many middle school students aren't reading at grade level, or if they are, won't read the class assignments anyway. Consequently, I find myself trying to avoid getting students involved in reading by assigning as little reading as possible. I teach around reading in order to make sure students understand science. (middle school science teacher, 1996, p. 12)

These two quotes validate the findings of other reading researchers which indicate teachers are not using content literacy strategies in content classes (O'Brien et al., 1995; Ratekin et al., 1985). Yet teachers report they spend less than 4 hours per year in staff development training to teach content literacy strategies (Humphrey, 1992).

Another obstacle regarding content literacy strategy instruction is that teachers often view this as someone else's job (Umans, 1963). They often believe that teaching reading is the elementary teachers' or English and language arts teachers' job; secondary teachers view themselves as teachers of content, not reading (Bintz, 1997). This is not a new problem. In 1965, Andersen (as cited in Burnett, 1966) stated, "High school teachers must face their responsibilities as teachers of reading as well as teachers of history, literature, science, and homemaking if they are to prepare students for the demands of further education" (p. 323).

Wilson (1995) conducted a study investigating attitude changes in students taking a content area reading course in a small liberal arts college. Previous studies indicated that although preservice teachers were taking these required courses at the college level, many were resistant to them, and the application of the strategies learned in such courses was minimal (Daisey & Shroyer, 1993; O'Brien & Stewart, 1990). The 27 students in Wilson's study were secondary education undergraduate students. The students were majoring in a wide variety of subject areas including English, art, music, physical education, social studies, science, math, and foreign language. The students were given Vaughan's Scale to Measure Attitudes Toward Teaching Reading in the Content Classroom (as cited in Wilson, 1995) on the first day of class and again on the last day of the class. The means of the two administrations of the scale were evaluated using a t-test. Vaughan's Scale purports to assess students' attitudes toward content area reading courses by examining items concerning the role of the teacher in helping students to improve reading and study skills, the use of content area reading methods, and

encouragement offered to students to get them to read. Students respond to items on a 7-point Likert Scale.

The results of Wilson's (1995) study indicate that the preservice teachers' attitude toward the content area reading course did change. The scores were higher after the course than before the course was taken. These findings are similar to a study by Lloyd (1987), except teachers in Lloyd's study still felt their primary responsibility was the content.

Bean (1997) conducted a study to examine preservice teachers' selection of specific vocabulary and comprehension teaching strategies for a microteaching session in a field-based practicum. Twenty-seven preservice teachers participated representing content areas of science, social studies, mathematics, English, art, and music. These students were required to take a content area reading course and a one-day-per-week practicum in a middle or high school in their content area. Each teacher developed and conducted a lesson with peers in the university class and again in their field practicum. Ten of the 27 students participated in follow-up interviews with the researchers to explore application of strategies taught in subsequent practicum assignments. In the follow-up interviews students responded to the following questions:

1. Tell me about your 5-day practicum or student teaching experience.
2. Are there any teaching strategies you use from your methods course?
3. If so, what aspects of the practicum support the use of these teaching strategies?
4. If not, what aspects of the practicum interfere with using these teaching strategies? (p. 155)

The results of Bean's (1997) study revealed 14 different content area reading strategies were used by the preservice teachers, with graphic organizers and anticipation guides being selected most often. In addition, 2 out of 10 preservice teachers continued to use the strategy they originally selected in their subsequent practicum experience, and 8 out of 10 used an additional or different strategy from the content area reading course in subsequent practicums.

Bean (1997) also noted that the most influential reason for the preservice teachers' strategy selection was the cooperating teacher. The cooperating teacher's view of content area reading strategies greatly impacted the preservice teacher's decision on how much to use the strategy beyond the regulated amount of time required by the study. The preservice teacher will, in many cases, emulate the cooperating teacher's style.

In another study, Dynak (1997) taught a content area reading course to preservice math teachers and then used written journal reflections from three of the participants to reflect on teacher preparation in this area. The participants in the course were high school math teachers who taught in a high school with approximately 1400 students. Dynak taught the teachers guidelines for summarization that included strategies for preparing to read, comprehending during reading, and processing after reading. One of her main findings was the importance of providing opportunities for the teachers to discuss how the strategies they were studying could be adapted and used in their high school classrooms. Consequently, she suggests that more time in preparing teachers to use content area reading strategies should be spent on helping them to see the practical use of the strategies.

In 1973 only nine states required preservice teachers to take a content area reading course before graduation. A short decade later, 35 states had such a requirement. In 1994, Romine, McKenna, and Robinson surveyed all 50 state departments and the District of Columbia by telephone. They found that six states had dropped the content area course requirement while nine new states had added the requirement. Those states that dropped the requirement had changed to a system of specified reading competencies that teachers must possess rather than courses they must take. Teacher training programs bear the responsibility of designing and ensuring that the teacher competencies are developed. When adding the nine new states to the 1983 list, 43 states plus the District of Columbia required either coursework in the area of content reading or competencies for practicing teachers. This left only seven states with no reading requirement in 1983 or 1994. Further investigation indicated that four of those seven states had a state-wide initiative with literacy requirements of some kind. This left three states -- Arkansas, Kansas, and New York -- with no reading coursework or competency requirement.

If content literacy instruction is important to students becoming independent learners with expository text, then teachers must have training to provide this instruction. It must become mandatory that all states provide the critical coursework or staff development training necessary to equip all teachers with the skills to provide such instruction in content classes.

Staff Development

Staff development has been recognized as important to teachers' growth and continuous improvement as well as improvement of student learning (DuFour & Sparks,

1991; Joyce & Showers, 1988). Specifically, school reform efforts have been found to be most effective when the local school is empowered to assess areas to be improved and develop the strategies and programs to make those improvements (Levine & Lezotte, 1990). Boyer (1983) stated the need for staff development most succinctly. “The only way we are going to get from where we are to where we want to be in schools is through staff development” (p. 9).

There is consensus among researchers regarding what constitutes effective staff development. DuFour and Sparks (1991) identified seven research-based effective staff development practices that create the climate and structure for successful teacher training.

Those seven practices include the following:

1. Effective programs are purposeful.
2. Effective programs are designed to promote and influence teachers’ thinking about teaching.
3. Effective programs are research-based, both in content and process.
4. Effective programs have realistic timeframes.
5. Effective staff development programs are evaluated at several different levels.
6. Effective programs generate teacher commitment to the training.
7. Effective staff development programs have strong administrative support. (pp. 56-70)

During the past 25 years, researchers have documented numerous studies of teaching, curriculum, school improvement, and technology that validate the need for staff development (Joyce & Showers, 1988). In fact, Joyce and Showers went so far as to say that “...failure to create a strong staff development system is a tragic dereliction” (p. 27). Clearly, well-designed staff development is critical to successful implementation of new strategies and innovations.

Staff development is an important component of this study. Therefore, a well-researched staff development model will be used to guide the teacher training sessions of the study. The model, referred to as the RPTIM model, was developed by Wood, Thompson, and Russell in 1981. The model emerges from a basic philosophy about effective staff development that stresses the importance of the school as the primary unit of change in school reform.

The model includes five stages: Readiness, Planning, Training, Implementation, and Maintenance. The critical attributes of each stage are listed below.

1. Stage 1: Readiness. The principal and central office staff work with the school faculty to establish a climate that supports school improvement. Staff members select improvement goals and develop their commitment to implement new professional behaviors and programs to achieve those goals.
2. Stage 2: Planning. Staff members design a system of inservice programs to achieve the improvements identified in the first stage.
3. Stage 3: Training. Staff members participate in effective inservice training that reflects what is known about adult learners.
4. Stage 4: Implementation. Teachers and administrators translate what they learned during the inservice training into professional practice in their actual work setting.
5. Stage 5: Maintenance. Teachers and administrators use systematic monitoring techniques to ensure that the changes they have made will continue over time (Wood, Killian, McQuarrie, & Thompson, 1993, p.vi).

An important dimension of the Readiness Stage is a supportive climate (Wood et al., 1993). Teachers and administrators need to develop a climate of trust – one where there is two-way communication and differences are not only recognized but respected. Adequate time and resources must be allotted in order for the staff development to be

successful. Teachers need to be involved in the planning of improvement goals, developing the vision for the staff development program, and team building. When these dimensions are in place, then the support and commitment from the staff that is vital to effective staff development will be in place.

Planning is the second stage of the RPTIM staff development model (Wood et al., 1993). In this stage, it is important that the staff members have input on what will occur during the actual training. This is accomplished frequently with some kind of needs assessment. The staff also must be a part of the long range planning in order for the staff development to have the systemic, long-term impact desired.

The Training Stage is where the actual inservice begins (Wood et al., 1993). Wood and Thompson (1980) identified key points critical to this stage. First, teachers must believe the goals of the training to be realistic and helpful to them in their day-to-day teaching. Teachers respond to training done in small groups, are respectful of the differences they bring to the training, and are cognizant of the control they desire in the process. After the training, ongoing support must be provided to ensure the transfer of learning.

The Implementation Stage also involves a great deal of support to ensure the transfer of learning to the classroom setting (Wood et al., 1993). That support may come in various forms. Trainer observation, meetings, and one-on-one coaching by a peer or others are all forms of follow-up support necessary to successful implementation of inservice training. Communication is the critical piece to this stage. Teachers need to be

able to communicate with someone who possesses the expertise to assist them through difficult and frustrating experiences as they implement a change.

The last stage, Maintenance, is often an overlooked component of a staff development program (Wood et al., 1993). The underlying premise of this stage is that if the implemented change does not receive sustained support and attention, then even successful change strategies will not endure. Changing back into old habits is a common occurrence. Feedback from students and parents can provide teachers with the information they need to motivate them to continue their change efforts.

All the stages require principal support. If school-based improvement and staff development are to succeed, the principal must be involved at all levels. He or she plays a key role that cannot be underestimated.

Summary

This review of literature found support for content literacy instruction. Teaching students strategies that will assist them in comprehending what they read has been advocated by reading researchers since the beginning of the 1900s (Bond, 1941; Fay, 1954; Gray, 1925; Herber, 1970; Huey, 1908-1968; McCallister, 1932; Smith, 1965; Thorndike, 1917). Studies have shown that such instruction improves comprehension (Dole, Valencia, et al., 1991; Duffy et al., 1987; Hayes & Tierney, 1982; Ogle, 1986; Readence et al., 1992; Stevens, 1980). The evidence supports the notion that certain mental processing acts occur when students engage in metacognition and activating prior knowledge. The strategies that facilitate these acts contribute to students' comprehension (Applegate et al., 1994; Baker & Brown, 1984; Franklin et al., 1992; Schifini, 1994). Yet,

secondary teachers remain resistant to teaching content literacy strategies in content classes (Fox, 1993; Hollingsworth & Teal, 1991; O'Brien et al., 1995; and Ratekin, et al., 1985).

This study provided quality training to teachers to ensure their understanding as to the importance of content literacy strategies and when and how to implement them. It also assessed the benefits of using content literacy strategies as well as the obstacles involved in implementing and using them systematically through the eyes of the teachers and students.

CHAPTER III

METHODOLOGY

The purpose of this study was to gain a deeper understanding of students' and teachers' thoughts and perceptions regarding the benefits and obstacles related to content literacy strategy usage in the secondary social studies and science classroom. Although there are numerous studies that support the notion that content literacy strategies increase students' comprehension and understanding of concepts taught in expository texts, explicit instruction and use of such strategies is fragmented at best and non-existent at worst. This study sought to identify factors that encourage or limit the use of implementing and sustaining systematic content literacy strategy instruction and use by teachers and students in public school classrooms. This section describes the methodology of the study.

Qualitative Research

The study was designed as a qualitative study that investigated the teachers' and students' perceptions of the benefits and obstacles of content literacy strategies by examining them through qualitative research features. Miles and Huberman (1994) identify features of qualitative research as follows:

1. Qualitative research is conducted through an intense and-or prolonged contact with a "field" or life situation.
2. The researcher's role is to gain a "holistic" overview of the context under study.

3. The researcher attempts to capture data on the perceptions of local actors “from the inside,” through a process of deep attentiveness, of empathetic understanding, and of suspending or “bracketing” preconceptions about the topics under discussion.
4. Reading through materials, the researcher may isolate certain themes and expressions that can be reviewed with informants.
5. A main task is to explicate the ways people in particular settings come to understand, account for, take action, and otherwise manage their day-to-day situations.
6. Most analysis is done with words. The words can be assembled, subclustered, broken into semiotic segments. They can be organized to permit the researcher to contrast, compare, analyze, and bestow patterns upon them. (pp. 6-7)

Out of qualitative research flows qualitative data comprised of words based on observation, interviews, or documents. Qualitative data provide rich descriptions and explanations of processes or events in local contexts that are not easily identified by quantitative research methods.

A conceptual framework of the study was developed that includes the benefits and obstacles noted in the literature review (see Appendix B). Benefits of content literacy strategy instruction included student strategic reading development in using metacognitive reading skills, accessing prior knowledge, and understanding the importance of text structure to comprehension (Applegate et al., 1994; Baker & Brown, 1984; Bartlett, 1979; Meyer et al., 1980; Ryder & Graves, 1998; Tierney & Cunningham, 1984). Obstacles of content literacy strategy instruction included teachers’ resistance (Fox, 1993; Hollingsworth & Teal, 1991). This resistance is due to multiple factors including teachers viewing content literacy strategies as time consuming, someone else’s responsibility, and

not valued in the school culture (O'Brien et al., 1995; O'Brien & Stewart, 1992; Vacca & Vacca, 1993). Some teachers believe that content literacy strategies are not helpful to their students (Ratekin et al., 1985). A lack of explicit content literacy strategy instruction is an obstacle given for students' weak skills in this area (Mandeville & van Allen, 1993; Simpson, 1984).

The conceptual framework served as a guide as researchers searched for validation or repudiation of the current findings in the field of the content literacy strategy instruction. The constant monitoring of the obstacles and benefits of content literacy strategy instruction by students and teachers throughout the study built a case for teachers to either continue or discontinue the use of such strategies from the participants' point of view. The information on the conceptual framework assisted the researcher in understanding what is necessary for systematic content literacy strategy instruction to continue and become a part of a teacher's instructional repertoire or what variables result in the discontinuance from the students' and teachers' perspectives.

There were two researchers involved in collecting data. The primary researcher, the principal of the school, participated in all aspects of the study except the structured teacher interviews per the approval of the study by the University of North Texas' Institutional Review Board. The various components included participating in teacher training, administering Student and Teacher Pre and Post Study Surveys, observing in classrooms, attending teacher support meetings, and conducting student and teacher structured interviews. The secondary researcher, Dr. Alexandra Leavell, an associate professor of reading at the University of North Texas, conducted the teacher training

component, attended teacher support meetings, and conducted the teacher structured interviews. Dr. Carol Wickstrom, served as a second coder of the data sources.

The researcher and the second coder validated all findings from the multiple data sources. Findings that required percentages were compared and consensus was reached after discussion. A high percentage of inter-rater reliability was found where this was necessary. For example, the coders started with an 87% agreement in determining strategy strength of students on the Pre Study Student Survey prior to achieving 100% consensus. Eighty-two percent agreement was found regarding the strategy strength of teachers on the Pre Study Teacher Survey. Eighty-eight percent agreement was found regarding students' understanding of when and why to use the strategies on the Post Study Student Survey. Eighty-seven percent agreement was found regarding teachers' procedural and conditional knowledge on the Post Study Teacher Survey. Each survey was compared after the coders had coded them to reach 100% consensus. Other findings regarding benefits, obstacles, reasons to continue-discontinue use of strategies, and support needed to sustain using content literacy strategies were agreed upon by the researcher and the second coder of the data.

Description of Site

The study was conducted in a suburban comprehensive high school located in the Dallas-Fort Worth Metroplex. The high school opened in 1998 and is one of three high schools in the school district. In its first year of operation, the school served 9th and 10th grade students only, and in the current school year, the school served three grades – 9th, 10th, 11th – with a total population of 1767 students. The demographic makeup of the

school included a student body that was 58.80% white, 18.22% Asian, 16.93% Hispanic, 5.66% African American, and .39% American Indian, with 15% of the students on free and-or reduced lunch. This site was chosen because it was representative of a typical suburban high school in this area, and the researcher was the principal of the school. Thus it was highly accessible.

Participants

Participants in the study included both students and teachers in selected courses. The courses selected for the study were regular 9th and 10th grade social studies and science courses. Science and social studies courses were chosen because the text-based nature of instruction in these disciplines makes content literacy strategy use particularly helpful in assisting students in constructing meaning. Specific courses included United States history, world geography, world history, introduction to physics and chemistry, and biology.

Teacher participants (n=16) included 7 social studies teachers and 9 science teachers (n=10 males; n=6 females), with experience ranging from 1 year to 25 years. Ten teachers, referred to as level 1 teachers, completed the pre and post study surveys, attended teacher support meetings, and participated in the teacher training component of the study. Additionally, six teachers, referred to as level 2 teachers selected from the original 16 teachers, participated in the activities of the level 1 teachers plus participated in an observation by a researcher and a structured interview. These six teachers were selected according to gender (n=3 males; n=3 females), discipline (3 social studies and 3 science), and years of experience (beginning to experienced). Level 1 teachers

represented all the social studies and science teachers who teach regular classes at the 9th and 10th grade levels at the school. The teachers volunteered to participate in the study after the purpose and activities involved in the study were explained. Two social studies teachers declined to participate in the study; therefore, one additional social studies teacher was included who taught regular 11th grade students. This teacher had 10 years of teaching experience and served as the teacher representing the “middle” level of experience of the three social studies teachers who served as level 2 teachers in the study. All participants remained anonymous, and confidentiality was maintained through pseudonyms.

