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THE EFFECTS OF THE COGNITIVE STRATEGY INSTRUCTION IN

WRITING CURRICULUM (CSIW) ON EXPOSITORY WRITING

SKILLS AND METACOGNITIVE KNOWLEDGE OF THE WRITING

PROCESS IN LEARNING DISABLED STUDENTS

by

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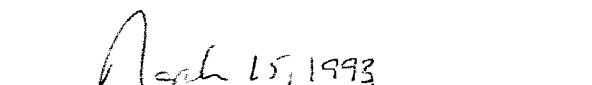
THE EFFECTS OF THE COGNITIVE STRATEGY INSTRUCTION IN WRITING CURRICULUM (CSIW) ON EXPOSITORY WRITING SKILLS AND METACOGNITIVE KNOWLEDGE OF THE WRITING PROCESS IN LEARNING DISABLED STUDENTS

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ABSTRACT

This study investigated the effects of the Cognitive Strategy Instruction in Writing (CSIW) Curriculum on the knowledge and skills in writing expository text structures and metacognitive knowledge of the writing process and writing strategies in a group of learning disabled students (N=12). The CSIW curriculum is a writing intervention, based on the principles of instructional scaffolding. Students were taught writing process strategies and to write expository text structures through reciprocal dialogue, explicit instruction and procedural facilitation. Results indicated significant improvements in the students' writings of descriptive report and compare/contrast papers. The improvement in writing was accompanied by increased metacognitive knowledge of the two text structures, particularly in their ability to articulate how the text should be organized. There was also increased awareness and knowledge of the writing process, and of writing process strategies at posttest. Finally, students reported more positive expectations for success when writing and made more attributions related to strategy use and effort. Maintenance testing six weeks after the conclusion of the study indicated in the metacognitive interview that the students maintained learned text structure knowledge, and their writing performance skills.

For my family.

Acknowledgments

Thank you to my senior supervisor, Dr. Bernice Wong, for sharing her knowledge and guiding me through this exercise.

Thank you to my family for their understanding as I worked through this endeavour, with a special thank you to my husband, Neville, for all of his patience and support.

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CHAPTER I

Introduction

Writing is a complex cognitive task. Flower and Hayes (Flower &

Hayes, 1980; Hayes & Flower, 1980; Hayes & Flower, 1987) describe writing as a

goal directed, complex and dynamic problem solving process. This process is

accomplished through the integration of three mental processes; planning,

writing and revising. While these processes can be accomplished in stages,

they tend to occur in interactive and recursive patterns in skilled writers.

The Writing Process and Skilled Writers

Skilled writers possess both task specific knowledge as well as

metacognitive awareness and strategies to proceed through the writing

process effectively. For children to become effective writers, they need to

have adequate declarative knowledge of text structure and must learn and

develop a number of procedural skills and strategies. Besides the lower order

skills and conventions, students must be able to: (1) generate ideas for their

topic, (2) organize those ideas to fit the frame or text structure they are using,

(3) be aware of the needs of their reading audience, and (4) be able to revise

and reformulate their goals and plans as needed (Bereiter, 1980; Greenberg,

1987). Further, students must also be able to produce language without

immediate feedback and input from a conversational partner or listener, as is the case in oral discourse. This requires the student to be self-regulated and metacognitive, and to do so independently (Graham & Harris, 1989).

Writing and Learning Disabled Students

Learning disabled students have a number of difficulties with written language. Many learning disabled students do not have the mechanics and conventions of writing developed to automaticity. They also tend to demonstrate difficulties with generating content, producing shorter compositions than their normally achieving peers (Nodine, Barenbaum & Newcomer, 1985). Learning disabled students have poorly developed understanding of text structure, particularly expository structures, and poor metacognitive awareness and knowledge of the writing process and strategies (Barenbaum, Nodine & Newcomer, 1987; Englert & Thomas, 1987; Englert, Raphael, Anderson, Gregg & Anthony, 1989; Vallecorsa & Garris, 1990; Wong, Wong & Blenkinsop, 1989). In the context of the writing process, learning disabled children have been described as being "teacher dependent" (Englert, 1990; p.194) in that they demonstrate neither strategic, self-regulatory behaviors, nor self-talk to help them as they work through a writing task. Clearly, instructional approaches which develop task specific knowledge, metcognitive knowledge and understanding of the writing process and of self-regulatory strategies are needed for learning disabled students.

Components of Effective Writing Instruction

The current educational zeitgeist casts learners as active participants in the learning process. This has resulted in a reconceptualization of instructional practices and methods in most curricular areas, with a particular impact on reading and writing instruction. Traditionally, instruction in writing consisted of teaching a series of isolated skills which emphasized the mechanical and grammatical aspects of language, and the regurgitation of previously studied material (Applebee, 1984; Bos, 1988; Wong, in press). While lower order skills such as handwriting, grammar and spelling are necessary for effective writing (Graham & Harris, 1988; Isaacson, 1987), there has been a shift from this approach to one with a focus on writing as an intentional and social process (Englert, 1992). Such an approach develops writing skills through an emphasis on the processes writers use to constuct meaning and demonstrate their thinking (Applebee, 1984; British Columbia Ministry of Education, 1990: Bos, 1986; Englert, 1990; 1992; Resnick, 1987).

Components of effective writing instruction include providing: clear objectives, models of good writing, explicit instruction and modelling of strategies, guided practice with feedback, and opportunities for student interactions with teachers and peers through dialogue (Englert, 1990; Hillocks, 1984; Isaacson, 1987). These components are part of what Hillocks (1984) termed the environmental mode of written language instruction. The

environmental mode casts both teachers and students in active roles and allows for principles of instructional scaffolding to be part of the instruction.

Langer (1984) contends that instructional scaffolding should be the preferred mode of literacy instruction in our schools. The positive effects of scaffolded instruction and shared dialogue have been demonstrated with reading comprehension in the studies of Palinscar and Brown (Palinscar, 1986). By providing supports or scaffolds through modelling, shared dialogue, explicit instruction and procedural facilitation, adults facilitate children's acquisition of knowledge and strategies by gradually increasing the demands on students to take control of and responsibility for their learning.

Instructional Practices with Learning Disabled Students

Research studies have shown that writing instruction for learning disabled children tends to be characterized by an emphasis on pencil-paper tasks, a lack of instruction in writing process strategies (Christenson, Thurlow, Ysseldyke, & McVicar, 1989; Englert, 1992; Isaacson, 1987), and inadequate instructional time allocated to the teaching of written language (Christenson et al., 1989; Isaacson, 1987). Isaacson (1987) suggests that the lack of written language instruction for exceptional students is the result of two misconceptions. The first is that writing is an extension of oral language and,

as such, does not need to be formally taught. The second is that writing

should not be taught until students show some proficiency in reading.

Englert (1992) found that teachers of learning disabled students felt their

students lacked sufficient lower order skills and the maturity to deal with

expository writing and writing process strategies. Despite having had in-

service training in teaching writing through a process approach, many

teachers continued to focus on, and emphasize the mechanics of writing

rather than the strategic and cognitive aspects. Their instruction was

respresentative of what Hillocks (1984) calls the presentational mode which

is characterized by teacher determined objectives taught mainly through

teacher led discussions and lectures. There is neither modelling, nor

opportunities for shared dialogue between teachers and peers. Feedback

comes primarily from the teacher.

The Cognitive Strategy Instruction in Writing Curriculum

Englert, Raphael and their colleagues (Englert, 1990; 1992; Raphael &

Englert, 1990) have developed a writing curriculum, Cognitive Strategy

Instruction in Writing (CSIW). The CSIW curriculum, an example of the

environmental instructional mode, is a socially mediated intervention,

based on principles of instructional scaffolding and includes shared dialogue,

modelling, explicit instruction and procedural facilitation. CSIW was

designed to be used in regular classrooms and to support teachers in teaching

both cognitive and metacognitive strategies of the writing process. CSIW was also intended to make different forms of expository text structure visible to students (Englert, 1990; Raphael & Englert, 1990) and to induce in students an awareness and understanding of the writing process and strategies. The CSIW program procedure is described in detail in chapter 3.

Components of the CSIW curriculum have been tested with a group of 140 low to high achieving intermediate aged students. It proved to be effective for improving in students: (1) knowledge of text structure for the purpose of planning, organizing and revising, and (2) awareness of audience and the processes used in writing (Raphael, Englert & Kirschner, 1989). More recently, Englert, Raphael, and Anderson (in press) have conducted field based research with the CSIW curriculum.

The studies of Englert and her colleagues have clearly demonstrated the positive effects of the Cognitive Strategy Instruction in Writing curriculum with both learning disabled and non learning disabled students. The learning disabled students involved in the year long intervention study showed improvements over peers in expository text organization as well as changes in cognitive and metacognitive processes related to their knowledge about writing (Englert,Raphael, & Anderson, in press). Published reports of their studies have, however, indicated a relatively small sample of learning disabled students. Clearly more research is in order on the process writing

approach for learning disabled students. The current study was designed with this purpose in mind, by studying the effects of the <u>Cognitive Strategy Instruction in Writing</u> curriculum on a sample of twelve learning disabled students. It was hypothesized that, through writing instruction which emphasizes the writing process and which employs instructional scaffolding procedures, learning disabled students would show improvements in their writing of expository text, in their awareness and knowledge of the writing process and use of writing process strategies.

Research Questions

This study undertook to examine five questions. The first four questions examine the efficacy of the CSIW curriculum training on students' writing, knowlege of text structure, metacognitive knowledge and use of strategies for planning and organizing, and awareness of the writing process and revising/editing strategies. The fifth question was designed to determine if the CSIW curriculum effected any change on students' self-efficacy and attributions of self competence for writing.

1. What was the effect of CSIW intervention on students' writing of expository descriptive report and compare/contrast passages?

2. What was the effect of CSIW intervention on students'
   metacognitive knowledge of text structure organization
   for descriptive report and compare/contrast structures?

3. What effect did CSIW have on students' metacognitive
   knowledge and use of prewriting strategies?

4. How effective was the CSIW curriculum in inducing
   metacognitive awareness of purpose, audience and editing
   strategies in a group of learning disabled students?

5. Did the CSIW effect changes in students' self-perceptions
   of competence and related attributions for writing?

CHAPTER II

Review of the Literature

This chapter will review the literature that relates to the questions posed in Chapter One. In the first part of the chapter the components of the writing process and knowledge required to be an effective writer will be examined in more detail. In the second part the literature dealing with the knowledge and characteristics of learning disabled students in the context of the writing process will be reviewed. Following that, instructional issues and the Cognitive Strategy Instruction in Writing curriculum will be reviewed.

Components of the Writing Process

The first step in the complex task of composing involves planning. This requires writers to have knowledge of both why and for whom they are writing (Flower & Hayes, 1987; Englert & Raphael, 1988; Odell, 1980). Idea generation, which it has been suggested is "the heart of the planning process" (Scardamalia & Bereiter, 1986) follows. This means that writers must be able to retrieve from memory relevant knowledge related to the topic and apply strategies that assist in retrieving knowledge. For skilled writers, selecting content is dependent in part on the writer's knowledge about his/her

intended audience. Organizing ideas is another component of the planning process. This requires that the writer have knowledge of text structure needed to fit the goal.

During the translation process, ideas are put into visible language (Flower & Hayes, 1980). At this stage writers attend to several conventions of written speech. This requires knowledge of "lower order" skills or conventions, such as grammar and spelling, as well as knowledge of the organization of the text structure being used. Skilled writers monitor their writing and, as needed, edit and revise to fit with their goals and plans.

While the sub-processes of planning, writing and revising may be called up and produced in a linear fashion, they typically are used interactively by skilled writers. For example a writer may revise plans during the planning and organizing stage, or while writing, or plan and organize while revising.

Knowledge and Writing

Text Structure Knowledge

The organization of ideas according to a specific text structure is important in writing. Knowledge and awareness of text structure provides

the writer with a map or frame which can be used during each stage of the writing process. Text structures delineate logical connections in text, and include the superordination and subordination of ideas. For example in writing a descriptive report, knowing how subordinate ideas or details elaborate and connect with superordinate ideas is important to constructing well organized and coherent prose.

What a writer chooses to say must conform to the structure imposed by his/her purpose (Flower & Hayes, 1980; 1987). By organzing text to fit a specific structure a writer lays a map for the reader and facilitates comprehension. It is important for a writer to be cognizant of this, since confusions and ambiguities in text can cause difficulties for the reader. For example, Olsen, Mack and Duffy, (1981) found that comprehension of college students was impaired when the text organization did not meet readers' expectations for text structure.

For writers, knowledge of text structure involves an understanding that different structures pose different questions, and are signalled by different key words. Expository structures serve a variety of purposes and have a number of forms (Olsen, Mack & Duffy, 1981; Stein & Glenn, 1979). These structures include (a) explanations, (b) compare/contrasts, (c) descriptions, and (d) expert forms such as essays and reports (Englert, 1990; Meyer, 1975). Each of these text structures answers a specific set of questions

and is cued by key words (Englert, 1990; Englert & Raphael, 1988). For example, the compare/contrast structure asks the questions "What is being compared/contrasted to what, and how are they alike or different?". The key words that signal this structure are words such as "alike, different from, and in contrast to" (Englert, 1990, p.187).

In summary, writers who have specific knowledge of the conventions of the various text structures are able to generate, organize and revise their ideas more successfully. However, effective generating, organizing and revising during writing is also dependent on a writer's metacognition.

Metacognition and the Writing Process

To be a good writer, one needs not only task specific knowledge and skills, but also metacognitive awareness and knowledge. Flavell (1976) coined the term metacognition to describe the knowledge and awareness of cognitive processes, of cognitive strengths and weaknesses, and self-regulation that learners bring to a task. Since writing is a such a complex task, how a writer manages to incorporate and juggle all of the processes is reflective of metacognitive and self-regulatory knowledge and strategies. Effective writers use metacognitive awareness and knowledge during each stage of the writing process (Wong, in press). They have a well developed executive or control structure which oversees and manages the overall writing process (Bereiter,

1980). Good writers self-regulate and self-monitor their writing performance through internalized self-talk (Dauite, 1985; Englert, 1990; Flower & Hayes, 1980). By engaging in self-talk an indiviudal mediates his/her own thought processes during the stages of writing.

Metacognitive knowledge about the writing process refers to the knowledge that writers have about the purpose and goal, and of the need to plan, edit and revise. There are three forms of knowledge subsumed under metacognitive knowledge: declarative, procedural, and conditional (Englert & Raphael, 1988; Paris, Lipson, & Wixson, 1983; Rapheal, Englert & Kirschner, 1989). Declarative knowledge refers to the knowledge that writers have about the purpose and goal of the task. Knowledge of how the various strategies and procedures which assist task completion can be implemented is procedural knowledge. In writing, this includes knowledge that there are strategies such as organizing, or revising. Conditional knowledge implies understanding of when, why and where to use specific strategies (Paris, Lipson, & Wixson, 1983; Levin, 1986; 1988; Rabinowitz, 1988). In the writing process this includes knowing when and why to plan, organize, monitor and revise. Having conditional knowledge helps writers to generalize and transfer the strategies to other contexts. Thus, to be a good writer, one must have task specific and metacognitive knowledge, and be able to self-regulate and self-monitor one's cognitive processes.

Writing and Learning Disabled Students

Studies which have examined the written language problems of learning disabled students show us that these students have considerably more difficulties than their normally achieving peers. In the context of the writing process, learning disabled children have been described as being "teacher dependent" (Englert, 1990). Besides having difficulties with lower order skills, they lack knowledge about and terms for describing the writing process. They have a poor understanding of what good text looks like and how to create it. Their written compostions often reflect a "knowledge telling" strategy, which is writing in a linear and associative fashion whatever comes to mind, with little thought given to the text organization and the intended audience (Scardamalia & Bereiter, 1986). Further, they demonstrate poor metacognition and self-regulation, lacking the internalized self-regulatory speech that characterizes good writers.