Student participants were drawn from students enrolled in the United States history, world geography, world history, introduction to physics and chemistry, and biology classes. The students were enrolled in a social studies or science section selected by one of the six level 2 teachers. The students who participated in the study volunteered after the researcher explained the study to the students. All students in the six identified classes were included in the study as level 1 students (students who completed the anonymous Pre and Post Study Student Surveys). Additionally, 12 students, two from each of the six identified classes, (one successful and one unsuccessful with the strategies) were selected by their teacher to participate in all level 1 student activities plus a structured interview. These students were referred to as level 2 students.

Teachers participated in two half-days of training in content literacy strategy instruction conducted by Dr. Alexandra Leavell, an associate professor of reading from the University of North Texas. Training emphasized the importance of topical and

strategic prior knowledge, nine essential thinking processes displayed by effective readers, and the use of content versus process metacognition in reading expository texts. The training began with teachers completing an anticipation guide about content literacy strategies and why teachers do not use them systematically in content courses. An anticipation guide is designed to activate learners' prior knowledge about a topic before learning and provide a purpose for learning (Readence, Bean, & Baldwin, 1989). The teachers then read an article about content literacy strategies and the research, and revisited the anticipation guide to reconsider their initial opinions.

Next, teachers experienced what a non-strategic reader goes through when reading difficult expository text by simulating the experience by reading a passage of difficult and unfamiliar text. The passage covered research design and statistics, topics about which students will have low prior knowledge. The importance of prior knowledge and metacognition was discussed after the activity. The teachers read and discussed the handout on the model of cognition that focuses on the mental processes of an effective reader. This assisted teachers in understanding what a good reader should be doing to construct meaning, provided a foundation for discussion of students' potential deficits in terms of cognitive processing, and provided terminology with which to discuss the strategies. The handout was read using a jigsaw cooperative learning activity. Handouts and research on metacognition, prior knowledge, and text structure were provided to the teachers. Strategies modeled and used in the training included anticipation guide, What I Know, What I Want to Know, and What I Learned (K-W-L), summarization, and graphic organizers.

Collection of Data

Multiple tools were used to gather information from teacher and student participants. Pre and post study surveys, field notes from classroom observations, transcripts from teacher support meetings, and structured interviews were read and reread to allow patterns, categories, and themes to emerge from the data. Data was collected prior to the study beginning, during the study, and at the end of the study.

Pre and Post Study Surveys

Teachers and students were assessed on their current understanding and use of content literacy strategies through a pre study survey. The survey was administered approximately one week prior to the teacher training and approximately two weeks prior to implementing the strategies into the classroom. The teacher survey was administered to teachers individually. Although teacher surveys were anonymous, a counselor at the school numbered each survey and was responsible for distributing and collecting Pre and Post Study Teacher Surveys. He kept these assigned numbers confidential, and only he knew who was assigned what number. This procedure allowed the researcher to assess change or lack of change on the part of teacher participants. The student survey was completed individually but in a group setting at the school (see Appendix C and Appendix D).

All participants completed a post study survey assessing their perceptions of the benefits and obstacles of content literacy instruction as well as reasons they would or would not use the strategies in the future. These surveys were conducted 6 weeks after implementation of the strategies in the social studies and science classrooms.

The pre and post study surveys flowed from the review of the literature. The pre study survey was administered prior to any discussion or teacher training. After the pre study survey was administered, teachers participated in two half-day sessions preparing them to implement the strategies. At the end of 6 weeks, the post study survey was administered. The instruments were assessed for content validity by three experts in the field. The Pre Study Student Survey was piloted with five students prior to the study. Two students reviewed the Post Study Student Survey prior to administering the surveys.

Classroom Observations

The researcher observed the teachers implementing the strategies in the classroom. Teacher behaviors that assisted students in understanding why, when, and how to use the strategy being taught were noted. Student behaviors that provided evidence of student understanding or lack of understanding of the strategy being taught was documented. Field notes were taken during the observations and information was transferred to a contact summary form (see Appendix E). Member checks occurred with all observation field notes where the teacher observed was asked by the researcher to validate the field notes from the observation.

Support Meetings

Two support meetings were provided to teachers throughout the study. During the meetings researchers (Dr. Leavell and the principal) answered clarifying questions from teachers, listened and addressed frustrations or successes they experienced, and assessed support they needed to continue. The meetings were audio-recorded and transcribed; information was then transferred to a contact summary form (see Appendix E).

Structured Interviews

After a preliminary analysis of the above data sources, collected before, during, and after the study, a structured interview with six teachers and twelve students was conducted following Patton's (1982) guidelines. The guidelines provided a framework within which the interviewer developed questions, sequenced those questions, and made decisions about which information to pursue in greater depth. A structured interview instrument was developed from the review of the literature to serve as a guide for questioning (see Appendix F). Additional questions were asked to address issues or questions that emerged through the ongoing data analysis during the study. The interviews were audio-recorded and transcribed.

Data Analysis

Data analysis was conducted through words as the main data sources – words from the pre and post study surveys, words from the field notes from the classroom observations and two teacher support meetings, and words from the structured interviews. These words were processed according to the conceptual framework in order to answer the research questions. To accomplish this, field notes from the aforementioned data sources were converted into “write-ups.” “A write-up is an intelligible product for anyone, not just for the field-worker. It can be read, edited for accuracy, commented on, coded and analyzed” (Miles & Huberman, 1994, p. 51). The write-ups were analyzed using a content summary, which was a list of summarizing questions from the content field of study (see Appendix E).

Data triangulation as described by Denzin (1978) occurred between two data sources for level 1 teachers (pre and post study surveys), five data sources for level 2 teachers (pre and post study surveys, observation and meeting field notes, and structured interviews), two data sources for level 1 students (pre and post study surveys), and three data sources for level 2 students (pre and post study surveys, and a structured interview). Data triangulation is a process where different data sources are compared so researchers can discover what concepts the data sources have in common. Through these methods, theories or assumptions were drawn that provided the researchers with clues as to what teachers' and students' perceptions were about content literacy strategies in a personal manner.

In analyzing all data sources, comments and behaviors were coded for their evidence to support either an obstacle or a benefit of content literacy strategy instruction, support or behaviors needed for students and teachers to continue using the strategies. “ ‘Codes’ are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles & Huberman, 1994, p. 56). Coding was ongoing throughout the study. These codes were revised as events emerged during the study that necessitated rethinking the codes. Additionally, codes were changed later in the study as Lincoln and Guba (1985) recommended:

1. “filling in”: adding codes, reconstructing a coherent scheme as new insights emerge and new ways of looking at the data set emerge
2. “extension”: returning to materials coded earlier and interrogating them in a new way, with a new theme, construct, or relationship
3. “bridging”: seeing new or previously not understood relationships within

units of a given category

4. “surfacing”: identifying new categories (p. 62)

The methods used to analyze data throughout the study were noting patterns and themes, counting, and compare-contrast. Miles and Huberman (1994) describe noting patterns and themes in the following way, “When you’re working with text, you often note recurring patterns, themes, or “gestalts,” which pull together many separate pieces of data. Something “jumps out” at you, suddenly makes sense” (p. 246). The same authors deal with the idea of “counting” in qualitative research by writing, “When we identify a theme or a pattern, we’re isolating something that (a) happens a number of times and (b) consistently happens in a specific way. The “number of times” and “consistency” judgments are based on counting” (p. 253). The last method used to analyze data was compare-contrast. Again, Miles and Huberman served as the guide for using this method and described it in the following manner, “We draw a contrast or make a comparison between two set of things—persons, roles, activities, cases as a whole—that are known to differ in some other important respect” (p. 254).

Pre Study Surveys

Students.

The first two questions on the Pre Study Student Survey asked, “What techniques do you use to learn?” and “What do you do when you have trouble understanding the textbook?” These questions were analyzed by noting patterns on the survey, and the codes listed in Table 1 and Table 2 (p. 63) were applied to student responses. The questions

were asked to determine current student knowledge and understanding of learning strategies.

Questions three and four on the Pre Study Student Survey asked, “What subjects are easy for you – subjects that you need little help from the teachers or others?” and “What subjects could you use some help with?” The questions were analyzed by counting the most frequently marked response. These two questions were asked to determine what subjects students perceived as easy or difficult for them. These questions also assisted the researcher in determining which subjects students might be more receptive to learning the content literacy strategies because they perceived those subjects as being difficult.

Question five on the Pre Study Student Survey asked, “If you read a chapter in your science (question 5A) or social studies (question 5B) textbook, how confident are you in answering questions correctly about the chapter?” Question five was analyzed by comparing and contrasting the confidence level of the students when using their science and social studies textbooks. The students ranked their confidence level on a Likert Scale of 1 to 5, with 5 being very confident and 1 being not confident. These questions were asked to determine if students were confident reading from expository textbooks.

Table 1

Strategy Coding for Pre Study Student Survey

Strategy Strong (SS)	Strategy Average (SA)	Strategy Weak (SW)
at least three recognized	at least two recognized	no recognized learning

learning strategies or techniques noted that imply learner independence	learning strategies noted	strategy noted
strategies may involve metacognitive thinking, using prior knowledge, or awareness of text structure		weak strategy noted (closing eyes, listening to music)
		strategy listed requires assistance from others noting a lack of independence on students' part

Table 2

Coding for Nature of Strategies

Nature Specific- Formal (NSF)	Nature Personal- Informal (NPI)	Nature Ask Teacher (NAT)	Nature Ask Peer (NAP)
specific or formal content literacy strategy listed	personal or informal content literacy strategy listed	specifically wrote to ask a teacher	specifically wrote to ask a peer or other

Question six asked, “Do you remember any teacher ever teaching you techniques to help you learn better? If yes, what technique?” Question six was analyzed by counting student responses regarding prior instruction on strategy instruction. This question was asked to determine if students had received prior instruction on content literacy strategies and if that instruction had resulted in students successfully recalling specific strategies.

Teachers.

Similar methods were used to analyze the Pre Study Teacher Survey that were used to analyze the Pre Study Student Survey, including noting patterns and counting. Questions one, two, and three asked, “What content literacy strategies can you name or describe?” “Which content literacy strategies do you currently use in your teaching? After each one, briefly explain what you understand to be the purpose of the strategy.” and “In what ways do you assist students who appear not to be comprehending text or written materials?” These questions assessed teachers’ current use and knowledge of strategy instruction. The codes listed in Table 3 were used in analyzing the teachers’ responses to the first three questions.

Table 3

Strategy Coding for Pre Study Teacher Survey

Strategy Strong (SS)	Strategy Average (SA)	Strategy Weak (SW)
at least three recognized CLS listed	at least two recognized CLS listed	one or no recognized CLS listed
two CLS currently used, accurately described	one CLS currently used, accurately described	one or no CLS currently used, accurately described
two CLS used when students do not understand	one CLS currently used when students do not understand	no recognized CLS used when students do not understand

Question four asked, “What is your perception of the areas students struggle with the most in understanding your content information?” The question assessed teachers’ perception of areas in which students needed help in understanding the content. Counting the responses and noting responses given repeatedly allowed patterns to emerge. This

information allowed the researcher to ask a follow-up question on the Post Study Teacher Survey about the impact or lack of impact the strategies had on this area during the study.

Question five asked, “What percentage of your students would you consider to be strategic, independent learners (i.e., can process most or all text information with little or no assistance from you)?” This question was included on the survey to assess teachers’ perception of how many of their current students they considered to be strategic, independent learners. The percentages were grouped into seven categories. For example, six teachers reported 10%, two reported 15%, etc. The categories were: 10%, 15%, 20%, 25%, 40-50%, 65-75%, and 80%.

Teacher Support Meetings

The teacher support meetings were audio-taped and transcribed. A contact summary form was used to assist the researcher in assessing the main themes, issues, and questions that emerged from the meetings. A contact summary form is a single sheet that focuses on summarizing questions and assists the researcher in reducing the raw data. The summarizing questions were determined after reading and re-reading the transcribed notes from the teacher meetings. Then the transcriptions of the meetings were analyzed by the researcher re-reading and highlighting the statements made by teachers that addressed the questions on the contact summary form. Next, statements were transferred to the contact summary form under each question that the statement addressed.

There were two dates selected for teacher support meetings – one the third week of the study and one the fifth week of the study. Two meetings were held on each day – a meeting before school and a meeting after school. This allowed each meeting to have

approximately eight teachers in attendance, which resulted in a great deal of participation by each individual teacher in the discussion.

The first set of teacher support meetings were unstructured with teachers discussing any issue, question, or concern that came to mind regarding the implementation of content literacy strategies. The researchers made some clarification about teacher remarks and questions to initiate the dialogue; however, the discussion was mainly teacher led. During the last set of teacher support meetings, teachers were given four questions to address in a round robin format. This was done in response to areas of concern from the first set of teacher support meetings in addition to a lack of participation by some of the teachers and to prevent a few teachers from dominating. These questions provided focus to the meetings. The researcher wrote the four questions and gave every teacher a copy when the meeting began. The four questions are listed below.

1. What are the positive experiences or benefits you have experienced with any of the content literacy strategies in the past couple of weeks?
2. What are the problem areas the students have encountered? What are the problem areas you have encountered as the teacher facilitating the process?
3. What impact does your role as a teacher play on students developing these skills?
4. What instructional support do you feel teachers need to “stay the course” and successfully implement content literacy strategies?

Memoing was done after the transcribed notes of the meetings had been analyzed. Glaser (1978) defines memoing as “the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding....it can be a sentence, a paragraph or

a few pages....it exhausts the analyst's momentary ideation based on data with perhaps a little conceptual in elaboration" (pp.83-84). These memos assisted the researcher in capturing the reflection of the meetings and were a vehicle to make sure nothing was forgotten when it was time to write the findings of the study.

Classroom Observations

Teachers were observed implementing the summarization strategy. During the observation, notes were taken by the researcher capturing direct quotes and anecdotes. Immediately after the observation the notes were typed and reflective questions and observations the researcher wanted to ask or share with the teacher were written. A member check conference was held where the teacher read the notes to verify that the researcher had accurately captured what occurred in the classroom. Dialogue about the strategy took place in the conference with reflections and suggestions for future work with the strategy from both the researcher and the teacher.

The notes were then analyzed and pertinent data was transferred to a contact summary form (see Appendix E) addressing the following questions. What did the teacher do or say to assist students in understanding why, when, and how to use the strategy? What did the student do or say to indicate the level of understanding about using the strategies? What teacher and student behaviors or statements communicated their attitude (positive or negative) toward the strategy? What was the effectiveness of implementation (modeling explanation of strategy steps, purpose of strategy, appropriateness of materials, guided practice, time spent)?

Post Study Surveys

Students.

There were seven questions on the Post Study Student Survey. The questions were designed to determine knowledge and understanding gained by the students during the study. Additionally, their opinions were sought about the strategies. One question asked, “Explain when and why you might use these strategies: K-W-L, graphic organizers, summarizing.” Students were given “credit” for each answer that accurately described when they would use the strategy and-or why they would use the strategy. This information was kept separately for each class, and percentages for the number of correct responses are reported in Chapter IV.

Question two on the post study survey asked, “Did any of these strategies help you understand science or social studies better? If yes, which ones?” Yes-no responses and other responses were tabulated as well as the number of times specific strategies were mentioned by the students. This information was kept separately for each class. A total for all students was also tallied.

Question three asked, “Has your knowledge and use of these strategies made you more confident in your classes? Explain.” Again, yes-no responses and other responses were noted. This information was kept for each class separately and a total for all students was tallied. Insightful responses as well as responses repeated to indicate a pattern were noted.

Questions four and five asked, “What was difficult about learning and using the strategies?” and “What has the teacher said or done to help you the most in learning these strategies?” These questions were asked to ascertain obstacles involved in learning the

strategies from the students' perspective. Additionally, any teacher behavior that made learning the strategies easier from the students' perspective was sought. Insightful responses and patterns were noted.

Question six asked, "Are you using the strategies in other classes? If yes, which classes?" Yes-no responses were tabulated as well as other responses such as "maybe" or "somewhat." The specific classes the students mentioned were recorded with the frequency they were mentioned. This question assessed whether students found enough value in the strategies to use them in other classes and if they understood how the strategies could help them repeatedly regardless of the content. Again, insightful responses about why the students used the strategies in other classes were noted.

Question seven on the Post Study Student Survey asked, "Which strategies will you continue to use this year and in future years? Why?" The number of students who responded that they would use a strategy in the future was recorded, and the frequency of each strategy mentioned was tallied. Patterns as to why the students were going to use the specific strategy mentioned in the future were noted. Responses to this question verified whether the students did or did not value the strategies enough to use them again.

Teachers.

Question one on the Post Study Teacher Survey asked, "When and why would you use the following content literacy strategies with students? K-W-L, graphic organizers, anticipation guide, summarization." This question was asked to determine if the training and work with the strategies had affected their knowledge level about the strategies. Teachers were awarded one point for each correct or appropriate answer for

when they would use the strategy and-or why they would use the strategy for all four strategies. A maximum of eight points could be earned. Teachers earning 6, 7, or 8 points were considered strategy strong, 4 or 5 points strategy average, and 0, 1, 2, or 3 points strategy weak.

Question two asked the following, “Did the strategies increase student learning and-or understanding of concepts-information? Explain.” Question three asked, “Will the knowledge and use of these strategies change the way you teach?” Question five asked, “Was the effort you put into integrating the strategies into your teaching worth the effects of the strategies on students’ learning? Why or why not?” All three of the questions were tabulated by recording the number of yes-no or other responses and noting insightful answers and patterns. These questions sought to determine the impact the strategies had on teachers’ perceptions and behavior.

Question six on the Post Study Teacher Survey asked, “Which of the strategies will you continue to use after the study has ended? Why?” The answer to the question was tabulated by noting the number of times teachers responded with a specific strategy. The question was asked to determine what strategies they found valuable and why.

Question seven on the Post Study Teacher Survey was a follow-up question to a question asked on the Pre Study Teacher Survey. The question asked, “In your pre study survey you stated . . . (individual teacher response) . . . was an area with which your students seem to struggle in particular. Do you feel the strategies you learned were effective in enhancing students’ abilities in that area?” Yes-no responses were noted as well as the description teachers wrote regarding the progress or lack of progress students

made in the identified difficult area. This question assisted the researcher in determining the impact the strategies had on actual areas of need as perceived by the teachers.

Question four asked, “What challenges or obstacles did you face implementing the strategies in your classes?” Question eight asked “How effective was the training in preparing you to teach these strategies? What would have prepared you better? . . . longer initial training . . . more follow-up . . . more strategies . . . different strategies . . . other-please explain. Question nine asked, “List support that will help you improve and sustain the use of content literacy strategies in the classroom.” Patterns of responses were noted for questions four, eight, and nine. These questions were designed to elicit ideas on the obstacles involved in content literacy strategy implementation and how to improve preparation and support of such initiatives.

Student and Teacher Structured Interviews

The transcriptions of the student and teacher structured interviews were coded according to the evidence they presented in answering the four research questions. Pink was used to note benefits of content literacy strategies, and orange was used to note obstacles of content literacy strategies. Green was used to note the reasons students and teachers would or would not continue using the strategies, and purple was used to note the support needed to implement and sustain content literacy strategy instruction. After this was completed, themes and patterns emerged from the coding.

Analysis of Participants from Pre Study Survey Data

The Pre Study Student Survey and the Pre Study Teacher Survey provided a snapshot of the students’ and teachers’ current knowledge level and perceptions regarding

content literacy strategy instruction. There were 88 student participants from six classes, three science classes and three social studies classes. There were fifty-one 9th graders, twenty 10th graders, and sixteen 11th graders. There were 16 teachers in the study, seven social studies teachers and nine science teachers.

Students.

The first two questions on the Pre Study Student Survey assessed students' current use and understanding of learning strategies overall – what they do to help themselves learn new material or understand information when they encounter difficult text. This information was important to give a preliminary picture of the students as strategic learners. The criteria for analyzing students' current knowledge and understanding of learning strategies are listed in Table 1. For students to be considered “strategy strong,” they had to list three formal learning or study strategies. “Strategy average” students had to list two strategies for formal learning or study strategies. Students who listed no strategies or an informal strategy, such as “make fun,” were considered “strategy weak.” Five percent of the students were considered to be strategy strong, 26% were recognized as strategy average, and 69% were considered strategy weak according to the criteria listed in Table 1 (see p. 63).

The strategies listed were further analyzed to determine the nature of the strategy according to the criteria noted in Table 2 (see p. 63). Specific formal strategies, such as note taking, highlighting, and personal informal strategies, such as dimming the room and creating rhyming words, were counted. Twenty-nine percent of the students listed formal strategies, while 19% listed personal informal strategies, with 26% listing both formal

and informal strategies on the survey. Rereading was the formal strategy mentioned most frequently with 24 responses, followed by note taking with nine responses. All other specific formal strategies were listed three or fewer times. The word “visuals,” noted 11 times, was the most frequent personal informal strategy listed, with reading out loud written six times. Although using visuals in textbooks to assist the student in understanding a concept is a recognized learning strategy, no elaboration on the part of the students was given, making it difficult to assess what the word “visuals” meant to them. Olson (1977) and Kirsch (1985) found that adolescents and young adults tend to ignore illustrations and visuals in textbooks. All other personal informal strategies were listed three or fewer times. Interestingly, 73% of the students listed “asking another person” when they encountered difficult text. Forty percent of the students responded that they would ask a teacher for help, and 33% commented that they would ask a peer or other (parent, friend) for help. This information indicates that many students are not independent learners, i.e., do not possess strategies to assist them when they encounter difficulty. Instead they rely on others for assistance when they need help.

Question three asked students to list subjects that were easy for them and subjects that were hard for them. Social studies was listed most frequently as an easy subject, and math was listed the most frequently as a hard subject. Lester and Cheek (1998) surveyed high school students about their textbooks and found that math textbooks were noted as the students’ least favorite. The math text may or may not be a contributing factor in the students listing math as their most difficult course.

Students were asked to rate their confidence level in answering questions from a chapter using a science and social studies textbook. To assess this, a Likert Scale was used with 1 being not confident and 5 being very confident. Overall, students felt more confident with their science textbook than social studies textbook as evidenced with a mean score of 3.7 for science and 3.3 for social studies. Their assessment was validated by the opinions expressed by their social studies teachers in the training, who stated the social studies textbook switched text structure often and was not easily understood. Lester and Cheek (1998) similarly found that students felt their social studies text was “confusing” and contained “too much information in one book” (p. 286). The literature also supports the notion that less coherent textbooks interfere with student comprehension.

The last question on the Pre Study Student Survey asked students if they remembered any teacher ever teaching them techniques to help them learn better. They were also asked to list the technique. The purpose of this question was to determine if students had received prior instruction on content literacy strategies and if that instruction had successfully resulted in the students using or recalling the specific strategy. Sixty-one percent of the students responded that a teacher had taught them learning strategies, and 39% responded that no teacher had ever taught them a learning strategy. Strategies listed by the students who responded with a yes to this question were specific formal strategies such as summarizing, note taking, and outlining. Durkin (1978) and Simpson (1984) purport that although students probably are exposed to some kind of study skill or content literacy instruction during their 12 years of schooling, it is either not sophisticated or

systematic enough for the strategies to be internalized by the students. It is interesting to note that although 61% believe they have had strategy instruction at some point in their school career, only 5% met the criteria for a strategy strong student and 69% of them were assessed as strategy weak. This finding would support the proposition of Durkin and Simpson. It appears that although they recall prior instruction and can recall the name of specific strategies, they do not list them as strategies they use to help them learn.

Teachers.

The first three questions on the Pre Study Teacher Survey assessed teachers' current knowledge and understanding of content literacy strategy instruction. Table 3 (see p. 63) lists the criteria for this assessment. The number and percent of teachers who were coded into each category were as follows: 7 teachers were coded strategy strong representing 44% of the teachers, 4 teachers were coded strategy average representing 25% of the teachers, and 5 teachers were coded as strategy weak representing 31% of the teachers.

The teachers in the study ranged in teaching experience from year 1 to year 25. However, their knowledge of content literacy strategy instruction did not appear to be associated with their experience. There were experienced and inexperienced teachers who met the criteria for strategy strong and strategy weak.

Teachers were asked to assess what percentage of their students they would consider to be strategic, independent learners. Eighty-one percent of the teachers assessed 50% or fewer of their students to be strategic, independent learners. This assessment

supported Simpson's (1984) finding that college students may lack the reading or study strategies necessary for learning.

Teachers also identified areas in which students struggled the most in the teacher's content subject. The number one area listed was vocabulary and terminology, with eight teachers listing that area. Of those eight teachers, seven were science teachers. Since science has a great deal of new vocabulary for students to learn, this is an area that science teachers realize they must address. Distant second and third areas where students struggled were comprehension and lack of big picture, with three teachers listing these areas of concern. Table 4 summarizes information from this pre study survey question.

Table 4

Teachers' Perceptions of Difficult Areas for Students

Areas teachers identified as difficult for students	Number of times each area was mentioned
Vocabulary	6
Comprehension	3
Lack of big picture	3
Terminology	2
Application	2
Math concepts	1
Higher level thinking	1
Linking science to math	1
Interpreting texts	1
Graphs-pictures	1

Processes	1
Text	1
Identifying main concepts	1
Finding evidence to support concepts	1
Don't care	1
Cause-effect relationships	1
Point of view	1

Summary

Understanding about the obstacles and benefits of content literacy strategies must be gleaned from data collected from the teachers and students who actually use the strategies in classrooms. The well-documented benefits of content literacy strategies regarding increased comprehension of expository text for students demands that educators and researchers continue to examine the obstacles involved in systematic content literacy strategy instruction in schools. This qualitative study provided insight into some of the reasons teachers continue to be resistant regarding content literacy instruction. It also provided a look at what teachers and students find beneficial about the strategies and the support needed to sustain effective use of such strategies in the secondary social studies and science classrooms. This knowledge will be useful in increasing systematic content literacy strategy instruction in public schools.

CHAPTER IV

PRESENTATION OF FINDINGS

General Observations

The purpose of this study was to investigate teachers' and students' perceptions of benefits and obstacles of content literacy strategy instruction. The primary goal was to increase understanding regarding the complexities involved in implementing and sustaining systematic content literacy strategy instruction in high school science and social studies classrooms. Qualitative data analysis of multiple data sources allowed patterns, categories, and themes to emerge from the data. The eight data sources were aligned with the research questions, and multiple data sources addressed each research question. The data sources were: Pre Study Student Survey, Pre Study Teacher Survey, teacher support meetings, classroom observations, Post Study Student Survey, Post Study Teacher Survey, student structured interviews, and teacher structured interviews. This chapter presents the findings based on each research question.

Specific Observations

Research Question #1a

What benefits do teachers perceive regarding the use of content literacy strategies?

Benefits – Teachers.

Teachers viewed the greatest benefits of content literacy strategies to be assisting students' learning and understanding of content, increasing their own expertise and

repertoire of instructional strategies, increasing student engagement, and equipping students with strategies the students could use in the future. A question on the Post Study Teacher Survey asked the teachers if the strategies increased students' learning and understanding of concepts and information. One hundred percent of the teachers responded "yes" to this question, indicating it was clearly a strong benefit of the content literacy strategy instruction. Sample responses included the following:

Yes. I think different strategies work for different students. Using a combination of these strategies increased their learning on the topics.

Yes, I think it gave them more control over their learning. K-W-L works well because they have a chance to see they really may-do know something.

Yes, because they had to think about the concept more. I feel that they had to analyze the information more than when they answer questions.

At the first set of teacher support meetings there were more obstacles than benefits mentioned by the teachers. However, in the second set of teacher support meetings, teachers articulated a better balance between positive experiences and obstacles using the strategies. Most of the comments related to student achievement and behavior as evidenced through the following quotes:

I think the positive experience I've seen is actually seeing the light bulb come on and kids getting it. Kids retaining information, going, "I understand this so much better." That's been incredible.

I guess my most positive experience or benefit would have to be.... the fact that I'm getting a lot more on task activity with the kids. Whereas before, things like lecture, a lot of them were daydreaming, looking around, not taking the notes, no matter which strategy I've used. So I don't have nearly as many kids just out there daydreaming and not actively trying to use the strategy.

I like the strategies because it also helps them realize that their past experiences, their past knowledge, is important.

I think that light bulb went off when they kind of figured out that they could use summarization for any topic.

The benefits noted through classroom observations dealt mainly with students' attentiveness to teacher instruction regarding how to use the strategies, their participation in discussion, and the interest they exhibited through asking clarifying questions. For the observation, teachers were asked to focus on the summarization strategy. This was the strategy that was new to most of the teachers in the training. It is also a skill that students in the school struggle with as evidenced by TAAS results. In every observation, the teacher had already introduced the strategy prior to the observation. There was evidence that the students had knowledge of the step-by-step process taught in the teacher training component of the study. With only two exceptions, students displayed knowledge and skill development with the strategy. They could articulate the steps in the summarization process by answering correctly when the teacher asked, "What step is first, what happens next," etc. The oral responses students gave regarding important concepts were accurate and again indicated that prior instruction had occurred. Students were receptive, a finding expressed by teachers in support meetings, and even eager to learn the strategies in most classes. The student effort observed indicated that most of the students were positive about the strategies.

The teachers who were observed spent time at the beginning of the class noting the benefits of using these strategies, which indicated their understanding of the importance of the strategies. For example, "This is a technique to help you learn information out of a science text." Taking the time to talk about the benefits appeared to

help students understand the importance and value of the strategy. Additional comments teachers made in class and in the teacher support meetings communicated their understanding of the value of learning content literacy strategies. Examples of those comments are listed below:

I told them it would help them on TAAS.

Understanding what you read. . . . A lot of kids told me the reason that they didn't want to (do this) was because they didn't understand. Well, maybe this will help you understand.

They're going to be using it in college, they're gonna use it in life. When they go out into the business world, they are going to have to be able to take information, separate it into important and the unimportant. So it's a tool they can use no matter what they do, whether they go to college or any type of job.

Another possible benefit of an initiative to implement content literacy strategies into the classroom is teacher knowledge and understanding about the strategies, which is obviously a prerequisite to teaching students the strategies. On the Post Study Teacher Survey teachers were asked when and why they would use the content literacy strategies that were included in the training component of the study. They were given two points per strategy if the teacher answered both the "when and why" accurately, with a maximum number of eight points possible. Teachers earning 6, 7, or 8 points were considered strategy strong, 4 or 5 points strategy average, and 0, 1, 2, or 3 points as strategy weak. The results are listed in Table 5 (p. 83), and a comparison is made with the Pre Study Teacher Survey in Table 6 (p. 83).

Modest improvement on conditional and procedural knowledge was made. This finding would indicate that moving teachers forward in this area, developing a depth of

knowledge, understanding, and expertise, may be a slow process, one that will require patience on the teachers' and supervisors' part.

Table 5

Teacher Knowledge of Content Literacy Strategies

Points given for accurate responses	No. of teachers receiving specific number of points
8 points – strategy strong	6 teachers
7 points – strategy strong	1 teacher
6 points – strategy strong	1 teacher
5 points – strategy average	2 teachers
4 points – strategy average	3 teachers
3 points – strategy weak	2 teachers
2 points – strategy weak	No teachers
1 point – strategy weak	1 teacher
0 points – strategy weak	1 teacher

Table 6

Pre – Post Study Comparison of Teachers' Knowledge of Content Literacy Strategies

Teacher Knowledge	Pre-Study	Post-Study
Strategy Strong	44% (n = 7)	50% (n = 8)
Strategy Average	25% (n = 4)	31% (n = 5)
Strategy Weak	31% (n = 5)	19% (n = 3)

An additional benefit was noted by teachers through tying a pre study survey question to a follow-up post study survey question regarding difficult areas for students. Although the teacher surveys were anonymous, they were coded with a number so the pre study survey and the post study survey could be matched to assess various issues. In the

Pre Study Teacher Survey, teachers were asked to identify areas that their students struggled with the most in understanding their content. On the Post Study Teacher Survey, teachers were asked if the strategies they had implemented during the study helped students in the areas they identified. Fifty-six percent responded yes, 6% commented “somewhat,” and 6% wrote “not immediately, but may in the future.” Some felt it was too early to tell if the strategies assisted students in areas they identified as troublesome for students. Examples of the difficult areas and the teachers’ responses after the study are listed in Table 7. This finding is additional evidence that the teachers perceived the content literacy strategies as beneficial in helping students learn.

Table 7

Pre-Post Study Teacher Observations Regarding the Impact of Content Literacy Strategies on Identified Difficult Areas for Students

Area identified by teacher in pre study survey as difficult for students	Post study survey response to benefit of content literacy strategies to difficult area
Comprehension of complex information	“The summarization strategy is an effective way to check for student comprehension of information.” (This teacher indicated that he-she would use concept maps-mind maps and summarization after the study ended).
Terminology, application of concepts	“Definitely in the area of terminology. I think I would need more long-range research to determine the latter.” (This teacher indicated he-she would use K-W-L and graphic organizers after the study ended).
Identifying main concepts	“I really think summarization was extremely useful there. Not everyone got it unfortunately. They also still need to work on elaboration and what to include.”

Definitions of biological words and their correlation to information presented.

“The summarization activity did enhance this area.” (This teacher indicated he-she would use anticipation guides, K-W-L, and summarization after the study ended).

Research Question #1b

What benefits do students perceive regarding the use of content literacy strategies?

Benefits – Students.

The Post Study Student Survey and the structured student interviews served as the two main sources of findings regarding students’ perceptions about benefits of content literacy strategies. Although there were 88 students who took the Pre Study Student Survey, there were 98 students who took the Post Study Student Survey. There was one class in the Pre Study Student Survey that had very few students who agreed to participate initially. However, the students worked well with the strategies during the classroom observation; consequently, the teacher asked them if they wanted to participate in the follow up survey and additional students agreed to do so.

The first question on the Post Study Student Survey asked the students to explain when and why one might use K-W-L, graphic organizers, and summarizing strategies. This question was asked to determine the depth of understanding by students regarding not only when it would be appropriate to use the strategies, but to also determine if they understood why the strategy was beneficial and what it was helping them do. Students

were given “credit” for each answer that accurately described when or why they would use the strategy. The results are listed in Table 8.