Comparative studies of learning disabled, normally achieving, and low achieving students on their knowledge of and sensitivity to the various patterns of text organization, both narrative and expository, have shown learning disabled students to lack awareness and understanding of various text structures (Barenbaum, Nodine, & Newcomer, 1987; Nodine, Barenbaum, & Newcomer, 1985; Englert & Thomas, 1987; Englert & Raphael, 1990; Englert, Raphael, Anderson, Gregg, & Anthony, 1989; Vallecorsa &

Garris, 1990; Wong, Wong, & Blenkinsop, 1989). Studies which have examined learning disabled students' knowledge of narrative structures have found the performance of these students to resemble that of younger peers. (Nodine, Barenbaum, & Newcomer, 1987; 1985; Montague, Maddux, & Dereshiwsky, 1990; Vallecorsa & Garris, 1990). The written compositions of learning disabled students tended to be descriptions and associations, which reflected a knowledge telling approach to writing.

Although studies which have examined learning disabled students' knowledge of expository text structures are more limited (Englert, Raphael, Anderson, Gregg, & Anthony, 1989; Englert & Thomas, 1987; Thomas, Englert, & Gregg, 1987; Wong, Wong & Blenkinsop, 1989), these studies have shown learning disabled students to lack knowlege of how expository text is structured. Englert and Thomas, (1987) presented learning disabled, low achieving and normally achieving students in grades three, four, six and seven with two sentences which signalled a text structure (e.g. "Dogs have noses. Birds have beaks." (p.97)). Students were asked to finish the paragraph by writing two sentences which fitted the topic. Whereas 68% of the normally achieving and 53% of the low achieving students conformed to the structural requirements of the paragraph stem, only 41% of the learning disabled students did so.

Englert and Thomas (1987) also found that the learning disabled students differed substantially in their ability to use text structure to recognize inconsistencies in the material they read. However, the learning disabled students found the reading task easier than the writing task. This suggests a lack of transfer and generalization of what knowledge they did have about the text structure for reading to writing.

In a study by Thomas, Englert, and Gregg (1987), normally achieving, learning disabled and a group of normally achieving students matched with the learning disabled for intelligence and reading ability were compared on their ability to generate ideas for four different expository structures. The performance of the learning disabled students resembled that of younger students, and indicated a knowledge telling approach and their papers were not organized to fit the structures they were asked to write.

Englert and her associates (Englert, Raphael, Anderson, Gregg, & Anthony, 1989) further examined learning disabled, low achieving and high achieving students' reading and writing performance of expository material, and the potential relationship between text structure knowledge in reading to writing. Students were asked to (1) compose two types of expository texts, (2) read and recall comparison/contrast and explanation passages, and (3) to write summaries from multiple sources. The learning disabled students produced more poorly organized compositions and recalls which contained

fewer ideas. The greatest performance gaps were on tasks where they had to select or generate a text structure for both their own ideas or for summaries from reading sources.

Wong, Wong, and Blenkinsop, (1989) compared grade eight and eleven learning disabled students with a normally achieving grade eight and a normally achieving sixth grade reading age control group on performance of essay writing. Their results also indicated developmental delays, and showed that the learning disabled students did not improve with age. Wong and her colleagues found that the learning disabled adolescents performed at a level similar to the normally achieving grade six children.

Studies examining the metacogntive knowlege of learning disabled students in relation to the writing process have shown that these students lack awareness of the purpose of the task and of strategies to execute the task. They do not think in terms of text structure when they plan their writing. Part of the Englert et al. (1989) study discussed earlier also examined the metacognitive knowledge about expository text and strategies for producing and monitoring such text. The metacognitive interviews used to examine these variables revealed the learning disabled students to be lacking in metacogntive knowledge about text organization. They were more concerned with the mechanical and surface level features of text, and had less knowledge related to planning, organizing, categorizing, and revising

expository text.

These findings were corroborated by MacArthur, Harris, and Schwartz, (1991) in a study examining learning disabled students' knowledge of revision. On interview and performance measures, the learning disabled students showed a limited understanding of the revision process. As in the Englert et al. (1989) study, their predominant focus was on correcting mechanical errors and changing surface level features of text.

The study by Wong, Wong, and Blenkinsop, (1989) also examined metacognitive knowledge of the writing process. The results showed the grade eight and eleven learning disabled students lacking in the knowledge that writing is a goal directed activity that involves planning and organizing. The learning disabled students were more like the normally achieving sixth graders in that they indicated that writing was "knowledge telling", and were more concerned with the structural or lower level cognitive components of writing.

The studies reviewed have shown learning disabled students to be more like their younger achieving peers in their writing perfomance and knowledge of the writing process and of text structure. Learning disabled students tend to write what comes to mind, and their thinking about the writing process focusses on the mechanical aspects of the task. Instructional

approaches which emphasize the writing process and strategies while teaching specific text structures appear to be in order for these students.

Motivation, Self-Efficacy, and Attributions

How students perform academic tasks is dependent upon the cognitive resources they allocate to tasks. Cognitive resources depend not only on a student's capacity for learning, but also on cognitive processes and strategies, and motivational variables. Motivation is an essential component for students to be actively engaged in the learning process.

Research dealing with motivation within academic settings has been approached from a diverse theoretical background and has been concerned with why students choose to approach classroom tasks as they do. The components which affect children's motivation can be examined through self-efficacy and attribution theory. These theories assume that students form perceptions of their abilities to perform a given task based on their retrospective or prospective troughts and that these cognitions and perceptions guide behaviours and motivation.

Self-efficacy theory (Bandura,1977; Schunk,1989) rests on the assumption that individuals hold beliefs about their ability to learn and perform tasks based on a number of cues. According to Schunk (1989), self-

efficacy for learning cognitive skills is an important variable in understanding students' motivation and learning. Schunk (1989) hypothesizes that in school settings beliefs of self-efficacy are mediated by a number of "task variables which make efficacy cues salient" (p.23) and subsequently affect the amount of effort expended on a given task. These task variables include goal setting, performance and attributional feedback, modelling, the nature of instructional presentation, strategy training, content difficulty, and cognitive processing. Schunk contends that individuals attend to cues which they process and appraise cognitively, and from which they form self-efficacy expectations and subsequent actions. Cues include both antecedent and consequent thoughts which are the result of personal and situational variables. Personal cues include information from prior experiences in a similar task, and attributions of ability to perform a task. The situational cues that students process during task engagement include performance outcomes, outcome patterns, attributions, peer comparisons, persuader credibility, and bodily symptoms. These cues affect subsequent efficacy when faced with a similar task.

Attribution theory (Weiner 1986) suggests that the ascriptions an individual makes to explain success or failure in achievement settings result from either internal or external cues which are viewed either as stable or unstable, and as controllable or uncontrollable. Weiner's model suggests a clear relationship between causal ascriptions and expectancy, and subsequent

behaviours and motivation. Thus, for students to make the effort to use strategies, a sense that the achievement outcome is controllable through effort or strategy use is required. Having a sense that ability is an unstable component, one that increases with learning and strategy use (Dweck, 1986), is also important.

Learning disabled children encounter more difficulties learning and more failure experiences than do their normally achieving peers. In the context of the writing process, this can be attributed to their difficulties in both lower order skills and lack of cognitive and metacogntive knowledge related to writing. As a result of repeated failures, many learning disabled children begin to perceive themselves as not having the ability to succeed, and that their efforts are not worth much (Licht & Kistner, 1986). In their attempt to protect their sense of self-worth they may exhibit helplessness and a sense that it is hopeless to put forth effort. Over time, negative motivational attributions and beliefs become the norm for these students. It is important to attend to motivational variables when designing instructional interventions for these students, combining strategy instruction with performance feedback that emphasises effort and strategy use (Wong, 1991; 1987). By giving feedback which emphasises effort and strategy use, students come to realize that by using task appropriate strategies they can control their learning outcomes (Wong, 1991). This should result in improved self-efficacy and increased motivation to use strategies and put forth effort.

Instructional Models

The shift from product oriented to process oriented instruction in writing has been previously discussed in Chapter One. Process writing instruction is characterized by two different approaches, the "naturalistic mode" and the "environmental mode" (Hillocks, 1984). In the "naturalistic mode" there is an assumption that writing processes are self learned. Students are free to write about what they choose to, and there is no direct instruction in the strategies that writers use during the writing process. While this mode is more effective than the "presentation mode" which teaches writing as fragmented subskills, Hillocks, (1984) found it to be less effective than the "environmental mode". Hillocks (1984) found the most effective mode to be the "environmental mode". This instructional mode includes clearly defined objectives and goals which are set by the teacher, and a high level of student involvement. Task specific composing procedures are taught through explicit instruction, and interactive dialogue. Teachers and students work and dialogue together to solve problems related to the task. Further, there is ample opportunity for students to practice the new skills and strategies with feedback coming from both teachers and their peers. The instructional features of the environmental mode are important elements in effective strategy instruction, and will be discussed in more detail in the section of this chapter dealing with the Cognitive Strategy Instruction in Writing curriculum.

Writing Instruction and Learning Disabled Students

There exist currently, two major lines of research which emphasize improved knowledge of text structure in writing instruction for learning disabled students. Graham and Harris (1989) contend that learning disabled students can be taught to improve their writing through a combination of appropriate composition strategies and self-management training routines.

Two studies by Graham and Harris, (1989a; 1989b) focussed on improving story and expository writing in learning disabled students. In the Graham and Harris (1989b) study, learning disabled students in grades five and six were taught to write narrative stories independently through specifc strategy training in story grammar elements, and self-instructional procedures. First, students were taught the strategy for narrative structure through the mnemonic "W-W-W" (Who, Where, When?); "What=2" (What does the main character want? What does s/he do to get it?); "How=2" (How does the story end? How does the character feel?). Following this, a five step strategy designed to help the students execute plans for writing was taught. For example, one of the self-directed cues of the strategy was, "Write down the story part reminder" (Graham & Harris, 1989b, p.357). Thus, students were cued to generate content in response to self-generated questions. At posttest the researchers found that the learning disabled students who used self-instructional procedure did not differ from the

normally achieving students in their ability to include story elements in their compositions. Their stories, however, were not as long, nor as interesting as the normally achievieng students. The students also showed improvements in their self-efficacy for writing stories.

In a second study, Graham and Harris, (1989a) taught learning disabled students to write the argumentative essay structure, using the strategy mnemonic TREE (note Topic sentence; note Reasons; Examine reasons; note Ending). The first self-instructional prompt in this study was, "Think, Who will read this and why am I doing this?". The second was, "Plan using TREE", and the third, "Write and say more". Graham and Harris, (1989a) found an improvement in students' ability to plan their writing and to include elements required to write effective essays.

These two studies show that self-instructional training is a powerful tool for teaching learning disabled students to plan and write compositions which adhere to specific text structures. They have not examined, however, changes in students' awareness of the writing process, and of strategies which will help them to execute the complex task of writing more effectively.

The Englert et al. intervention program (Englert,1990; 1992), the CSIW curriculum, is based on research which has recognized the social nature of cognitive development (Englert & Raphael, 1988). It is based on Vygotsky's

theory of "proximinal development" (Vygotsky, 1978). Instructional scaffolds, which include diaglogue and procedural facilitation, are used to teach students cognitive and metacognitive strategies. In this model, writing instruction is seen as a holistic and social enterprise. The CSIW curriculum will be discussed in more detail in the next section of this chapter.

The Cognitive Strategy Instruction in Writing Curriculum

The Cognitive Strategy Instruction in Writing curriculum (CSIW) was developed by Englert and her colleagues (Englert, Raphael, & Anderson, 1991; Englert, 1992; Englert, 1990; Englert, Raphael, Anderson, Gregg & Anthony, 1989; Raphael & Englert, 1990) after extensive study of normally achieving, low achieving, and learning disabled students' expository writing, knowledge of expository text structure, and knowledge of the writing process and related strategies.

The Cognitive Strategy Instruction in Writing (CSIW) curriculum, based on current concepts of the writing process, is a socially mediated writing intervention (Englert,1992). In this model, based on the principle of instructional scaffolding, students are taught to write expository text structures and writing process strategies through teacher modelling, reciprocal dialogue, procedural facilitiation, explicit instruction and guided practice. As such, the CSIW curriculum includes the critical elements of the

environmental mode of writing instruction.

The rationale for scaffolded instruction rests on the assumption that adults facilitate children's acquisition of knowledge and strategies by providing them with opportunities for discovery through modelling effective behaviour and gradually increasing the demands for student controlled use of strategies (Paris, Newman, & Jacobs, 1985). Its theoretical base is in Vygotsky's notion of the "zone of proximinal development" (Vygotsky, 1978). Teachers assist students to move from one level of competence to another, the ultimate goal being that the student is able to be independently strategic (Englert & Palinscar, 1991; Englert, 1990; Paris, Newman & Jacobs, 1985).

The essence of scaffolded instruction is its communicative process through which students interpret and develop an understanding of how the teacher identifies the relevent aspects of a given task situation (Stone & Wertsch, 1984). The critical feature of scaffolded instruction is the reciprocal or shared dialogue between students and teachers. This is a collaborative process between novice and expert, which gradually gives the novice control of the cognitive strategy being taught (Palinscar, 1986). Through reciprocal dialogues around strategies students begin to see how experts think. Through the gradual transfer of the process to the students, they begin to internalize and tranfer strategies and knowledge to their own cognitive schema.

The positive effects of scaffolded instruction have been demonstrated by the studies of Palinscar and Brown (see Palinscar, 1992; Palinscar, 1986). Based on the scaffolded instruction model, Palinscar and Brown (1986) developed an instructional method for teaching expository text comprehension strategies called "reciprocal instruction". In this procedure students and teachers together used dialogue and took turns assuming the role of teacher for a given text passage. Using expository text, Palinscar and Brown (Palinscar, 1986) successfully taught learning disabled grade seven students to summarize, generate questions, ask for clarification, and make predictions. The strategies were taught through modelling, dialogue and shared questions. As the students improved in their ability to use the strategies, the teacher transferred more of the responsibility for the dialogue to the students. Results indicated that, with guided practice, students became skilled at using the strategies independently and showed significant improvements in reading comprehension which transferred to social studies and science classes.

The effects of the reciprocal teaching procedure were extended to a study of listening comprehension with at risk grade one students (see Palinscar, 1992; 1986). The results showed that these young at risk students became increasingly more able to spontaneously use the strategies to assist with listening comprehension.

As has been stated previously, several forms of instructional scaffolds are used in the CSIW curriculum. Throughout the process, students and teachers engage in dialogue around text structure and strategies. Explicit instruction for tasks and strategies is provided through mental modelling and thinking aloud on the part of the teacher. By modelling their thinking for students, teachers influence the way students think about and process the task or strategies being taught (Marx & Winne, 1987). To foster generalization of the strategies being taught, students are also given explicit instruction about why, when and where the strategies being taught can be used. The effects of including such a conditional knowledge component in strategy instruction have been studied in several experiments by O'Sullivan and Pressley (1984). These researchers found that strategy maintenance and transfer were maximized when students received conditional strategy information instruction along with a keyword strategy for vocabulary learning.

The CSIW curriculum also provides students with instructional scaffolds in the form of graduated prompts and questions, which again, emphasises shared dialogue. For instance, a student who may have difficulty in the editing process can be supported by the teacher posing a series of graduated questions abut text confusions, while the student performs the appropriate actions releated to the editing process.