Table 8

Post Study Conditional and Procedural Student Knowledge

Teacher-Class	% who knew when and-or why to use strategy		
	K-W-L	Graphic Organizer	Summarizing
TS1	33%	33%	77%
TS2	50%	72%	72%
TS3	0%	22%	77%
TSS1	60%	53%	86%
TSS2	6%	31%	63%
TSS3	7%	7%	92%
Total	27%	39%	78%

Obviously, students gained and retained more knowledge about summarization than any other strategy. Since teachers were asked to implement summarization and then select one of the other strategies, it is reasonable to assume that student understanding of that strategy would be considerably higher than their understanding of the other strategies. It also confirms the notion that the amount of time teachers devote to a strategy has an impact on students’ understanding and mastery of the strategy. Only three students mentioned summarization on the Pre Study Student Survey as a strategy they used to help them learn; therefore, it would appear that the students improved their knowledge of this strategy a great deal during the study or that they had this knowledge prior to the study

but did not use it. However, since it was the strategy listed by students most frequently as the strategy they will use in the future, they probably did not possess the knowledge of when and why to use the summarization strategy prior to the study. Student responses varied, with some students writing clear, concise answers regarding the use of the strategies and some students writing responses that were vague. Examples of students' knowledge of when and why to use the strategies included the following:

We-I have used this after I have read an article to sum up the main points. Summarizing is used so that the teacher knows that you understood the main idea of the article.

You use this strategy so that you will know what the main point of the article or book is. It will help you leave out all the unnecessary (sic) things.

Summarizing would help (you) understand the overall point to whatever it may be.

All teachers were asked to implement summarizing (see Appendix G), and then they could select one of the other strategies. Some teachers implemented all three strategies, and some implemented only summarizing. This accounted for some of the variation found as noted in Table 8.

The majority of students believed the content literacy strategies helped them understand the content in their social studies or science classes. The percentages varied somewhat from class to class; however, 71% of all the students in the study felt the content literacy strategies helped them. Summarization was once again the specific strategy mentioned most frequently by students. Table 9 (p. 88) presents students' responses to the question, "Did any of these strategies help you understand science or social studies better? If yes, which ones?"

Table 9

Students' Perception of Specific Strategy Benefits

Teacher-Class	% who responded Yes	% who responded No	Number of times strategy was listed		
			Summarizing	K-W-L	Graphic Organizers
TS1	78%	17% (5% don't know)	5	0	6
TS2	83%	17%	9	1	2
TS3	61%	39%	8	0	0
TSS1	87%	13%	7	0	0
TSS2	38%	56% (6% did not respond)	4	1	2
TSS3	85%	15%	4	0	0
Total	71%	27% (2% did not respond or put "don't know")	37	2	10

Note. Some students responded "yes" or "no" but did not list a strategy.

Positive responses included:

Graphic organizers and summarizing help me understand science better because it gives me a visual picture of things.

Yes, summarizing: though it takes a while to do, it really does pay off when finished.

Summarizing helped me the most because I learned how to find a general topic and simplify information from there. I was able to re-write my notes in a more efficient way for better understanding.

Yes, in fact all of them helped me figure out what I was learning and what I already knew about the subject.

Yes, summarizing, because if I remember one thing about a story I'll remember the whole thing.

The last piece of evidence from the Post Study Student Survey that indicated students' perception of benefits of content literacy strategies was a question about the impact of the strategies on student confidence as a learner. The specific questions was, "Has your knowledge and use of these strategies made you more confident in your classes? Explain." Again, the data listed in Table 10 indicates that most students responded positively by noting that the strategies had given them more confidence as a learner, with 65% overall responding positively.

Table 10

Strategies' Impact on Student Confidence

Teacher-Class	More confident: Yes	More confident: No	More confident: No response or somewhat
TS1	50%	28%	22%
TS2	72%	22%	6%
TS3	55%	45%	0%
TSS1	80%	20%	0%
TSS2	38%	56%	6%
TSS3	77%	23%	0%
Total	65%	30%	5%

The two classes that were considerably lower than the others, TS3 and TSS2, were also lower regarding the students' perception that the strategies were helpful. These two classes consistently did not view the benefits in the same manner as the other four classes. This finding will be discussed further in analyzing research question two and in chapter V. Student explanations for their positive confidence level were as follows:

Yes because now I can see something and help myself to understand it.

Yes because I understand everything better. It doesn't make things so difficult and confusing.

Now that I know how to summarize a page correctly, I can use it at home to study for my subjects also.

Yes, because I was failing this Biology class and now I have an 80.

Yes it has. It makes me feel confident because I know I know these things.

Yes because now I can raise my hand and not be embarrassed about saying the wrong thing.

Yes, I know I am collecting all the important information that I need when I study and this makes me feel confident.

Research Question #2a

What are the obstacles or challenges teachers perceive regarding the use of content literacy strategies?

Obstacles – Teachers.

The teacher support meetings, classroom observations, post study surveys, and structured interviews all served as data sources for this question. Although obstacles varied from teacher to teacher, patterns did emerge about the most common obstacles. Time was the obstacle mentioned most frequently throughout all data sources -- time to

learn the strategies themselves, time to plan how to integrate the strategies into lessons, and time to implement the strategies in the classroom. Concern was voiced about time spent on the strategies taking away from time to cover the curriculum. These concerns or obstacles are well documented in the literature. The following comments about time were common.

Time! It takes time to prepare these strategies for a lesson.

Time was the major obstacle.

Time for planning and implementing the strategies. We don't make it through the state-required material now. Time is the biggest obstacle.

It's very time consuming and takes a while to teach students, as well as monitoring progress.

Finding the time to prepare the material and work (it) into my syllabus.

Giving up the classroom time. Preparation time for the summarization activity can be overwhelming.

But the summarization strategy takes a lot more time, and I feel like a lot of times I'm pressed to cover so much content that you know, I don't really want to spend any more time than I have teaching them the strategy. Because I'm losing ground on content.

A second major obstacle shared by teachers was the initial lack of student success with the strategies, especially summarization; some teachers viewed this as student resistance. Teaching the process of how to summarize a passage was new to most, if not all, of the teachers. The comments in the first set of teacher meetings focused a great deal on frustration on the teachers' part with students' inability to "get" or "do" the strategy as indicated by the comments listed below. However, some of this frustration subsided after teachers and students became more comfortable with the strategy.

I'm having trouble getting them to answer in-depth questions, trouble getting them to think. They don't want to see the connections.

They just want to start crossing out before they read.

I did not have very good results with summarization. A lot of my students don't have the ability to read very well.

It's (summarizing) a hard thing, hard for them to get.

They didn't know what to keep and what to delete. I got a wide range of summaries, everything from a half page to a whole page.

They think that summarization means taking a sentence and just reading and mixing the words around. They don't cut out any text.....

The reading is the part they don't like. They will just take it right out of, you know, they take this piece of a sentence and stick it with another one. Getting it in their own words is a real challenge.

In the second set of teacher support meetings and on the Post Study Teacher Survey, the teachers expressed their own lack of expertise with one of the strategies, summarization, as an obstacle to overcome. They began to realize that as they became more confident with the strategy, so did their students. Teacher confidence and expertise with the strategy were critical to successful implementation. Evidence to support this proposition is listed below. Although lack of confidence was considered an obstacle at one point in the implementation stage, it was an obstacle that could be overcome as evidenced by those teachers who persevered and mastered the strategy.

I found it awkward for me to do the think aloud.And they could kind of see me, going okay, maybe this isn't working here you know. ... You know, we still have to work on this even being adults. Because I told the room, you know, hey, I might not be the best at this either.

As I use the process more, and I become more comfortable with it, I think the impact will go up because I'll be more comfortable with it and can convey to them what they need to do.

I think my students have seen my confidence with this process grow and as they've seen me be a little bit more confident with it, they are becoming more confident with it.

I mean that's why they're having trouble with it because I didn't show them that way first.

I think that most of these things that we are doing aren't things that your normal kid just picks up on the wayside. I think that our impact is pretty big and it's true, as we become more comfortable we're going to instill that in our kids. But most of our kids come in and they've heard the word summary, they've done a couple, but they don't really understand the process.

Summarization has been a struggle for me in learning how to teach it and in having time to allow myself and the students to get comfortable with the process.

Lack of practice using the strategies myself (biggest obstacle).

Classroom observations confirmed frustrations with the summarization strategy expressed by teachers and students regarding the "laborious process" they were following. Some of that was due to interpretation of the strategy, which was modeled in the training, and some of the frustration was due to the fact that the process needed to be modified to become more effective. The "interpretation" observed in one class included a teacher almost rewriting the passage to be summarized and then asking the students to write the summary from the "rewritten" or multiple summary sentences from the passage. This took an excessive amount of time and seemed unnecessary to write a good summary. Once some minor changes were made to the process, i.e., adding a step where students listed key word or phrases prior to writing the summary, the process was improved. This

also accounts for some of the disparity between classes in Table 9 depicting the impact the strategies had on student confidence as a learner.

Research Question #2b

What are the obstacles or challenges students perceive regarding the use of content literacy strategies?

Obstacles – Students.

Obstacles and challenges from students' perception were gleaned from three data sources: classroom observations, the post study surveys, and the structured interviews. A frequent comment from some students was that the summarization strategy in particular was boring. The researcher saw evidence of this when two students were observed falling asleep in class. This observation, however, took place before some adaptations were made to the strategy in the TS 3 class. Although student participation was excellent in most classes, there were some students who either appeared not to follow the strategy or who put forth a minimal amount of effort.

Other obstacles from students' perspectives ranged from concern over the difficulty of learning the strategies to laziness. Many students expressed that they just did not want to go to the effort required to follow the process or do as much work as the summarization strategy required. Time was also a frequent concern or challenge mentioned by students. Examples of obstacles or challenges listed by the students are listed below.

Summarizing was difficult for me because I used to write about everything in the article, even the unnecessary things. So when they told us to cross out information that wasn't important it was hard for me.

The strategies were difficult to learner (sic) because I think we are to (sic) old to try to learn a new style of learning. It would probably work better on elementary kids.

Summarizing: took a long time to do; sometimes difficult to decipher (sic) what info is absolutely necessary; graphic organizers: fun! Not difficult for visual learners.

Nothing really (difficult) – just time consuming.

Took too long.

Having to write too much and reword everything.

Had to read boring book (biology).

Too long and took up more time than just writing notes.

It was boring.

It's a lot of work.

In summarizing you have to read the whole article and then pick main points and some of them sometimes aren't even right ideas that you pick.

I guess knowing when to use these strategies.

The directions of what I'm suppose to do.

Research Question #3a

What reasons do teachers give for planning to continue or discontinue the use of content literacy strategies?

Continue or Discontinue – Teachers.

Post study surveys and structured interviews served as the data sources to answer this question. Overall, the majority of teachers and students indicated they plan to continue using content literacy strategies in the future. Three questions on the Post Study

Teacher Survey were used to analyze this research question. The first was question number three on the survey, “Will the knowledge and use of these strategies change the way you teach?” Seventy-five percent of the teachers responded “Yes” to this question, 19% responded “no,” and 13% responded “somewhat.” Sample comments included the following:

Yes, these are now part of my teaching “bag of tricks.” I will be able to apply these strategies when timing and content allows.

Probably not.

Yes, it increases the variety in which I can present the material.

They (strategies) will be another tool to use, but they will probably not drastically effect my overall teaching methods.

The second question on the Post Study Teacher Survey to assess reasons why teachers may continue or discontinue to use content literacy strategies was question number five, “Was the effort you put into integrating the strategies into your teaching worth the effects of the strategies on students’ learning? Why or why not?” Eighty-eight percent of the teachers responded “Yes” to this question. Sample comments made for why or why not were as follows:

Yes, anything new I can use that increases student learning and interest is worth the time.

Yes I have seen greater understanding in my students, and my students have become more involved in the lessons.

Yes, some students’ grades raised due to these strategies.

Yes, because I had several students tell me that it helps them understand the information better.

Yes, all of the strategies help to improve student knowledge. All of these strategies help with class motivation. Having a variety of “tools” helps keep students involved in learning.

No. It took place too late in the year. Students need time to practice and develop these skills in order to experience the benefits.

I could not really tell.

The third question on the Post Study Teacher Survey that assessed teachers’ continuing or discontinuing the use of the content literacy strategies was question number six on the survey, “Which of the strategies will you continue to use after the study has ended?” Summarization was the strategy mentioned most frequently, a total of 14 out of 16 possible times. Graphic organizers were listed 11 times, K-W-L was listed 10 times, and anticipation guides were listed six times. Reasons the teachers gave for continuing the use of these strategies are listed below:

Beneficial to students.

Summarization – I realized it is what I have always used to teach and understand myself. I feel it will really help the kids if they would use it too.

These help students organize-sequence information and find relationships. Summarization strategy because it helps me check for comprehension or understanding.

K-W-L and graphic organizers – students liked using them, test scores improved after using them.

Research Questions #3b

What reasons do students give for planning to continue or discontinue the use of content literacy strategies?

Continue or Discontinue – Students.

Two questions on the Post Study Student Survey addressed the issue of continuing or discontinuing the use of content literacy strategies in the future. Question six asked, “Are you using the strategies in other classes? Which ones and why?” Question seven asked, “Which strategies will you continue to use this year and in future years?” Although social studies and science were the classes mentioned most frequently as the classes where the students use the strategies, English was also mentioned often and some electives (debate, speech, and reading). Again, the responses to these questions were first analyzed individual class by individual class and then were added together to provide a percentage representing all the students in the study. The results are listed in Table 11.

Table 11

Student Strategy Usage in Classes Other than Social Studies or Science

Teacher-Class	Yes	No	No response
TS1	67%	28%	5%
TS2	61%	33%	6%
TS3	28%	72%	0%
TSS1	77%	38%	0%
TSS2	31%	63%	6%
TSS3	31%	69%	0%
Total	47%	50%	3%

Classes varied greatly, with the majority of students in three of the individual classes using the strategies in other classes. The majority of student in the remaining three individual classes were not using the strategies in other classes. However, when all the students were added together, a little less than half (47%) of the students who completed

the post study survey used the strategies learned in the identified class to assist their study in other classes. Sample comments regarding use of the strategies in other classes were as follows:

I'm using them in English and in debate to help me capture the idea of the readings we discuss.

Yes, English and most of my electives. After using this strategy my grade raised from a C in English to a 100 average.

No because I'm lazy, but if the teachers asked me to do it I would.

"Takes too long and can't always apply."

I am using this strategy in my English class because English involves comprehension and reading. So summarizing the passage makes it easier for me to understand.

No I do not use the strategy in my other classes but I am sure there are some classes where the strategy will be beneficial.

Not really.

In response to the question regarding which strategies the students will continue to use this year and in future years, most students responded that they would indeed use the strategies in the future. Table 12 (p. 100) shows the percent of students who will use them in the future as well as the strategies listed most frequently as the ones they would use again. However, there were some students who expressed they would not use the strategies in the future, and comments from both perspectives are included below.

Table 12

Student Strategy Usage in the Future

Teacher-Class	% Use Strategy in Future	Number Times Strategy Listed
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		Summarizing	K-W-L	Graphic Organizer
TS1	89%	4	0	2
TS2	89%	12	2	7
TS3	67%	11	0	0
TSS1	93%	10	5	5
TSS2	50%	8	0	2
TSS3	85%	10	0	3
Total	77%	55	7	19

Although summarization was the strategy students struggled with the most, it was also the strategy they found most beneficial and the one they will use the most in the future. Most of the comments on the post study survey and in the structured interviews were about summarization. This was probably due to the fact that teachers in the study were required to implement summarization; therefore, more time was spent on learning that strategy. This indicates that students may prefer strategies that they spend significant time using. Typical comments included the following:

The graphics and the summaries because they help me to learn and remember the information better.

Summarizing – I have become better at it this year, and it has really helped me to better understand the article.

Summarizing because it helps me remember.

Summarization, the unimportant info is left out so it does not distract me.

Summarization and graphic organizers, because it will help me understand what I'm reading and it will also help me in my writing.

None, I'm doing good and my grade was not reflected upon using these strategies.

No – I use my own strategies, these three didn't prove to be helpful enough for me to change my current studying strategies.

Absolutly (sic) none of them It (sic) is all luticrous (sic).

Research Question #4a

What support or experience is needed for teachers to continue to use content literacy strategies?

Support – Teachers.

There was consensus that a support system is needed for implementing and sustaining the use of content literacy strategies. Teacher support meetings, Post Study Student and Teacher Surveys, and student and teacher structured interviews were used to collect information regarding support students and teachers need to continue using content literacy strategies. During the second round of teacher support meetings, a specific question was asked regarding what support was needed. Although administrative or supervisory support was considered important, the main support deemed most helpful was collegial support – teachers helping teachers as evidenced through the following statements:

Getting to go into classes with other people. I would like to go and visit another teacher's classroom and see how they do it. To keep teachers feeling like they're not out there fighting the battle by themselves.

I think it is extremely useful to dialogue in this room (teacher support meeting).

Well, I think being able to sit down with other teachers that are using it and discuss, well, this is happening with my kids.

Observation of other teachers using the strategies.

Round table discussion of success and any adaptation made.

Reflection with other colleagues that went through the training to discuss-process how they are doing.

Teacher to teacher suggestions through trial-error.

Administrative or supervisory support was also viewed as important. It appeared to be important that the administrator valued the use of the strategies. Conducting the training on school time and getting substitutes for the teachers in the study also was mentioned by teachers as important.

It was real helpful having a dialogue with you (principal) after you had come in and observed it. ...Having someone observe you...not in a threatening type situation was pretty helpful.

He (colleague) has given me some really good ideas, as well as the ideas that you (principal) have given me. I think having time to just sit down and discuss it.

Training and material preparation were also mentioned by several teachers as support they needed. They realized the importance of staff development and expressed a desire to receive additional training. The issue surrounding “materials” support was one of time. Time to prepare the materials or activities was viewed as an obstacle mentioned earlier. The teachers felt if some of the materials and lessons were provided to them, it would save time and would be helpful.

I would really like to see that again (training). It would not bother me in the least to go through that again.

I could use personally some more knowledge about how to take it to the next level.

More inservice on the strategies to reinforce them.

Additional, or follow-up training.

Inservice review – working with other teachers.

Pre-prepared documents I can use in class to help teach these strategies.

I think one thing that would help is have some type of base material that as we go through this, instead of me having to reinvent the wheel, have that (materials) available so I can either use it or modify it to suit what I want to do.

Teachers expressed that observing students succeed was a very powerful motivator for them to continue using content literary strategies. In response to the question, “What support or success is needed for continual use of content literacy strategies?” teachers commented as follows:

I'll know for sure on Thursday when they take the test.

Kids understanding it a little better.

For me it's pretty simple, either they're performing better, or they're performing the same, or they're not performing as well as they were before.

Research Question #4b

What support or experiences are needed for students to continue to use content literacy strategies?

Support – Students.

As mentioned earlier, 77% of the students indicated on the Post Study Student Survey that they would use content literacy strategies in the future. The support they found most useful in learning the strategies was teacher support. They reported what teachers “said or did” was most helpful. Almost all of the responses given dealt with teacher modeling of some kind. Some students also mentioned the posters and bookmarks

given to teachers during training to use in their classrooms. A sample of responses is listed below:

Read passages with us – explained everything.

She's gone over it with us and helped us through the steps.

Helped us learn how to pick out the important information.

Showed examples and explained.

They explain why these strategies are used, how they help us.

We went over deleting unimportant information and broke it down into simple parts over and over again.

Given us bookmarks.

He put his examples on the overhead.

Practice so we could get the hang of it.

In addition to teacher modeling emerging from the structured student interviews as support needed for students to continue their usage of the content literacy strategies, teacher encouragement was mentioned frequently. The students also revealed that although they had been required to write summaries in the past, most of them had not been taught a process to accomplish this. Statements supporting these findings are listed below:

I: When teachers have asked you to write a summary in the past, have they shown you how?

S: No. This is like the first time I was shown.

I: So basically before this, they said write a summary and you'd just write it.

S: Yeah, I just (wrote it).

I: Okay, but not a real process?

S: No, no one really used the process.

I: In your opinion what would motivate students to use these strategies?

S: Learning them, people teaching them and everything. And really getting involved with them. Plus like before I guess, people would just like spend like let's say 30 minutes teaching them or whatever. They don't really care. Mr. M. like, he took like three class periods teaching us how to do it and everything and going into detail with it. That really helped out a lot."

I: Why do you think there are some students that get all the way to college and still don't know how to use these strategies?

S: They probably ignored them or something. Or they weren't taught how to do them or the teachers didn't really care. They didn't take the time to teach them to the students I guess.

Summary

The majority of the participants, students and teachers, indicated through multiple data sources that content literacy strategies were beneficial in helping students learn. The benefits for teachers included increasing student learning and understanding of content, increasing instructional strategy repertoire, increasing student engagement, and equipping students with strategies they can use in other classes and in the future. Benefits students noted were increasing learning and understanding of content and acquiring strategies that could be used in the future.

Time was a major obstacle for students and teachers. Students felt the strategies "took too long to do" and teachers felt that in addition to taking class time, the strategies took a great deal of time to prepare and prevented them from covering the required curriculum. Lack of student success or student resistance was also viewed as an obstacle

by teachers. Additionally, lack of teacher confidence played a role as an obstacle for students and teachers.

Despite these obstacles, the majority of the participants plan to continue using content literacy strategies, with the major reason given by both students and teachers as improved student learning and understanding of content. The support needed for teachers included training, collegial, and administrative support. Students noted teacher modeling as important to them learning the strategies and practice with the strategies as critical to ensure continual use of the strategies in the future.

CHAPTER V

ANALYSIS AND RECOMMENDATIONS

This study investigated the benefits and obstacles of content literacy strategy instruction from students' and teachers' perspectives to determine the complexities of implementing and sustaining content literacy strategy instruction in secondary social studies and science classrooms. The importance of content literacy strategy instruction has been recognized by reading researchers since the 1900s (Alvermann & Swafford, 1989; Bean, 1981; Bond, 1941; Gray, 1925; Herber, 1970; Huey, 1908-1968; McCallister, 1932). In 1994, a quarter of our nation's high school seniors and approximately a third of our eighth graders failed to reach the basic level on the reading assessment portion of the National Assessment of Educational Progress (NAEP) (Williams et al., 1995). Simpson (1984) found freshmen college students lack reading and study skills. Thus the importance of teaching content literacy strategies and evidence that a need exists with students has been established. So why are many students lacking the skills that can help them experience success with difficult reading material? This study sought to search for the key to this conundrum. Teacher resistance to systematically teaching the content literacy strategies is well documented in the literature as one possible reason content literacy strategies are not being taught (Fox, 1993; Hollingsworth & Teal, 1991). Additional reasons were identified in the study. This chapter will analyze the findings and document the patterns that emerged through multiple data sources.

General Observations

The majority of students and teachers were positive about the content literacy strategies and indicated they would continue using them in the future. A high percentage of both teachers (100%) and students (71%) noted on the post study surveys and in structured interviews that the strategies improved students' understanding and learning in social studies and science. Most of the obstacles that emerged from the data have been identified in the literature review. However, one possible obstacle emerged that was not documented in the literature review, and that was teacher confidence and its impact on successful implementation of content literacy strategies.

Due to multiple data sources and the ongoing analysis of qualitative research design, the researcher was able to observe “the journey” teachers took in learning how to implement the strategies. Some were more successful on their journey than others. Some persevered on the journey when roadblocks presented themselves. Others decided to stop when confronted with roadblocks. Although there was a great deal of consensus among teachers and students regarding benefits, obstacles, and support needed to sustain continuance of the strategies, the researcher also observed individual differences that were powerful variables in determining the success of the implementation and whether the individual will continue or discontinue using the strategies. Confidence as a learner (teacher or student), belief system about one's responsibility as a facilitator of learning or a learner, expertise and understanding of the goals of the strategies, and work ethic all contributed to the different paths teachers and students took on their learning journeys.

Specific Observations

Research Question #1a

What benefits do teachers perceive regarding the use of content literacy strategies?

Benefits – Teachers.

Teachers' perceptions of the benefits of content literacy strategy instruction fell into one major category and three minor categories. The major category was increased student learning and understanding of content. This was, by far, the most powerful benefit of using content literacy strategies. This, of course, is not a surprise since the rationale for using content literacy strategies is to increase student learning. This finding, however, is congruent with previous research regarding the positive impact content literacy strategies can have on comprehension and learning (Bulgren & Scanlon, 1998; Dole et al., 1991; Foos, 1995; Frager, 1993; Monroe, 1997). Teachers expressed the belief that they would commit to learning any new strategy if it helped their students. The minor categories of benefits for using content literacy strategies were increased teacher instructional repertoire, improved learner independence, and increased student engagement.

Regarding student learning, as indicated previously, 100% of the teachers responded that the strategies did improve students' understanding and learning of the content. Additionally, 88% of the teachers indicated that the effort put into integrating the strategies into their teaching was worth the effects of the strategies on students' learning. This "increased student learning" was expressed in various ways: students understanding the content better, making more interdisciplinary connections, making better grades,

performing higher level thinking, etc. Teachers articulated that the strategies made students “think.” This supports the notion that metacognition occurs when using these strategies. Teachers expressed that students were forced to think and “stretch” themselves when they had to write a summary from key words or phrases. This is consistent with the research on summarization as a strategy that requires students to use metacognitive thinking by making sure they understand the main points of the text, eliminate the information that is not critical to that understanding, and condense information in their own words (Brown et al., 1981; Brown et al., 1983). Data to support this finding is noted in the following teacher responses:

I: What do you think, what’s the purpose for content literacy strategies in the first place? Why are we bothering?

T: I think it helps the kids get a better grasp, whether you’re talking about the summarization or the graphic organizers. The kids have to actually think about it, process it. So they’re not just having to look through their book and regurgitate the answers. They have to, they actually have to put thought into the material.

One of the Post Study Teacher Survey questions asked, “Did the strategies increase student learning and-or understanding of the concepts-information?” Teachers responses included the following:

Yes, because they had to think about the concept more. I feel that they had to analyze in the information more than when they answer questions.

Yes, the summarization strategy increased student comprehension of complex concepts. The summaries that were written truly indicate student understanding and learning.

Yes, it aided their ability to see relationships, especially cause and effect.

An example of a teacher who felt that the summarization assisted students in making interdisciplinary content connections is depicted in the following excerpt from a teacher structured interview.

T: I think a lot of time kids get so caught up and they get chunks of information, but there's no real connection between them. And if they're having to summarize, whether it's in English or history or science or whatever...those chunks sometimes have...natural connections. If they really understand the information from history might tie over to science and that summarization may hold the key to those connectionsif that makes sense.

I: So you think the summarizing helps them to really understand?

T: Uh-huh. I think the summarization really helps them to understand. And for a little quick example....the rocketry project. In history they used, they retraced the history of rockets starting with Sputnik. And then in my class we built rockets, launched rockets, and got data for them to use for their rocket. And then in their introduction they had to use some of their knowledge from history because they had to use some history behind rocketry in their introduction to the lab report.....So they got to transfer over that information and then in math, they utilized that data from science and they used the Pythagorean theorem.....So I think that summarization just really checks for if they know if they've learned information, if they comprehended. And then it can transfer over into other classrooms.

Student performance on tests also was viewed as important and a benefit. Some teachers expressed that helping students perform better on summative assessments was the “bottom line” for them. Teachers noted slow progress in this area initially but saw great improvement after students became more comfortable and proficient with the strategies, especially summarization. The following excerpt from a teacher interview indicates that process:

T:the first test they took after we started summarization was not very good. The last test they took was summarization and essay writing and their grades were night and day.

I: What do you think was the difference between the first and the second?

T: The first (time) (they) did not understand how to put things in to their own words, and portray the major thoughts.....(second time) reading a passage, we talked about it, did the visual map....figured out the main ideas.....and when I'm saying grades were improved....they just really blew me off the face of the map.

Yes, some students grades raised due to these strategies.

The teachers' assertions are consistent with the review of the literature. Franklin et al. (1992) found content area reading strategies to yield positive student learning results. Applegate et al. (1994) conducted two case studies with college students using content literacy strategies and found student academic success improved after students learned to use the strategies. Indeed, student learning is the major benefit of using content literacy strategies, and the teachers in the study confirmed this repeatedly.

An additional benefit that teachers expressed was that of increasing their instructional repertoire. Many referred to the strategies as adding to their "tool kit" or "bag or tricks" to help them in teaching students to understand the content. Seventy-five percent of the teachers responded that the knowledge and use of the strategies will change the way they teach. Teachers seemed to understand that multiple strategies are needed to empower all students to become independent learners. The comments listed below were common throughout the study.

I'll be more flexible – with the understanding that these strategies can work.

These strategies allow for more "tools" in my teaching bag. Knowing how to use these strategies can impact the students with motivation, learning, comprehension. I will definitely utilize these strategies in my classroom.

Another weapon in my arsenal now.

Yes, all of the strategies help to improve student knowledge. All of these strategies help with class motivation. Having a variety of “tools” helps keep students involved in learning.

The teachers also realized as they used the strategies that there were multiple purposes for them. For example, the strategies not only assisted student understanding but also served as an assessment tool for the teachers. Through the teachers’ reflection, the teachers began to view the strategies as both teaching strategies as well as learning strategies. This was experienced with more than one strategy. Examples of this understanding on teachers’ part are given below:

It’s a great assessment tool. So it was a good assessment tool for me, but it was also a good one for them.

I: Why do you use that as an assessment tool?

T: Just to see if they picked up the information and see if they got the relationship that I was trying to get across to them. ... You can really see if they understood what you were talking about.... We were Summarizing an article over sports, athletic competitions and how they involve the different concepts of physics we were studying at the time.... And they could relate all those to like runners, swimmers, and power lifters. That’s a good way to see if they understand.

Teachers also noted that student engagement in class was higher using these strategies. The strategies required students to become more active, and passive participation was more difficult. When teachers required students to use content literacy strategies, they found that students had to become involved. The following statements are examples of teachers’ perceptions of increased student engagement:

Yes, all of the strategies help to improve student knowledge. All of these strategies help with class motivation. Having a variety of “tools” helps keep students involved in learning.

I guess my most positive experience or benefit would have to be, it's really very simple, and that's the fact that I'm getting a lot more on-task activity with the kids. Whereas before things like lecture, a lot of them were daydreaming, looking around, not taking the notes, no matter which strategy I've used. So I don't have nearly as many kids just out there daydreaming and not actively trying to use the strategy.

Preparing students to be independent learners in the future was a benefit that teachers expressed in the classroom as they were teaching the strategies to the students and in teacher support meetings. They understood that if students mastered these strategies, they would be using them in a variety of settings, including other content classes, college, help on tests such as TAAS, etc. The teachers also noted that if some of the strategies were taught at the beginning of the school year, then students could demonstrate independence with the strategies throughout the year. There was concern expressed over teaching them to summarize, for example, during the middle of the second semester. Examples of how teachers verbalized the benefit students would receive in the future from learning the strategies are cited below:

I told them it would help them on TAAS.

They're going to be using it in college, they're gonna use it in life. When they go out into the business world, they are going to have to be able to take information, separate it into important and the unimportant. So it's a tool they can use no matter what they do, whether they go to college or any type of job.

Research Question #1b

What benefits do students perceive regarding the use of content literacy strategies?

Benefits – Students.

Students also viewed increased learning and understanding of content as the greatest benefit of the content literacy strategies. Seventy-one percent of students on the Post Study Student Survey reported that the strategies were helpful in learning and understanding content. Sixty-five percent of the students indicated that the strategies made them more confident. Eighty-three percent of the 12 students who participated in the structured student interviews felt that the strategies helped them learn. Learner independence was communicated by students using the strategies in other classes and noting that they would use them in the future. Findings ranged from 28% to 67% of students per class in the study using the strategies in other classes, with an average of 47% of the students using the strategies in other classes. The classes with the lowest percent of students using the strategies in other classes were the same classes that ranked low on other positive benefits of content literacy strategies. Seventy-seven percent of the students on the Post Study Student Survey and 83% in the structured student interviews indicated they would use these strategies in the future. They commented on the positive impact of the strategies on their grades and in general exhibited positive attitudes toward the strategies. Students voiced their perception of benefits of content literacy strategies in the following manner:

I: In addition to helping your teacher know something about what you already know, how does it help you as a learner to go through K-W-L?

S: Cause it kind of makes me curious to learn more. Like sometimes (the) teacher tells us that you know stuff. So, it makes me curious to learn more.

Well instead of having a very intimidating large piece of paper that has a lot of information on it, some rather confusing text, we broke it down individually step by step into smaller sentences to where it was easier to comprehend.

It helped me a lot in science because it made it a lot easier, as we could write the explanation in our own words, so we would understand it better. It helped in studying for the tests, as it was in a condensed form, so I didn't had (sic) to read numerous pages of the textbook.

Summarizing helped me the most because I learned how to find a general topic and simplify information from there. I was able to re-write my notes in a more efficient way for the chapter for better understanding.

Yes, in fact all of them (strategies) helped me figure out what I was learning and what I already knew about the subject.

K-W-L and summarizing because they are great for beginning and finishing lessons.

Summarizing – I can keep things in my head more easier and for long period time if I use this skills.

I feel I have learned things and not just memorized them for a test.

Yes, because I was failing this biology class and now I have an 80.

Summary

Both students and teachers indicated through multiple data sources the benefits of content literacy strategies. Teachers viewed increased student learning and understanding as the biggest benefit, which was noted as everything from better grades to increased knowledge to deeper understanding about concepts being taught. Additionally, they realized the benefit of increasing their instructional repertoire with strategies that keep learners engaged and teach them processes that will assist in other classes and in the future. Students also perceived increased learning and understanding as the main benefit of learning the strategies. The strategies made many of them more confident as a learner and provided them with strategies that can assist them when they encounter difficult text. Prior to the study, results from the Pre Study Student Survey and structured student

interviews indicated that few learning strategies were understood or used by the students. The most common response when asked what they would do when encountering difficult text was “reread.” Therefore, learning content literacy strategies will equip them with new tools and help them become a more confident and independent learner. This finding is supported in the literature review where it was noted that developing a repertoire of content reading strategies can result in a reader becoming an independent learner (Musthafa, 1996; Quiocho, 1997; Salembier, 1999).

Research Question #2a

What obstacles or challenges do teachers perceive regarding the use of content literacy strategies?

Obstacles – Teachers.