Using interactive dialogue, Wong, Wong, Darlington, and Jones (1991) conducted two studies in which learning disabled adolescents were taught to revise reportive essays for thematic saliency and clarity. By providing pre-revision training skills which focussed on writing as a recursive process and included planning, text organization and revising, Wong et al. laid the foundation for the revision strategy training. To eliminate possible effects for poor handwriting, the students were first taught a word processing program. Following this, they were taught a three step strategy designed to facilitate planning prior to writing. To demonstrate that writing is a recursive process, the students were engaged in dialogue about the satisfaction of their plans and encouraged to change them as needed. When the students had written their drafts, interactive discussions which included graduated questions between the teacher and the student about the clarity and thematic saliency of each of the papers ensued. The results of both studies indicated significant improvements in thematic salience in students' reportive essays from pretest to posttest. The results of the Wong et al. studies lend further evidence of the effects of interactive dialogue in literacy instruction.

Procedural facilitiation is another scaffold used in the CSIW curriculum. Procedural facilitation, in the form or oral or written prompts, is a method of providing students supports and cues which guide them towards independently executing a complex task such as writing (Scardamalia & Bereiter, 1986). The prompts provide the students with a structure for

thinking and acting until they internalize the cognitive process being learned. Two recent studies by Graves and Montague and their colleagues (Graves, Montague, & Wong, 1990; Montague, Graves, & Leavell, 1991) have shown improved writing performance in learning disabled students who were given procedural prompts. Graves and Montague and their colleagues (1990; 1991) gave students cue cards containing specific story elements (e.g.setting, character) as they wrote narrative passages. The results showed the learning disabled students making significant improvements in the quality of their written stories, with little difference in the inclusion of story grammar elements between the learning disabled and normally achieving students.

In the CSIW program the procedural prompts take the form of "Think Sheets" designed to cue and assist students to carry out specific strategies (e.g. planning, or organizing) and to assist with the retrieval of the the mental representation of the text structure being written. The "Think Sheets" direct students' attention to the text structure during planning and organizing and during the editing/revising process. The questions which accompany each of the "Think Sheets" (e.g. "Why am I writing this? Who am I writing this for? How can I organize my ideas? What parts are not clear?") also make visible to students the self-talk of expert writers. Thus, the self-regulatory behaviour and strategy knowledge of expert writers which have been previously modelled are reinforced.

The CSIW curriculum was developed through extensive studies with a large number of elementary aged students. To determine which instructional foci had the most effect on students' metacognitive knowledge about the writing process, Raphael, Englert, and Kirschner (1989) tested components of what would later become the CSIW curriculum with a group of 140 low average to high average students. The students were divided into four groups: (1) Communicative Context, (2) Text Structure, (3) Communicative Context/Text Structure, and (4) Control. Instruction was based on the "environmental" writing instruction mode, and included instructional scaffolds. In the the Communicative Context Group students learned and practiced writing in a writing process environment that stressed purpose for writing and awareness of audience. The Text Structure group received text structure instruction which did not emphasize the communicative aspects of writing. The Communicative Context/Text Structure group received text structure instruction in the context of writing as a goal directed and communicative act, which stressed writing for a purpose and audience. Finally, the control group took part in the school's regular language arts curriculum. Results indicated that the Communicative Context/Text Structure group increased their awareness of the purpose for writing and of audience needs, as well as how to present text in a more organized manner. The findings in this study emphasise the importance of writing instruction which emphasizes the communicative aspect of the writing process.

Engert and her colleagues (Englert, Rapheal & Anderson (in press) examined the effects of the CSIW curriculum on a group of learning disabled and normally achieving students' metacognitive knowledge of writing and of text structure organization. The effects of the intervention were tested through a metacognitive interview similar to the one used in the Englert, Rapheal, Anderson, Gregg, and Anthony, (1989) study, and through writing samples and reading recalls. Post intervention assessment indicated that the the differences in metacognitive knowledge of the writing process, which had existed between normally achieving and learning disabled students at pre intervention, were no longer evident. The learning disabled students who participated in the intervention did not differ significantly from their normally achieving peers in their ability to talk about writing, about how to plan, organize and revise text to fit the text structure and to assist with the execution of the task. Intervention students also articulated an increased awareness of self-regulatory strategies, and a reduced reliance on the teacher. The learning disabled students in the intervention group also demonstrated an improved ability to write more organized text.

Summary

The CSIW (Englert, Rapheal & Anderson, 1992; Raphael & Englert, 1990; Englert, 1992) curriculum was designed to improve students' expository writing performance and metacognitive knowledge and behaviours by

making visible to students the processes and knowledge that skilled writers have and use. The research reviewed here indicates that students can acquire knowledge and strategies for writing through interactive dialogue, explicit instruction, and procedural facilitators. It has been suggested that these instructional components help students to see and work through the knowlege, skills and self-talk that expert writers use. As students begin to improve their knowledge of the process and use of strategies, they begin to see that strategic behaviours affect performance outcomes. This should lead to increased feelings of self-efficacy and attributions for effort and strategy use, leading to improved motivation and self-regulatory behaviors.

This chapter has looked at the theoretical foundations of the CSIW curriculum. Chapter Three will explain in more detail the exact procedures of the CSIW curriculum.

CHAPTER III

Method

Subjects

The subjects in this study were 12 intermediate (grades 5-7) students who had been identified as learning disabled. The students came from 11 schools located on the north to south eastern side of Vancouver, British Columbia. This is a mixed area socioeconomically, with low to middle income households. The socio-economic backgrounds of the students in the study reflected this diversity.

The students ranged in age from 10 years 6 months to 13 years, with an average chronological age of 11 years 4 months. There were ten boys and two girls in this study. This ratio of more males to females is typical in programs for the learning disabled. Of the twelve students in this study, two were in grade five, six in grade six, and three in grade seven. One of the two girls was in grade six and the other in grade seven. During the course of this study the twelve students attended a Diagnostic Centre for learning disabled students.

The Diagnostic Centre

The Diagnostic Centre is located in an elementary school in the southeast area of Vancouver. It provides a multi-faceted service for

elementary students (grades 1-7) who are suspected of having learning

disablities or have been identified as learning disabled. A maximum of 12

students attend the Centre for one term (10- 12 weeks) at one time. Students

who meet the eligibility criteria have support from their school based

Learning Assistance Centre, including an Individualized Educational Plan

(I.E.P.), and have received psychological and speech and language

assessments. Students are referred for placement to the Centre by the school

district's Central Screening Committee, and their names are placed on a wait

list for entry. The Student Services Handbook, published by the Vancouver

School Board (1988), determines that students are eligible for the Diagnostic

Centre programme when they:

- possess at least average intellectual ability;
- exhibit at least a two year delay in achievement;
- show a significant discrepancy between their estimated
  potential and actual performance;
- exhibit extreme dificulties in some of the following areas:
    attention, perception, memory, reasoning, co-ordination,
     communication, reading, writing, spelling, calculation,
    social competence and emotional maturation; and
- have learning problems NOT primarily resultant from
  factors such as:
    (a) sensory or physical impairment
    (b) mental retardation
    (c) emotional disturbance and/or lack of motivation
       to learn

(d) environmental or cultural disadvantage, including
   a second language factor

(e) lack of opportunity to learn; poor attendance or transience

The goals of the Centre are to further assess the student's learning style, academic strengths and needs, and to remediate academic skill deficits and teach appropriate strategies. Based on formal and informal assessments and observations during the time spent at the Centre, recommendations appropriate to each student's individual needs can be made and are suggested. Prior to their exit from the Centre, the students' classroom teacher and Learning Assistance Centre and/or Resource teacher are invited to see the strategies and skills which have been taught. An action plan designed to continue with some of the instruction and to facilitate the student's re-entry into home schools is worked out collaboratively and agreed upon between the teachers at the Centre and those at the student's home school. Students are followed up for a minimum period of six months by the Diagnostic Centre staff.

Since a sample of intermediate aged students was desired for this study, grades five to seven students on the waitlist for the Centre were selected to attend for the period of the study.