The main teacher obstacle was time, which included time to learn the strategies, time to prepare lessons and materials, and time devoted to implementation of the strategies that interfered with “covering the curriculum.” This finding supports prior research findings regarding time as an obstacle as viewed by teachers (O’Brien & Stewart, 1992; Vacca & Vacca, 1993). The notion that content literacy strategies take too much time and prevent teachers from “covering” the content has been well documented previously (Bean, 1997; McAloon, 1994) The concern with “covering the curriculum” is embedded with the long-standing need of some teachers to “control and tell,” therefore controlling the amount of curriculum covered. Three data sources confirmed this finding of time as an obstacle: teacher support meetings, Post Study Teacher Surveys, and

structured teacher interviews. Time as an obstacle was a recurring theme throughout the study, and the following comments were common:

Time, having to modify what is planned to add some things.

I need a lot of preparation time – a lot more than I thought. But the summarization strategy takes a lot more time and I feel like a lot of times I'm pressed to cover so much content that you know, I don't really want to spend any more time than I have to teaching them the strategy.

Time is the biggest obstacle.

It's very time consuming and takes a while to teach students, as well as monitoring progress.

Lack of student success early in the process was an obstacle for some teachers.

The first set of teacher support meetings focused a great deal on what the students could not do. The students' struggle with learning the strategies, particularly summarization, was viewed with considerable frustration by some. They almost seemed surprised by their students weak skills in this area. Obviously, summarization was a skill they expected students to have better understanding of than they demonstrated. This validates the need for direct instruction; most students do not just "acquire" skills. Examples of their initial frustration are noted in the following statements:

They just want to start crossing out before they read.

I did not have very good results with summarization. A lot of my students don't have the ability to read very well.

They think that summarization means taking a sentence and just reading and mixing the words around. The don't cut out any text. . . .

Resistance by students to summarizing.

Frustration of students in trying something new. Reluctance to put the time in to do it correctly, wanting to take it straight from the book and call it their summary.

Teacher confidence was also an obstacle. About mid-way through the study, teachers began to shift the focus from what the students could not do or understand to their own lack of understanding. Bean (1997) maintains that many teachers have not been trained in how to teach content area literacy strategies. The teacher training for the study was 6 hours. This may have been insufficient to give them the confidence they needed. Lack of confidence with some teachers seemed to prevent them from trying the strategies as exemplified through this excerpt from a teacher interview:

I: I'm hearing you say this kind of disrupted your routine.

T: A little bit. And you know, at the front end I really wasn't sure what I was supposed to do. I taught the summarization from the steps of summarizing what you read. And then we met and people talked about using anticipation guides and K-W-L. I thought, "I haven't done any of that. Was I supposed to do all of that?" Then I kind of got the idea that I wasn't doing the right thing. Then Sheila (principal) was going to come in. What am I going to show her? What is she going to see? What am I doing right? What am I doing wrong? I kind of felt like okay, you're a history teacher, but somewhere you've got to be an English teacher. You know, so teach history, and teach English and then we're going to come see if you're teaching English right.

This teacher ultimately shared with the researcher during a conference after an observation that he had not really implemented or used any of the strategies except summarization, and he had not used that one as instructed in the training. His comments indicated a struggle with "being a history teacher or an English teacher." This notion that teaching these skills are an English teacher's responsibility supports Umans' (1963) contention that, "Somehow, the feeling persists that reading is always taught 'elsewhere'

and ‘at another time.’ ” (p. 7). Bintz (1997) noted that many secondary teachers view themselves as teachers of content and that reading is the English or language arts teachers’ job.

The student findings from this teacher’s class stand out from the rest of the teachers on most indicators. For example, his students represented the lowest percentage of students who felt that the strategies had helped them learn and understand the content, 38%, as compared to a mean percent of all students of 71%. The strategies impacted fewer of his students’ confidence, again 38%, as compared to a mean percent of 65%. Additionally, fewer students in his class, 50% as compared to a mean percent of 77%, plan to use any of the strategies in the future. In the structured student interviews, 2 out of the 12 students interviewed indicated they would not use the strategies in the future, and one was from this teacher’s class.

Although teacher confidence played a role in this teacher’s performance and attitudes, an additional factor emerged in the structured teacher interview. Daisey and Shroyer (1993) interviewed 40 university instructors who teach content reading to preservice secondary teachers to determine why some preservice teachers have negative attitudes toward a content area reading course. One of the findings from the study was that some teachers are not readers and writers themselves, and therefore resist using the content area reading strategies. This may be the case with this teacher as indicated by the following excerpt from the teacher interview:

I: Why are we doing this in the first place? What do you think the purpose for these content letters and strategies are?

T: As far as the main purpose to help students to get to a point to where they can read and understand what they are reading better. First of all you have to get kids to where they want to read. That's probably the biggest obstacle. I'm probably the worst example because I hate to read. I'm a visual learner and it's too slow for me. Unless it's something I'm really interested in, I don't enjoy doing it. I didn't enjoy it in college and I had to read way too much as far as what I was wanting to do.

I: Let me ask you just as someone who doesn't really like to read, do you think these things (strategies) make it easier to read?

T: Well, I don't know. Because I'm at a point now to where I can do these things just having to do them in college, so from a standpoint of not being able to do versus being able to do it, I don't know. It might, but from my standing, from where I'm looking at reading, it's, I already do a lot of things that we're trying to teach. So, I still don't like to read. So I don't know that would change a whole lot, for someone who hates to read because it's difficult for them. I don't like reading because it's just, a lot of times, too slow.

There were other examples of teacher confidence affecting implementation of the strategies. The teachers themselves diagnosed this as possibly having a direct negative impact on students' understanding. One teacher, who became confident in the latter half of the study, was initially so intimidated by the whole process that she barely spoke at the first teacher support meeting. She took the initiative, however, to pursue resources to assist her – other teachers and the researcher – that resulted in her confidence growing, and eventually she became quite confident and effective with the summarization strategy as evidenced by her students' comments and the classroom observation. Below are excerpts from multiple data sources that articulate her learning journey with the summarization strategy:

They didn't know what to keep and what to delete. I got a wide range of summaries – everything from a half a page to a whole page.

Well, I think being able to sit down with other teachers that are using it and discuss, well, this is happening with my kids (is helpful). He (colleague) has given

me some really good ideas, as well as the ideas that you (principal) have given me. I think having time to just sit down and discuss it (helps).

I think my students have seen my confidence with this process grow, and as they've seen me be a little bit more confident with it, they are becoming more confident with it.

T: The summarization got better every time we did it.

I: Let's talk about that.

T: The first time was rough. The kids, after they deleted the information, went back and rewrote exactly what was left on the paper. So they were all the same.

I: So it was right out of the text?

T: Right out of the text. I got more comfortable with it, and they got more comfortable with it. And probably, oh let's say the third or fourth time we did it, they actually were processing and going, oh, this is a better way to say that. We're getting it, but we're saying it in a more concise way.

I think people are hesitant because, you know, they'll be just like I was. I was kind of intimidated at first. Like this is new to me, but now I see the benefits.

Due to the fact that the summarization strategy was new to many of the teachers, they expressed more concern or lack of confidence about that strategy. Also, it was the one strategy that we asked everyone to implement. They were unsure of themselves, and the process as exemplified by these comments:

Summarization has been a struggle for me in learning how to teach it and in having time to allow myself and the students to get comfortable with the process.

Lack of experience on my part. (response to biggest obstacle).

I'm learning some of this as well as them.

My biggest problem, again is with the summary; it is the hardest one. As a teacher I think I probably have not explained to them as well (as I should) how to pick out main ideas and what is detail, what the fluff is in there first off. I'm having a lot of problem with that.

I'm still not very good at the summarization strategy. And it's going to take practice for me. . .

Some teachers are more comfortable struggling in front of students when they lack confidence with a new strategy, and others do not want to be seen as not knowing how to do it well the first time. This has huge implications on whether a teacher will not only try a new strategy, but will persevere with it until the confidence grows. Commitment to the process of implementation and belief in the benefit of the strategies contribute to the complicated construct referred to as “teacher confidence.” There was not an apparent correlation between the number of years experience a teacher had and his or her willingness to appear “not to know it all” in front of students.

I: Did your own comfort level with the strategies, like understanding the steps and purposes, affect your desire to use them?

T: Definitely. Because the first time that I did this or the first time I tried the summarization strategy, I was kind of following the steps just with the kids. And it kind of makes you a little nervous. When you’re not an expert, you know, you’re supposed to be an expert. If you’re not an expert at that, it kind of makes you a little apprehensive about trying something new in the classroom. But I think the more that you work with it, I think the easier, it just becomes second hand and you can do it a lot more readily. And so I think, I definitely think that teachers in general are not willing to try new things because they kind of get stuck with their old standbys. And so it’s utterly scary to try something new probably.

I: Do you think confidence in your ability as a teacher plays a role in being able to do things like this?

T: I think so.

I: When you were doing it, did you feel like it was part of your instruction or separate?

T: In the beginning, I thought it was separate. Because I was, I really had to, I was really trying to get it implemented. But then after we got more comfortable with it, it just kind of seemed to fall right into the lessons we were having to do.

I: Do you think that your confidence as a teacher affected your ability to implement these strategies?

T: Yeah, I think so. I really do. Because if you don’t feel comfortable with trying something new or falling flat on your face, which you really could do....I mean everybody could go “Ew,” and you could just wipe out like 25 people in class who can’t summarize worth beans. Like what am I going to do? So, it’s like, I mean you have to, you do have to have some sort of confidence.....

Research Question #2b.

What obstacles or challenges do students perceive regarding the use of content literacy strategies?

Obstacles – Students.

Students expressed some of the same concerns with time that teachers did; they felt the strategies took too long in class. Students also articulated that “difficulty with the strategy” was an obstacle. Many students had difficulty learning to differentiate between important and supporting or elaborating ideas in a passage, a skill that is critical to summarizing. Some felt the strategies were just too hard or the gain too minimal, and then a few students admitted they were just too lazy to learn the strategies. This finding is supported by Garner et al. (1984) where they describe students who do not exhibit strategic reading behaviors as possessing an “unwillingness to use strategies.” Obviously, commitment to becoming an independent learner plays a key role in acquiring strong content literacy strategy skills.

The only difficult part was using all the steps and going through the process. I'm used to skimming through it but with the strategy you can't.

It's a lot of work.

It was time consuming, and I know for me I like to get things done fast.

Teacher effectiveness had an impact on students' perceptions of the strategies.

More negative responses were found in the two classes where the teachers struggled with implementing the strategies. In class TS3 mentioned in Chapter IV, the teacher initially introduced the summarization as a rather “laborious” process; he followed the procedures,

but the modeling was too long. He diagnosed the problem himself in the post conference member check. Class TSS2 involved the teacher who did not follow the process as it was presented in the training. This teacher basically did what was discussed in the training as a problem with summarization – teachers asking students to summarize without teaching them how. Clearly, if content literacy strategies are going to be sustained in the classroom, it is important for teachers to work with the strategies long enough to develop skills to assist students in understanding when and how to use them. The literature review found that in order for students to internalize content literacy strategies, they must receive systematic, direct instruction (Durkin, 1978; Simpson, 1984). Both of these teachers have a high desire for their students to succeed with the strategies, but it takes time to develop the confidence and expertise to successfully facilitate the strategies.

The review of the literature found that researchers contend that most students are exposed to some kind of study skill or content literacy instruction during their 12 years of schooling, but it is either not sophisticated or systematic enough for the strategies to be internalized by the students (Durkin, 1978; Simpson, 1984). The content literacy strategy or study learning strategy instruction needed must include a deep understanding of the research behind the pedagogy by the teachers, a desire for students to become independent learners, and a great deal of modeling and guiding activities. This concept validates the findings of this study regarding student responses to benefits and future use of the strategies with two of the classes, TS3 and TSS2.

Summary

Time was perceived by both students and teachers as an obstacle. However, with teachers there were multiple dimensions with the concern over time. Student resistance or lack of student success was also an obstacle. For some teachers, this improved as they became more confident with presenting and facilitating the strategies. Teacher confidence and teacher effectiveness were also obstacles at times during the study and could be long term obstacles if improvement in either area was not achieved.

Research Question #3a

What reasons do teachers give for planning to continue or discontinue the use of content literacy strategies?

Continue or Discontinue – Teachers.

Clearly, most of the participants believe they will continue using the content literacy strategies learned in the study. Eighty-eight percent of the teachers felt the effort they put into integrating the strategies into their teaching was worth the impact of the strategies on students' learning. Seventy-five percent of the teachers indicated that the knowledge and use of the strategies will change the way they teach.

Practice and perseverance were mentioned frequently by teachers as critical to the participants continuing to use the strategies. They acknowledged that to become proficient using the strategies took practice; it just did not occur the first time they tried to use them. Acquiring new skills or strategies will take commitment to the process, and teachers gained appreciation throughout the study for the dedication needed to truly add effective content literacy strategy instruction to their teaching repertoire. This

acknowledgment provides a window into understanding findings from previous studies that purport minimal application of strategies implemented from college content area reading courses (Daisey & Shroyer, 1993; O'Brien & Stewart, 1990). The need for perseverance was a recurrent theme from multiple data sources. The following responses exemplified those feelings:

Just enforcing the repetition. Then they might start doing it on their own. And the only way to get to that point is by repetition.

Practice of the strategies. (listed as an obstacle)

Also, when something doesn't go right, I get frustrated and I just want to go on to something else. Instead of sticking with it, have some persistence and stay with it.

I think this (learning the strategies) was made easier because of practice. Because practice makes things easier. So as we are practicing it, it feels like easier and easier.

Accountability also emerged as necessary for teachers to sustain content literacy strategy instruction in the classroom. Some teachers expressed in the interviews that they probably would not have persevered had the accountability of the study not been there. This was especially true for the summarization strategy, which is more of a "student-centered" strategy versus K-W-L or anticipation guides, which are more "teacher-centered." The teachers favored the teacher-centered strategies, which may be indicative of how they view their role as a teacher – a disseminator of information versus a facilitator of learning. Prior research findings indicate that strategies where students are expected to take a more active and independent role are incongruent with a teacher-centered classroom (Myers, 1992).

When the teachers experienced difficulty with summarization, several admitted that in a normal situation (one where they were not participating in a study with their principal), they would not have continued to use it. This supports Alvermann and Hayes' (1989) finding that even providing teachers with opportunities to reflect on strategies for improving students understanding has not resulted in teachers changing their instruction. It was obvious that patience and perseverance were important to truly integrating the strategies into the teacher's instructional repertoire. This finding also validates the importance of making sure teachers practice the strategy often enough when teaching it to students to work through the "rough transition" of implementation. This "accountability piece" is extremely important for supervisors as they strive to integrate content literacy strategy instruction into secondary classrooms as exemplified by the following interview:

I: If you hadn't been part of this study, do you think you would have persevered being on the first time?

T: I would have given it more than one chance. I don't think I would have seen the success. I don't think I would have pursued it because my kids were so resistant in the beginning.

I: What would make you try something new?

T: Well you know, I think that, being asked by Ms. Maher (principal) to be in a study group can definitely make you change your outlook on using a certain strategy in your classroom. Especially if you know that she is going to come into your classroom or you're going to have to go to follow-ups. You know, you don't want to look like an idiot sitting at a table where you have nothing to do because you haven't been doing it, so you're going to do it. It kind of forces change, you know. So I think that could definitely motivate some people to use the strategies.

I: So do you think if you were, just say, you were at a totally different school and you had an inservice day and I came in and gave that same training. Which of the strategies would have tried and which (strategies) wouldn't you? If you weren't part of this study or part of this school?

T: I would have probably tried it, but after the first try with the summarization, I probably would not have done it again. Not until we, you know, we came back in

here and we had a follow-up. See a lot, and this is the whole thing with staff development for teachers, is that you have these elaborate staff development days and then you never have any follow-up.

But, and then I think you are going to have to have some sort of accountability. You know it's like let's follow up on this. How did you use it? Or I'm going to come, or plan the day you're going to use this, I mean you, even if that's what it takes and some teachers maybe that's what it will take. Which means it's a big headache for that or a write up. . . .But, I think you do need to have some sort of accountability because you are going to meet resistance. Like I've don't this 20 years and I'm not going to do anything else.

Since the percentage of teachers was high that reported the effort to implement the strategies was worth the benefits they observed, the benefits appear to be the biggest variable on whether teachers will continue. Based on the comments mentioned by teachers, however, teachers have to try new strategies multiple times before they are comfortable with them and actually see the benefits. The following teacher comments addressed the issue of whether the effort was worth the benefits of content literacy strategy instruction.

Because once teachers see that their kids are actually thinking. . . .I had a student that just blew me away. He's real quiet, he's not the most persistent student, and he's throwing ideas out like. . . .It makes you step back and go, wow. And once the teachers see that, there's no way the teachers could not do it.

I think it really was the second time. I didn't think it was the first time. But the second time when I did the second one, it was really nice. It really gave me a point at which I could say, okay, Alex understands that information. Or Johnny Sue doesn't understand and maybe I need to get with that person. . . .You can kind of really tell where the learning has taken place, or if they even learned the information to begin with. So I think it was worth it. I think it has some definite value in the classroom.

I really do. I think anything we can do that will help our students learn. I mean anything we can do certainly outweighs the pain, of you know, trying to figure it out.

Research Question #3b

What reasons do students give for planning to continue or discontinue the use of content literacy strategies?

Continue or Discontinue – Students.

Seventy-seven percent of the students responded that they plan to use the strategies in the future. The same themes emerged for students as for teachers: success with the strategies, and practice and perseverance are key to continuing to use the strategies. Students repeatedly talked about the importance of using the strategies often so they would become more proficient with them.

I: What do students need to do in order to ensure that they would use the strategies in the future?

S: I would say remembering and use them more often.

I: So you say use them more often?

S: Yes, cause you don't use them enough, then you don't really remember any of them.

I: What do students need to do in order to ensure that they would use the strategies in the future?

S: Um, I guess just everybody being taught the strategy. Because, not everybody is aware of it. And maybe teachers kind of, um, how should I put this, like reiterating I guess. . . .always reminding us that this is an option.

Summary

The majority of participants in the study plan to continue using content literacy strategies in the future. Issues surrounding this continuance were practice and perseverance, and teacher accountability for the implementation of the strategies. Teacher confidence, as noted in the section on obstacles, can also impact whether teachers continue using the strategies in the classroom. This, in turn, has huge implications for

students continuing to use the strategies since teacher modeling was cited as helpful by a large number of students in the study.

Additionally, teachers who modified the step-by-step process used in the summarization strategy after observer input were more successful with it. The modification was suggested to one of the level 2 teachers after an observation where it took him 45 minutes to model using the strategy. He appeared to be rewriting sentences to assist in rewriting the summary. The suggestion by the researcher after the classroom observation was to shorten the rewrite to include just key words or phrases from which the summary could be written. Other level 2 teachers tried this after hearing the suggestion discussed in the teacher support meetings. This willingness to analyze the effectiveness of a strategy, and then make necessary changes to improve it also was found to be important to successful implementation. This impacts student success which is a key factor or reason given by teachers for continuing the use of content literacy strategies.

Research Question #4a

What support or experiences are needed for teachers to continue to use content literacy strategies?

Support – Teachers.

Teachers and students both need support to sustain the usage of content literacy strategies. The support that teachers feel they need to sustain implementation of content literacy strategy instruction fell into three categories that include training, collegial support, and administrative support. The area the teachers felt helped them the most was the dialogue at the teacher support meetings. They found it to be very helpful to hear the

successes and struggles of other teachers as well as ideas to improve what was occurring in the classroom. Although this discussion was time consuming, there was consensus that it was extremely beneficial in helping them through the doubts and frustrations that accompany implementing something new. This finding supports Dynak's (1997) study with high school math teachers who reflected in journal writing their experiences with a content area reading course. One of the main findings from Dynak's study was the importance in providing opportunities for teachers to discuss how the strategies they were studying could be adapted and used in their classrooms. Time to discuss is extremely important to successful implementation.

The teachers also suggested that observing another teacher teaching the strategies in the classroom, which was not done in the study, would have been helpful. They found the follow-up to be critical to sustaining the effort required to implement and to refine the strategies. Below are comments from multiple data sources for support in the three areas of training, collegial support, and administrative support.

Training:

I would really like to see that again (training).

More inservice on the strategies to reinforce them.

Additional, or follow-up training.

I think the training was good.

Collegial Support:

Round table discussion of success and any adaptation made.

Teacher to teacher suggestions through trial and error.

Having the chance to talk with other teachers about their successes and pitfalls.

Reflection with other colleagues that went through the training to discuss-process how they are doing.

Getting to go into classes with other people. I would like to go and visit another teacher's classroom and see how they do it. To keep teachers feeling like they're not out there fighting the battle by themselves.

I think it is extremely useful to dialogue in this room.

I think if they (new teachers to the strategies) could hear how well it went and how well our students eventually responded to it, it would encourage them to pursue it.

Case study or video of classes where they (the strategies) have been successfully implemented.

Administrative Support (administrator or department chair):

Observations.

I think Sheila's (principal) enthusiasm for it made us all believe that it was worthwhile. So I think the administration has a lot to do with teachers' perseverance of new things.

Seeing that something is valued through the administrator or the department chair can, I don't know how to say this, can make you see the importance of trying whatever strategy or whatever you're doing in your classroom. Like I probably would have never tried summarization strategy because I didn't really know how it could impact my classroom or I didn't really have any information on that. So seeing that Ms. Maher (principal) had value in it and she had enough value in it where she pulled you out of class and then had sessions with you. . . .And so that kind of transfers over okay? Well let me try this because it does hold value and if the administration feels that it holds value, then maybe we need to be implementing that in our classrooms.

Two teachers mentioned support was needed in the form of materials. For example, instead of teachers "reinventing the wheel," they could share materials

generated for content literacy strategies. One of the teachers was a first year teacher and the other teacher was a teacher who struggled to implement the strategies. A typical response to “support needed” was as follows:

I was thinking hard copies of stuff. Either sharing what we’ve already generated as far as just the paperwork. Instead of me having to take time to generate my own anticipation guide. You know and even eventually get to the point where we have an entire folder of all of those strategies for the entire textbook and we use what we want and what we don’t, we don’t use.

Although there were three areas of support mentioned by teachers, there was a preponderance of evidence that the collegial support was considered the most important by the teachers. Teachers helping teachers integrate the content literacy strategies into their instruction through a variety of vehicles (observations of others, dialogue, feedback from peer observations, etc.) was an overriding theme regarding support needed to sustain the strategies. Teachers actually using the strategies bring a certain credibility to the discussion, and that was evident through their responses.

Research Question #4b

What support or experience are needed for students to continue to use content literacy strategies?

Support – Students.

For students, the biggest support factor is probably the teacher. Their comments validate that the teacher is critical for many students to learn these strategies. Direct instruction and providing sufficient detail for students to master using the strategy was viewed as important by the students. This is a finding supported in the literature review (Durkin, 1978; Simpson, 1984). The Pre Study Student Survey and the structured student

interviews indicate that the students in the study did not possess many learning strategies prior to the study to assist them when encountering difficult text. The strategy mentioned most often from both data sources was “reread.” The students mentioned on the Post Study Student Survey what the teacher did to help them learn the strategy. Most of these comments were about teacher modeling—explaining, showing examples, etc. Some comments supported the notion of teacher encouragement as important to students learning the strategies. Examples of students expressing this are listed below:

Doing them with us before we have to do it on our own.

Showed examples and explained.

Yes, explain in full detail each and everything to do.

Practice them over and over.

I: What did the teacher do to help you understand the learning strategies?

S: I think mainly she, she told us what she was going to do first and explained it to us. Then we went through it and when we got done, we reviewed what we had done already. So, we were really familiar with what we were doing and what we were going to do and what we had done.

So like she didn't make things harder for us, you know. She was like, “It's very easy.” And she helped us a lot. . . .she like gave us guidance for everything from the beginning.

I: What do students need to do to ensure they use these strategies in the future?

S: Um, I think it all depends on teachers. Cause I think teachers should tell them to use them and they'll use it.

I: So it's important that the teacher require these strategies?

S: Yeah.

Two out of 12 students during the structured student interviews indicated that teachers had taught them learning strategies prior to the study. Six indicated that teachers had not taught learning strategies prior to the study, and the other four either gave an

unclear response or were not asked the question directly. Most of the students indicated that when teachers have asked them in the past to summarize information, they simply said to “summarize it.” This is consistent with findings in a 1986 article by Hill on summarization. The teacher is the key support factor in students acquiring these strategies. One of the teachers articulated this in a teacher meeting:

I think that most of these things that we are doing aren't things that your normal kid just picks up on the way side. I think that our impact is pretty big, and it's true, as we become more comfortable we're going to instill that in our kids. But most of our kids come in, they've heard the word summary, they've done a couple, but they don't really understand the process.

Summary

There was consensus that support is needed for teachers to effectively implement and to sustain content literacy strategies into secondary social studies and science classrooms. Teacher support included training, collegial support, and administrative support. The study validated key components of the staff development model developed by Wood, Thompson, and Russell (1981) known as the RPTIM model (Readiness, Planning, Training, Implementation, and Maintenance). Specifically, the Implementation Stage and the Maintenance Stage address the support needed to ensure the transfer of learning to the classroom setting to include multiple forms. The feedback from teachers in this study indicates that they need those multiple sources of support. Communication, which is emphasized in the Implementation Stage of the RPTIM model, was also emphasized by the teachers as critical to successful implementation of the strategies.

The last stage of the RPTIM model, Maintenance, is often an overlooked component of a staff development program (Wood et al., 1993). Teachers in the study

indicated repeatedly that if they had not had the “accountability” of the teacher support meetings and sustained support and attention for 6 weeks, many would have abandoned using the strategies. Thirty-eight percent or 6 out of the 16 teachers in the study indicated that more follow-up would have made the training more effective in helping prepare them to teach the strategies. The follow-up is extremely important for sustaining content literacy strategies in the social studies and science classroom.

Student support need revolved mainly around teachers. Students need teachers to provide direct instruction on how, when, and why to use content literacy strategies. They need to practice the strategies repeatedly until they become skills they have mastered. One student indicated he really needed one-on-one attention from the teacher when learning strategies such as summarization. He was one of the students who participated in a structured interview, identified by his teacher as a student who struggled with learning the strategies. Therefore, students need multiple forms of support just as teachers need multiple forms of support to sustain the use of content literacy strategies.

Recommendations for Practitioners

Several “learnings” occurred as a result of this study that have implications for successfully implementing and sustaining content literacy strategy instruction in secondary social studies and science classrooms. Many of the “learnings” were supported in the literature review, but not all of them. For some, there is an overwhelming preponderance of evidence to support the recommendation. For others, a few extremely insightful responses warranted mentioning in the recommendations.

1. The benefits of content literacy strategies are worth the effort of learning and using them in the secondary classroom; therefore, teacher training in this area should be pursued.
2. Teacher knowledge and understanding of when and why to use content literacy strategies are key to successful implementation and must be included in teacher training.
3. Administrative value and commitment of content literacy strategy instruction are vital and must be present to sustaining the use of such strategies in the secondary classroom.
4. Teacher perseverance and commitment are critical to the success of integrating content literacy strategies into the classroom. Dialogue about this commitment should occur during training and throughout implementation.
5. Teacher to teacher support needs to be well articulated in the implementation of content literacy strategy instruction. Round table discussion support groups are essential to the process.
6. Well thought out follow-up plans are critical in providing enough support to assist teachers through the beginning trials of implementing and sustaining content literacy strategy instruction. Multiple forms of support such as meetings, collegial interaction, and supervisory support must occur for an extended period of time after the training is complete.
7. Teachers must provide direct instruction and modeling of content literacy strategies because most students do not acquire the strategies on their own.
8. Teacher confidence should be a factor that content literacy strategy trainers plan to address in staff development.

9. Teacher acquisition of conditional and procedural knowledge regarding content literacy strategy instruction takes time. Administrators and teachers must be mindful of this finding.

10. Accountability needs to be a component of any content literacy strategy implementation plan.

Recommendations for Further Research

Content literacy strategy instruction has been supported by researchers for decades and proven to be beneficial in assisting students in learning, yet these strategies are not used in all secondary classrooms. Continual research efforts are needed to ensure the integration of the strategies into secondary teachers' instructional repertoire. The following questions and issues merit such research.

1. How knowledgeable is the average secondary administrator regarding content literacy strategies? What impact does administrator knowledge and understanding have on sustaining initiatives to implement content literacy strategies in the secondary content classroom?
2. What additional support, supervision, or training is necessary for teachers who remain resistant to content literacy strategy instruction after initial support, supervision, and training?
3. Is there an instrument that can measure teacher confidence when implementing something new in the classroom, and how can their confidence level impact successful implementation? What can be done to increase teacher confidence or efficacy?

4. Is there an instrument that can measure a teacher's positive or negative feelings about reading in general that would correlate to either embracing or resisting content literacy strategies?
5. Investigating teachers' use of the course textbook in secondary classrooms and how that use impacts content literacy strategy instruction is needed.
6. Further assessment is suggested regarding how students use content literacy strategies to help them gain learner independence and comprehend information better over a period of years. Longitudinal studies where students are taught the skills at middle school or early high school and then asked 4 to 5 years later how often they used the strategies to help them learn would be beneficial.
7. Longitudinal studies are needed with teachers who have received content literacy strategy training in the past to assess their perceptions about the strategies two or three years after the training.

Final Comments

Effective content literacy strategy instruction is worth the effort. The strategies undeniably assist students in not only understanding content better, but also in becoming more independent learners – a long sought after goal of secondary educators. The effort, however, is considerable, even formidable. No quick initiative will withstand the rigorous demands such an effort requires.

This study validated the need for students to receive an explicit direct teach of content literacy strategies to acquire proficiency using them. Teacher training must include content specific examples and be ongoing. Bulgren and Scanlon (1998) support

the notion that training for teachers to develop strategic readers must be done in conjunction with content teaching. Additionally, one-shot training sessions will fall woefully short of successful implementation. Teachers' acquisition of a deep knowledge and understanding of when, why, and how to use content literacy strategies requires time, reflection, patience, and unwavering commitment. An inordinate amount of support using multiple sources (collegial, administrative, materials) is critical and must be present until the teacher has fully mastered the knowledge, understanding, and implementation of the strategies. Accountability was viewed as essential for teachers to "stay the course" through the difficult period of learning new teaching practices, building self confidence, and adjusting current teaching practices to include content literacy strategies.

Additionally, all educators, administrators and teachers alike, must believe their greatest gift to students is to make them life-long independent learners, not just provide information to them. Information in the future will be easily acquired through various technological vehicles; however, strategies to assimilate and understand the information will always be needed by learners. A great deal of rhetoric has been devoted to the notion of a "student-centered" classroom where the students are the workers and the teacher is the facilitator. The truth of the situation, however, is that the rhetoric has not become reality in many of today's secondary classrooms, and too many teachers are the main attraction day in and day out. In order for content literacy strategies to truly become a natural piece of a student's education, the shift from "teacher-centered" classrooms to "student-centered" classrooms must occur. This concept is supported in the literature by Vacca and Vacca (1993).

Teachers' view of the textbook is another important piece to understanding teachers' and students' value of content literacy strategies. Ratekin et al. (1985) found that when the textbook is used to validate information rather than as a learning tool, then content literacy strategies may not be perceived as useful or necessary. The researcher was surprised by the minimal amount of textbook reading that was required of students. When teachers introduced the summarization strategy, many of them used handouts, not the text, to teach the strategy. This is an area worthy of investigation since students who pursue post secondary educational opportunities will most assuredly be required to read and comprehend from a text independently.

Lastly, like teachers, secondary administrators must possess the same deep knowledge and understanding of content literacy strategy instruction before such instruction will become a mainstay of an educational experience in the nation's secondary classrooms. Principals, specifically, must value the strategies and insist that teachers and students demonstrate a high level of proficiency using them to ensure that initial efforts to implement content literacy strategies are sustained. As we search for answers regarding why strategies that have been proven beneficial to students are not systematically taught in our secondary schools, perhaps we need to search for the missing piece to this conundrum in the principal's office.