Characteristics

School district policy does not allow students' IQ scores to be reported. However, a review of assessment data in the students' files indicated that all twelve students in this study had intelligence scores within the average range and met the aptitude-achievement discrepancy criteria. This included, for all twelve students, documented difficulties with written language organization and output. While four of the students came from homes where English was a second language, assessment and eligibility data had shown that this was not considerd to be their primary presenting problem. Three of the students were subject to mood swings and periods of non-compliance, and their files suggested some emotional difficulties as well as learning disabilities.

Experimental Design

A one-group, pretest-posttest experimental design was used. The physical organization of the Centre is designed for teaching in small groups and one to one. It is not set up to teach a large group of twelve students at one time. Therefore, it was necessary to divide the twelve subjects into two matched groups for instruction. Thus, each group had five boys and one girl. The mean age for the first group was 12.0 (SD.99), and 11.7 (SD .46) for the second.

Matching Groups Procedure

Prior to the beginning of the study, the students were divided into two matched groups based on age, sex, reading composite scores from the Kaufman Test of Educational Achievement (K-TEA; Kaufman & Kaufman, 1985), and scores on the Spontaneous Writing Quotient and Thematic Maturity subtest of the Test of Written Language-2 (Hammill & Larsen, 1988). These two standardized assessment instruments form part of the assessment for all students attending the Diagnostic Centre.

The K-TEA, a standardized, individually administered achievement battery provides a reading composite score which is derived by adding raw scores obtained on decoding and comprehension subtests. The K-TEA provides percentiles, grade and age equivalent scores and standard scores. The comprehensive form manual provides reliability and validity data. Reliability studies resulted in coefficients in the range from .94 to .98 for both grade and age level (Kaufman & Kaufman, 1985).

Students' scores ranged from the fourth percentile, to the forty-seventh percentile with grade equivalent scores of 2.2 to 5.8. The mean grade score for the total group was 3.9 (SD 1.5). The mean grade score for each of the two matched groups was also 3.9.

The Test of Written Language-2 is a standardized measure which assesses students' writing ability through contrived and spontaneous subtests. Contrived, spontaneous and total writing quotients in the form of standard scores (Mean 100, SD 15) can be obtained. Percentile and standard scores can be calculated for the individual subtests. Reliability data reported in the TOWL-2 manual indicate that averaged reliability coefficients range from .87 to .96 (Hammil & Larsen, 1988).

Students' scores on the Spontaneous Writing Quotient and Thematic Maturity subtests were used. These measures were felt to most reflect the writing skills and strategies which were the focus of this study. The Spontaneous Writing Quotient provides a measure of students' ability to use the elements of connected discourse while generating meaningful passages. It yields measures for thematic maturity (idea units) and vocabulary, syntax, spelling and style (conventions) in context. The Thematic Maturity subtest measures the ability to write a story in a coherent and organized manner, to generate a theme and to develop the characters (Hammil & Larsen, 1988).

Students' scores on the Thematic Maturity subtest ranged from the second to the sixteenth percentile. The Spontaneous Writing Quotient scores (Mean 100, SD 15) was 77 (SD 8.32) for the first group and 76.2 (SD 8.73) for the second.

Procedures

All instruments and instruction in this study were administered by the researcher. Scripted lesson plans were developed to ensure that both groups received the same instruction. A portable casette recorder was used to collect interview data.

Parents were informed of the rationale for the study by telephone and in writing before the study began. Written permission for their children to be involved in the study was obtained from all of the subjects (Appendix 1).

The study began in the third week of September, 1991, and continued until the third week of December, 1991.

Testing Procedures

Students' ability to write a descriptive report and compare/contrast passage was measured by writing samples. A descriptive report was obtained at four points: pretest, immediate posttest, delayed-posttest and maintenance test. For the compare/contrast structure, writing samples were taken at three points: pretest, posttest and maintenance test.

Students' knowledge of the writing process and strategies and text

structure was measured through interviews. Questions probing knowledge of strategies and the writing process were conducted at pre intervention, immediately following the second intervention (compare/contrast text structure) and six weeks after the end of the study.

Pretest Data Collection

Pretest data were collected over a period of six days. All data were collected in the mornings. Writing samples were taken on two separate days between recess and noon. Interviews, which were individually administered, were conducted in the mornings over the remaining four days.

Writing Samples

Students were asked to write a descriptive report on the first day, and a compare/contrast passage on the following day. Students were free to choose the specific topic for each text structure (Appendix 2). This was to ensure that the topic each student chose was within his/her knowledge base and interest (Benton, Corkill & Khramtsova, 1992; Lloyd-Jones, 1977). No time limit was set for the task. As students were writing their papers, observations were made and recorded about their overt use of prewriting strategies. To allow for comparisons between students' metacognitive knowledge and actual strategy performance, the observations were given a numerical code to match the

values given for answers to the prewriting questions in the interviews. Thus, a score of 3 was given if a student generated ideas and organized them prior to writing, a score of 2 if the student made a list of ideas, a score of 1 if a student demonstrated reflective thinking, and 0 if the student began writing immediately after writing either a date or title, or drawing a margin.

Primary trait and holistic scores were developed for each of the structures. A Primary Trait Score, based on how well the passage adhered to and was organized according to each text structure, was used for each writing sample (Cooper, 1977; Lloyd-Jones, 1977). Thus, the descriptive report passages were scored on two traits; (a) topic identification and, (b) organization by categories with supporting details (Meyer, 1975; Richgels, McGee, Lomax & Sheard, 1987). The compare/contrast passages were analyzed on three primary traits (Englert, Raphael, Anderson, Gregg & Anthony, 1989). These were: (a) topic clarity, how clearly the things that were being compared/contrasted were identified; (b) organization of the description of how the two things were alike and different; and (c) use of key words which signal compare/contrast. Each passage was also given a general impression or holistic score for how interesting and informative it was. Each criterion or trait was given an individual rating of four possible points. A score of 0 was given if the primary trait was absent, or students had written a different structure from the one asked for. The scores of 1, 2 and 3 indicated a low, middle and high knowledge score (Diederich, 1974) (Appendix 3). The

primary trait and interest scores when added together resulted in a possible

total of 9 for the descriptive passage and 12 for the compare/contrast passage.

Metacognitive Interviews

When all writing samples had been gathered each student was

interviewed about his/her knowledge of the writing process, of prewriting

and editing strategies, and about knowledge of descriptive report and

compare/contrast text structures. The interview questions were based on

those reported on by Englert et al. (1989).

All interviews were taped, transcribed, and answers to each question

analyzed for common ideas related to writing process strategies. To allow for

comparisons in students' knoweldge between pretest and posttest, a

numerical value was assigned each question based on the level of knowledge

of the writing process, prewriting strategies and organization of text structure.

To determine knowledge of the writing process, questions which

focussed on students' awareness of purpose, audience and strategies for

prewriting and editing were asked (Appendix 4). The first question dealing

with writing purpose was scored from 0 to 2. A score of 2 was given if the

response indicated awareness of writing as a communicative and social act, a

score of 1 if the student indicated writing was only a school related act, and 0 if

there was no response, or indicated no idea.

For the second question, dealing with audience awareness, a score of 3 indicated awareness of a wide audience. A score of 2 was for teacher, self and parents. A 1 was given if the response was teacher only, and 0 if the student indicated no idea, or gave no response.

For the question dealing with knowledge of prewriting strategies, the following scoring criterion was used. Responses indicating prewriting strategies which included organization were given a 3. A score of 2 was given if the student indicated some prewriting activity which included listing or brainstorming of ideas, but no organization prior to writing a draft. One point was given if the student indicated the need to give the topic some thought, and a 0 if the response focussed on writing the date, the title, and drawing a margin.

The question dealing with knowledge of editing/revising strategies was scored from 0 to 3. Responses were given a score of 3 if they indicated changes which would improve meaning, clarity and organization, and reflected some awareness of audience needs. A score of 2, indicated need for more details and greater length, and some minor changes in the organization. A score of 1 reflected a response which suggested mechanics, and increase in length, and a focus on neatness. A 0 was given if the student had no suggestions, or gave

no response. For more detailed scoring criteria see Appendix 5.

To assess each student's metacognitive knowledge of the organization of the descriptive report and compare/contrast text structures, vignettes in which the student was asked to help a fictitious classmate (Billy/Debbie) plan, organize and revise such a paper were used (Englert, Raphael, Anderson, Gregg, & Anthony, 1989) (Appendix 4). All students were asked the questions dealing with the descriptive report structure before the compare/contrast vignette questions were given. Students were asked how Billy/Debbie should organize their information for each structure. Students were then shown the papers that Billy/Debbie had written and were asked if the assignment was being done correctly and if the paper was complete. Finally, the students were asked how they could help Billy/Debbie fix/complete the assignment.

The interview questions related to knowledge of text structure were also rated on a scale of 0 to 3, and reflected the same knowledge requirements as the writing sample organization scores. Thus, a score of 0 reflected no response or a lack of knowledge, 1 of low knowledge, 2 of medium knowledge, and 3 of high knowledge (Englert, Raphael, Anderson, Gregg & Anthony, 1989).

For the questions related to the organization of the descriptive expository passages a 0 score indicated either no idea of how to organize, or no

response. A score of 1, indicating low knowledge was given if the student provided details randomly. A score of 2 reflected better understanding or medium knowledge, as some attempts at categorizing were evident, but not consistent. A score of 3 reflected high knowledge of the organization of the text structure in that the student indicated the information should be organized by categories which were supported with relevant details. For more detailed examples of the scoring procedures see Appendix 5.

For the compare/contrast structure a 0 score reflected no knowledge, or no response. A low knowledge score of 1 was given if the students responded with random details for comparison or contrast. A score of 2 was given if the student indicated that the information should be organized so that either comparisons or contrasts, but not both were made, and if students demonstrated that they were not clear in the distinction between category and detail. A high knowledge score of 3 was reflected in responses which indicated the need to organize the comparisons and contrasts by categories, and use of parallel structures.

The interview question which investigated students knowledge based on the revisions they suggested was also given a score of 0 to 3. Thus, for descriptive report structure knowledge, a score of 0 indicated no knowledge, or no response. A score of 1 was given if the student suggested mechanical and surface level changes to the text. A score of 2 was for responses which

focussed mainly on the need to provide more details, with the distinction between details and categories not being clear. A score of 3 was given if the student suggested reorganization of information by categories with supporting details.

For the compare/contrast structure 0 and 1 scores were the same as for the descriptive report. A score of 2 was given if the student main suggestions were for more information about likenesses and differences, and showed an uncertainty about the distinction between categories and details. A score of 3 resulted from a response that indicated that the paper needed to be structured so that likenesses and differences were organized not only by categories, but in a parallel fashion, and with key words included.

Self-Efficacy Measures

Measures of students' attributions and self efficacy for writing were also taken. Immediately following the writing of the pretest, posttest 1 and posttest 2 samples of the descriptive report, students were asked questions which measured how well they thought they would do on the papers they had just written. Along with assigning themselves a possible mark on a five point scale (Appendix 6), students were asked to give a reason/attribution for these expected marks. These reasons included the following:

(a) I worked hard

(b) The teacher likes me

(c) I used good strategies

(d) I am a good writer

(e) I was lucky

(f) The work was easy

The self-efficacy and attribution measures were analyzed to determine changes in students' perceptions of their ability to write effective papers from a focus on ability and external factors, to one of strategy use and effort, or internal factors.

Instructional Procedures

The instructional period of this study was ten weeks. Instruction was based on the Cognitive Strategy Instruction in Writing curriculum (CSIW), (Englert, 1990, 1992; Raphael & Englert, 1989). Students were taught writing process strategies while learning to write expository descriptive reports and compare/contrast passages. The decision to teach these two structures was based on the fact that (1) upper elementary school students are often called upon to write reports and to make comparisons and contrasts in a number of subject areas, and (2) descriptive and compare/contrast structures have been found to be the most difficult for elementary school students (Englert & Hiebert, 1984). Each structure was taught over five weeks. Week one to five

were spent on the descriptive report structure and the sixth week to the tenth week on the compare/contrast structure. Lessons were forty-five minutes each and were conducted four times a week. The first group met the period before recess and the second group the period immediately following.

Mental modelling, explicit instruction, shared dialogue, text analysis, and procedural prompts (scaffolds) in the form of "Think Sheets" (Englert, 1990, 1992) were used to teach students how to write descriptive and comapre/contrast structures and cognitive and metacognitive strategies used in the writing process. For each paper that they wrote, students applied all of the subprocess strategies (planning, organizing, drafting, editing/revising and rewriting).

Text Structure Instruction

Text Analysis

For each of the text structures instruction began with a focus on developing students' awareness and knowledge of that particular structure through text analysis. Students were presented with three examples of varying levels of competence of each structure, beginning with a good or ideal example. Each of the other two examples became progressively poorer or non-examples (Appendix 8). During this phase of the instruction the teacher modelled an expert's thinking by verbalizing: (a) the purpose of the

particular text structure, (b) what questions the passage might answer based on the title and the first sentence and/or use of key words, (c) whether the passage was organized properly according to its text structure and, (c) how the passage could be improved. Students were encouraged to give their opinions about each passage. This led to a reciprocal or "shared dialogue" (Englert 1990; Englert, 1992), which included a discussion of the author's possible reason/purpose for writing the passage, the intended audience and its needs, and the organization of the passage.

Explicit Instruction

Explicit examples were given of how effective expository descriptive reports could be organized through categorization of information. Students were explicitly shown that, by asking "WH" questions (e.g. What?, Where?) related to the topic, the categories could more easily be recalled and generated. The list of possible category attributes that the students and the teacher generated were put on the board and later transferred to charts which were on display in the room.

The categorization of information which had been explicitly taught for the descriptive report structure was continued for the compare/contrast structure. Again the organization of the structure was charted and displayed in the room.

Writing Process Strategy Training

When the text analysis was completed for the descriptive structure

writing process strategies were introduced. The acronym, "POWER" (Plan,

Organize, Write, Edit, Rewrite) was used to teach writing subprocesses and

strategies. Each subprocess strategy included a number of questions designed

to foster strategy execution as well as self-regulating and self-monitoring

behaviors for the students (Appendix 9a).

A wall chart with the "POWER" acronym and the questions

accompanying each strategy step was put up and made clearly visible to the

students. Procedural prompts in the form of "Think Sheets" were provided

for the Plan, Organize and Edit/Revision subprocess strategies (Appendix 9b-

9e).

Each strategy was taught as part of the total writing process and was

applied while students learned to write the two expository structures.

Students were allowed to choose their own topics so that they would learn to

apply the strategies flexibly and adapt them as needed (Englert & Raphael,

1989, p.119). At the beginning of each day's lesson the "POWER" strategy

steps and related questions, the purpose for the strategy and the conditions

under which one would use the strategy were reviewed. The importance of

teaching conditional strategy knowledge along with declarative and procedural knowledge has been well documented in the literature (Levin, 1986, 1988; O'Sullivan & Pressley, 1984; Paris, Lipson & Wixson, 1983; Rabinowitz, 1988).

Procedural Facilitation

Think Sheets

"Think Sheets" provided procedural prompts for each of the subprocess strategies, and for the text organization. Modelling of the thinking and procedures involved for each "Think Sheet" was provided by the teacher.

The "Plan Think Sheet" focussed students' thinking about the purpose or why they were writing the assignment, the intended audience or who they were writing for, and what they already knew about the topic, through three questions:

> Why am I writing this?
> Who am I writing this for?
> What do I know about the topic?

Because of students' interests in a variety of topics, but lack of sufficient background knowledge for some of the topics they wanted to write about, they were told that they could use library books to facilitate generating ideas if they

wished. Students listed the brainstormed and researched ideas on the "Plan Think Sheets".

The "Organize Think Sheet" was used to teach students to categorize and organize the information they had listed on their planning sheets. For the descriptive report structure the questions asked were:

'How can I group my ideas into categories?"
"How can I order my ideas?"