APPENDICES

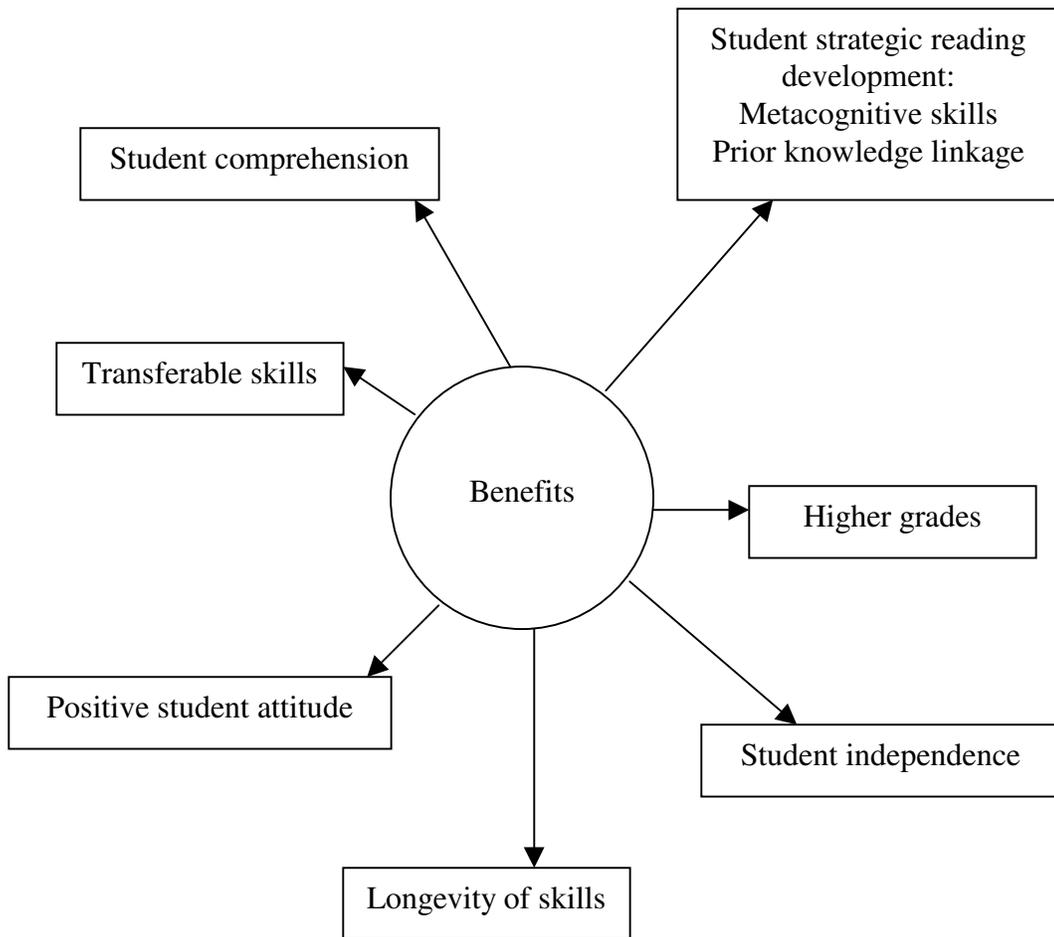
APPENDIX A
TIMELINE

Timeline

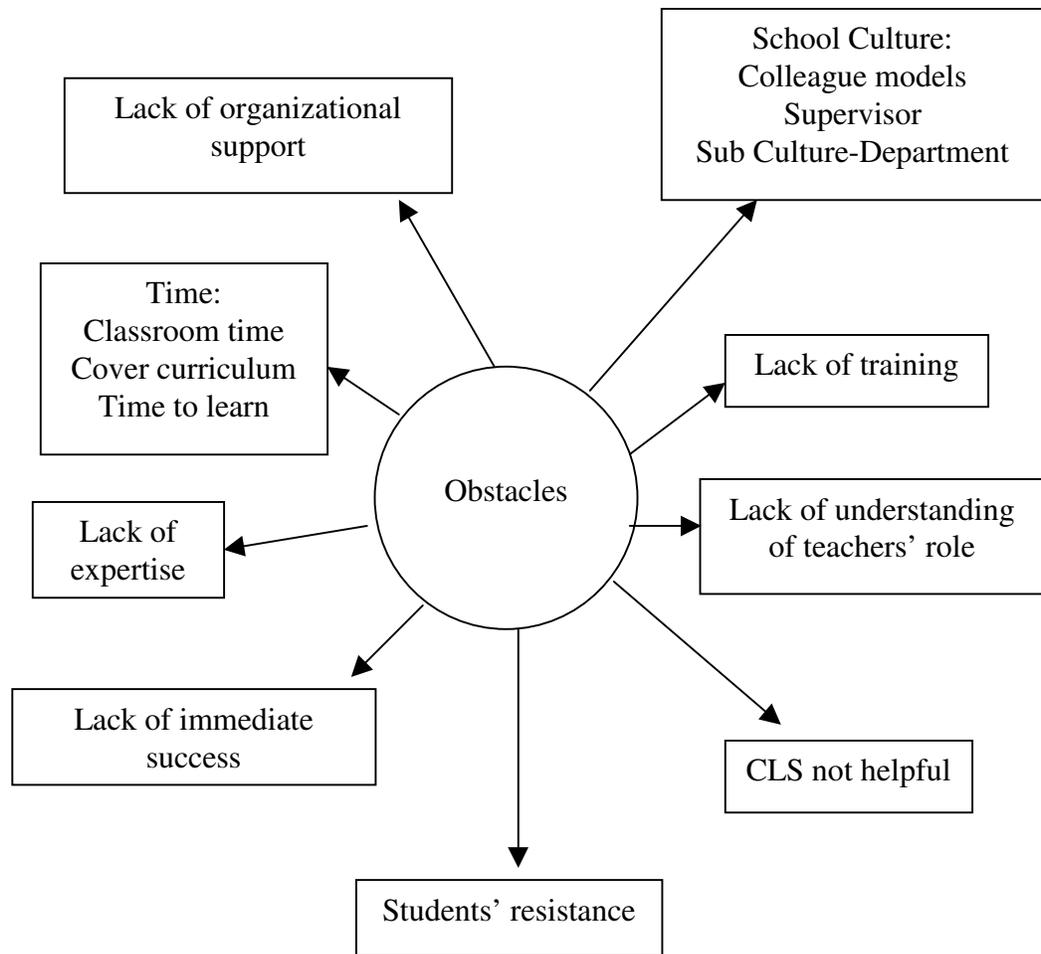
January 3-7	Secure district permission from Superintendent
January 14	Submit Application for Approval of Investigation Involving the Use of Human Subjects
January 28	Secure permission for the study from Office of Sponsored Projects
<u>Phase I.</u>	
February 7	Mail parent notification letter
February 8	Meet with teachers and discuss the study
February 10	Meet with students and discuss the study
February 11	Secure teacher permission
February 14	Administer student pre study survey
February 16	Teacher pre study survey due to researcher
<u>Phase II.</u>	
February 16 & 17	Conduct teacher training
<u>Phase III.</u>	
February 20 – April 7	Implement content literacy strategies Observe each teacher teaching one strategy Meet with teachers to discuss issues regarding the implementation of the strategies on March 7 and March 30
<u>Phase IV.</u>	
April 10 – 14	Administer post study surveys
<u>Phase V.</u>	
April 17 – 19	Conduct Structured Interviews with teachers and students

APPENDIX B
CONCEPTUAL FRAMEWORK
OBSTACLES & BENEFITS OF CONTENT LITERACY STRATEGY INSTRUCTION
FROM TEACHERS' AND STUDENTS' PERSPECTIVES

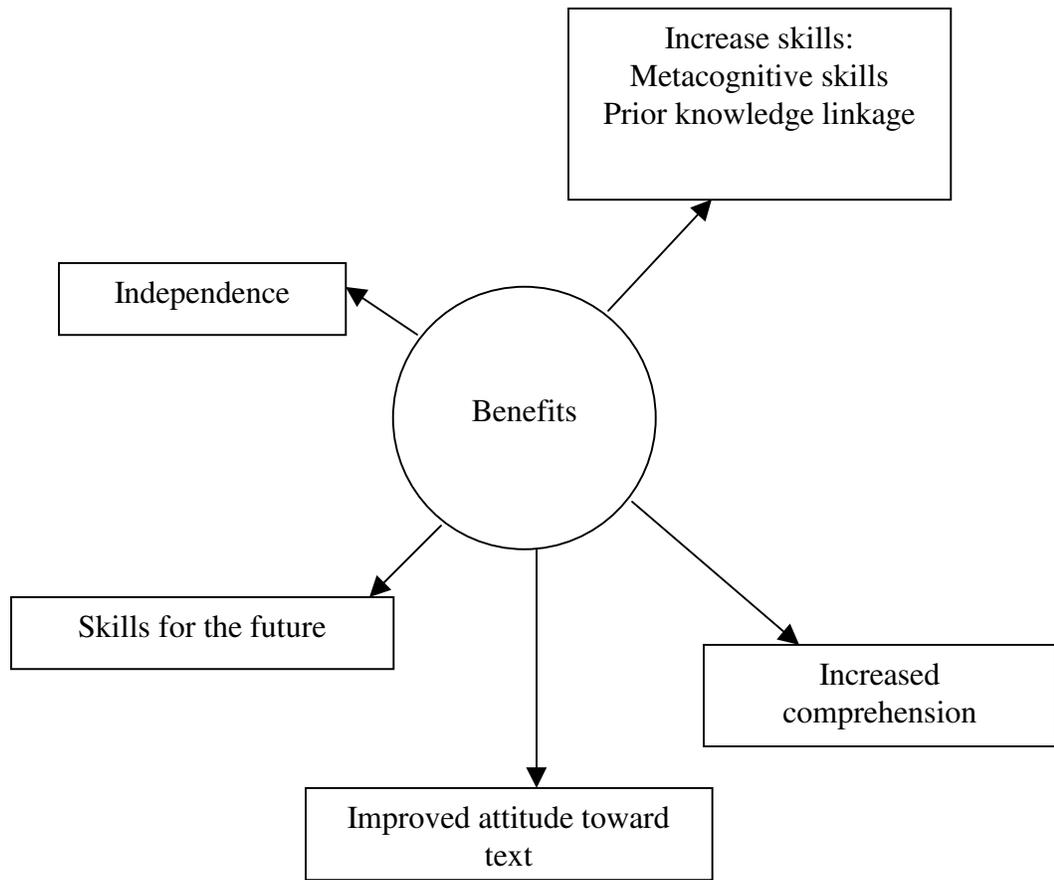
Conceptual Framework
Benefits of Concept Literacy Strategy Instruction
Teachers' Perspective



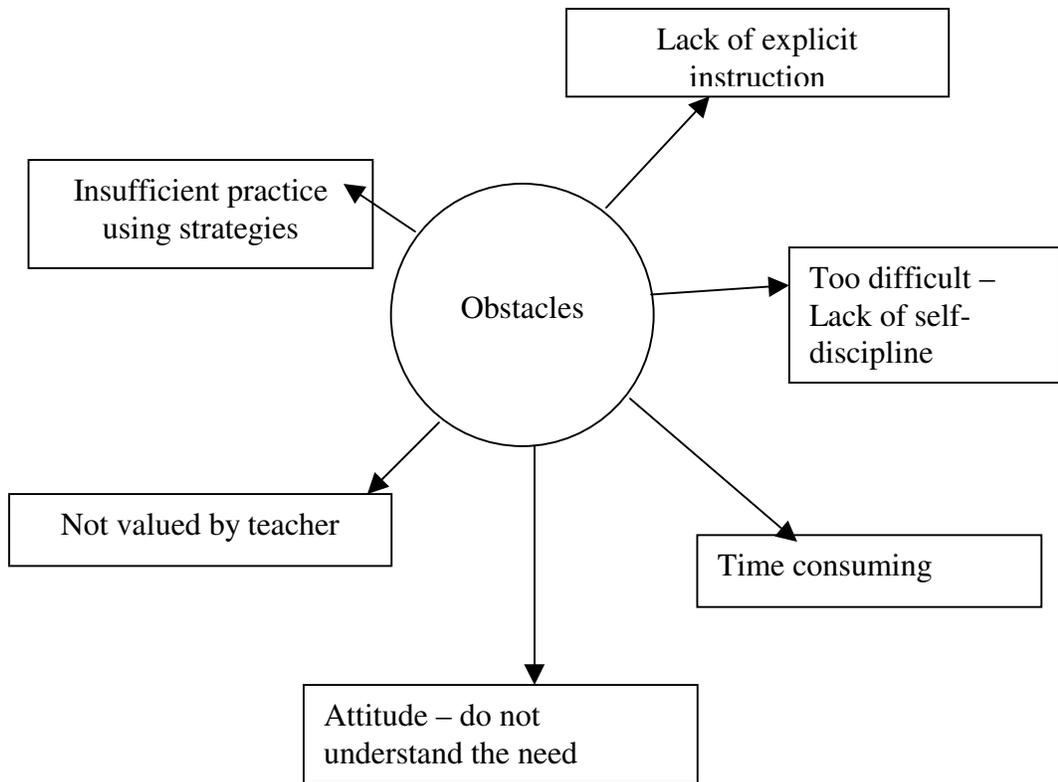
Conceptual Framework
Obstacles of Concept Literacy Strategy Instruction
Teachers' Perspective



Conceptual Framework
Benefits of Concept Literacy Strategy Instruction
Students' Perspective



Conceptual Framework
Obstacles of Concept Literacy Strategy Instruction
Students' Perspective



APPENDIX C
PRE AND POST STUDY TEACHER SURVEYS

Pre Study Teacher Survey

A content literacy strategy is defined as a systematic plan consciously applied and monitored to improve one's performance and learning in a content area subject.

1. What content literacy strategies can you name or describe?
2. Which content literacy strategies do you currently use in your teaching? After each one, briefly explain what you understand to be the purpose of the strategy.
3. In what ways do you assist students who appear not to be comprehending text or written materials?
4. What is your perception of the areas students struggle with the most in understanding your content information?
5. What percentage of your students would you consider to be strategic, independent learners (i.e., can process most or all text information with little or no assistance from you)?

Post Study Teacher Survey

1. When and why would you use the following content literacy strategies with students?
K-W-L, Graphic Organizers, Anticipation Guides, Summarization
2. Did the strategies increase student learning and-or understanding of concepts-information? Explain.
3. Will the knowledge and use of these strategies change the way you teach?
4. What challenges or obstacles did you face implementing the strategies in your classes?
5. Was the effort you put into integrating the strategies into your teaching worth the effects of the strategies on students' learning? Why or why not?
6. Which of the strategies will you continue to use after the study has ended? Why?
7. In your pre study survey you stated that _____ was an area with which your students seem to struggle in particular. Do you feel the strategies you learned were effective in enhancing students' abilities in that area?
8. How effective was the training in preparing you to teach these strategies? What would have prepared you better?
____ longer initial training
____ more follow up
____ more strategies
____ different strategies
____ other-please explain
9. List support that will help you improve and sustain the use of content literacy strategies in the classroom.

APPENDIX D
PRE AND POST STUDY STUDENT SURVEYS

Pre Study Student Survey

1. What is a learning strategy?
2. What do you do when you have trouble understanding the textbook?
3. List the subjects in which you learn easily or with little help from the teacher or others.
4. List the subjects you could use some help with.
5. A. If you read a chapter in your science textbook, how confident would you feel about being able to answer questions correctly about the information in the chapter?

Very Confident

Not Confident

5

4

3

2

1

B. If you read a chapter in your history textbook, how confident would you feel about being able to answer questions correctly about the information in the chapter?

Very Confident

Not Confident

5

4

3

2

1

7. Do you recall any teacher ever teaching you any strategies to help you learn better? Explain.

Post Study Student Survey

Grade _____

Course _____

1. Explain when and why you might use these strategies:

K-W-L

Graphic Organizers

Summarizing

2. Did any of these strategies help you understand science or social studies better? If yes, which ones?
3. Has your knowledge and use of these strategies made you more confident in your classes? Explain.
4. What was difficult about learning and using the strategies?
5. What has the teacher said or done to help you the most in learning these strategies?
6. Are you using the strategies in other classes? If yes, which classes? Why?
7. Which strategies will you continue to use this year and in future years? Why?

APPENDIX E
CONTACT SUMMARY FORMS FOR
CLASSROOM OBSERVATIONS
TEACHER MEETINGS

Teacher Support Meetings
Contact Summary Form
Classroom Observation

Observation Date:

Today's Date:

Time:

Coder:

Teacher:

Member Check Date:

1. What statements did the teacher make to assist students in understanding why, when, & how to use the strategy?
2. What student behaviors indicated understanding or lack of understanding about using the strategies?
3. What teacher and student behaviors communicated their attitude (positive or negative) toward the strategy?
4. How much time was devoted to explicit explanation? How much time was devoted to working with the strategy? What did students do while working with the strategy? What did the teacher do while students were working with the strategy?

Contact Summary Form
Teacher Meetings

Mtg. Date:

Today's Date:

Time:

Coder:

Attendance:

of Sci.:

of S.S.:

1. What clarifying questions did teacher ask?
2. What obstacles or frustrations were they feeling?
3. What success or positive experiences have they had?
4. What support do they need to help them improve their skills?
5. What ideas do they have for embedding the strategies into their instructional repertoire?
6. What support or success is needed for continual use of CLS?

APPENDIX F
STRUCTURED INTERVIEW INSTRUMENTS
TEACHER AND STUDENT

Teacher Structured Interview

00. What's the purpose for content literacy strategies? Why use them?
 0. Which strategies were new to you?
 1. Which strategies did you use?
 - how often?
 - in what way (i.e., teach kids how or actually integrate into instruction)?
 - in class? as homework?
 - did you use the book? other?
 2. Which strategies were a good fit for your content?
 3. Which were a good fit for your students' needs?
 4. Did your own comfort level with the strategies and their purposes affect your desire to use them? Success?
 5. How did teaching and using the strategies affect your usual instructional routine?
 6. How does the opinion of the school's leadership (principal, department chair) affect your implementation of the strategies?
 - 6.5 What were the benefits? Obstacles?
 7. Do the benefits of content literacy strategies outweigh the obstacles? Why?
 8. What could we do to make the training better?
 9. If teachers are to make content literacy strategies part of their instruction, what kinds of support-assistance do they need?
 - 9.5 If you hadn't been in the study, would you have done it (implemented the strategies)?
 10. What else would you like to tell me?

Student Structured Interview

1. Which strategies did your teacher use?
2. Did the strategies you learned in social studies or science help you learn? Why or why not?
3. Were the strategies easy or difficult to learn how to use? Explain.
4. What did your teacher(s) do to help you understand how to use the learning strategies? Was there anything he-she did or said that was particularly helpful?
5. What strategies did you use before the study to help you learn? When teachers asked you to summarize before the study, did they show you how to summarize?
6. In your opinion, what would motivate students to use these strategies often? What are reasons students would not use these strategies?
7. Why do you think so many students get to college and need to be taught these learning strategies to help them be successful?
8. Are there other things your teachers need to do to help you become better at using these strategies?
9. Have you used these strategies in other classes? Which class(es)?
10. What do students need to experience to make them want to use these strategies in the future? Will you use these strategies in the future? Which ones?

APPENDIX G

STEPS OF THE SUMMARIZATION STRATEGY

The Summarization Strategy

- Read the entire text; pay attention to “big” ideas
- Ask yourself: What is-are the “big idea-s”?
- Delete or cross out unrelated or trivial information
- Look for related ideas and repeated information to group together
- Ask yourself: How can I say this in the shortest, most meaningful way?
- Write. Start with an umbrella sentence which introduces the ideas.
- Reread and rewrite your summary to make it long enough to convey the message without losing meaningful information.

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