"WH" questions were posed to help with recall of category labels and brainstormed/researched ideas were grouped into categories (e.g., Appearance, Habitat, Behaviors, etc.). The categories were ordered beginning with the most important, as were the details in each group. For the first paper, which was on a topic chosen by the group, the teacher and students used different colored markers to highlight the ideas on the "Plan Think Sheet" that belonged in each category. The groups of ideas were then mapped on to the "Organize Think Sheet". As students became more able to group and organize their ideas, they took gradual control of the Organize strategy, demonstrating different ways of organizing depending on their learning style. Four of the students chose to use a linear form for organizing their categories, while two others, who had poor visual-motor skills and subsequently slow and poor handwriting skills, preferred to color code and number the

brainstormed ideas by categories and importance right on the brainstorm section of their "Plan Think Sheet". In this manner the students were given opportunities to adapt the strategies to their needs and begin to make them their own.

For the "Write" step of the process, the importance of an effective introductory or topic sentence, the need to use transition words, to include at least two to three categories of information and to write a concluding sentence were taught. Students used the information on their Plan and Organize sheets as they wrote their first drafts.

The focus during editing was on meaning rather than on mechanics. The "Edit Think Sheet" focussed students' attention to how well they presented and organized their information for their readers. After reading their own papers, students asked themselves:

> "Which parts do I like best?"
> "Which parts are not clear?
> "Did I: - stick to the topic?"
>   - use 2-3 categories?
>   - identify each category clearly?
>   - give details to explain each category?
>   - make it interesting?
>   - use key words? (for compare/contrast only)

Students used colored pencils and marked the part of their passages they liked best with asteriks or stars, and any unclear parts with a question mark. In addition, the six questions which dealt with organization of what was written were answered either Yes, Sort Of, or No. Each student had a classmate read his/her paper and give feedback about the paper's clarity and interestingness.

Looking back over their "Edit Think Sheet" for parts identified as unclear, and No and/or Sort Of answers, students planned their revision by answering the question: "What parts do I want to change?". Just prior to writing their revised draft and completing the process ("Rewrite"), the students corrected any spelling and punctuation errors.

The students were already familiar with the "POWER" strategy and the subprocesses of the writing process when the compare/contrast structure was introduced. With the exception of the "Organize Think Sheet" which is structured differently for the comapre/contrast structure, the methods and approach for teaching the use of the "Think Sheets" were the same for the compare/contrast structure as for the descriptive report structure.

Guided Practice

Guided Practice for each of the strategy steps was provided as students

learned to write the descriptive report and compare/contrast passages. Topics

for the first descriptive report and compare/contrast paper written were

chosen by the whole group. This was to allow for teacher modelling and

guided practice of the strategy steps. Gradually students took control, chose

their own topics and used the "Think Sheets" independently.

After final drafts had been written, verbal and written

feedback was given to each student by his/her classmates and the teachers in

the Centre about the paper's organization, and how informative and

interesting their readers found their papers to be. The adults reading the

papers made comments which emphasized effort and strategy use such as, "I

can tell that you worked hard, and used good strategies." "You have a lot of

good information which is well organized in this paper." This feedback was

provided by the researcher and other adult colleagues at the Centre to develop

self-efficacy for writing and internal attributions based on effort and strategy

use. Since the emphasis was on learning to write descriptive reports and

compare/contrast structures and on learning to use writing process strategies,

the feedback did not emphasize mechanical aspects of writing. Students'

papers were published, in that they were posted on a bulletin board, and

available for anyone to read. Copies of each student's Think Sheets, rough,

revised and final drafts were made and kept in individual folders.

Throughout the process the students engaged in dialogic interactions not only with the teacher, but also with each other. This involved sharing of ideas and talking about strategies for planning, organizing and editing their writing.

In all, the students wrote four descriptive passages and three compare/contrast passages apart from the test probes.

Teacher In-Service

Each of the students' classroom and Learning Assistance Centre teachers came to the Centre to observe their students and the program prior to the students' exit. The goals and objectives of the writing program were reviewed and a model lesson of the" POWER" strategy was demonstrated. The students' writing folders were made available to the teachers for examination. Thus, the teachers were able to see how their students had used and were using the "Think Sheets" and associated strategies. A package which included the "POWER" questions, "Think Sheets", and copies of their students' writing was given to each teacher before they left the Centre. Each student was also given a copy of the "POWER QUESTIONS" cue sheet and the "Think Sheets" to take back to their classrooms.

Posttesting

Writing samples of descriptive reports were taken immediately following the completion of the teaching of the descriptive report structure (first intervention). The second descriptive report was obtained the day following the writing of the compare/contrast passage posttest sample. For the compare/contrast only one immediate posttest writing sample was administered immediately following the conclusion of the intervention dealing with this particular structure.

Post intervention metacognitive interviews were conducted at the end of the study, after the writing samples had been taken.
Six weeks after the completion of the study, writing samples were taken and interviews were conducted to study maintenance effects. These were administered by the researcher in each students' home school.

CHAPTER IV

Results and Discussion

In this chapter an examination of the data and discussion of the results

for each of the five questions will be made. Once all writing samples and

interviews had been scored, reliability measures were calculated. A colleague

marked a random sample of 16% of the interviews and 25% of the writing

samples. Interrater reliablity coefficients were .98 for the interviews, .89 for

the descritpive report writing samples and .98 for the compare/contrast

writing samples.

**What effect did the Cognitive Strategy Instruction in Writing
Curriculum have on students' writing of descriptive expository
and compare/contrast passages?**

To determine if significant changes occurred from pretest to the

posttests in students' descriptive expository and compare/contrast passages,

descriptive and inferential statistics were used. The results dealing with the

descriptive report writing will be presented first, followed by results for

compare/contrast writing.

Descriptive Expository Report Passages

Means in Table 1 suggest there was an improvement from pretest to each posttest. The mean score at the maintenance test given six weeks after the conclusion of the study was fractionally higher than the mean score at the first posttest. This suggests an improvement in students' writing of descriptive expository passages which was maintained to the level of the first posttest six weeks after the conclusion of the study.

Table 1: <u>Means and Standard Deviations of Students'
Rated Writing of Descriptive Expository
Passages (n=12)</u>

Probe	Mean	S.D
Pretest	2.83	1.70
Posttest 1	4.42	2.02
Posttest 2	6.42	1.24
Maintenance	4.75	1.14

Correlated t-tests did not reveal a statistically detectable difference between pretest and the posttest given at the end of the first intervention (t=2.048, df=11,p=.05). There was a statistically detectable improvement from

the prestest to the second posttest (t=7.404, df=11, p = .0001) and also from the first posttest to the second posttest (t=3.127, df=11, p<.05).

The correlated t-test was also run to see if there was a detectable difference between pretest and maintenance test: there was (t=3.027, df=11, p<.05). The improvements in writing descriptive expository passages were maintained six weeks after the end of the study.

There are two possible explanations for these findings. First, learning to be an effective writer takes time and practice. While a total of four descriptive passages had been written by the end of the first intervention period, only two written papers had been independently organized and completed by the students. Hence, insufficient time to learn the structure to mastery may account for the lack of detectable differences at posttest 1. Second, the two text structures that were taught share a common organization structure. Both structures as they were taught require information to be organized by categories which are supported by details. As students learned and practiced the organization and writing of the compare/contrast structure, they also may have consolidated their understanding of the organization of descriptive expository text.

Further comparisons between the pre, post and maintenance tests are provided by the box plots in Figure 1. The box in each plot, which describes

the middle 50% of the distribution, extends from the first to the third quartile. Whiskers extend from the first and third quartiles to the tenth and ninetieth percentile (Glass & Hopkins, 1984). Any scores which fall beyond the tenth and ninetieth percentile are outliers and are shown as circles. The line inside the box denotes the median score.

Figure 1 is a visual representation of the data which were reported in the previous paragraphs. The effect of the intervention is demonstrated by a higher median value at the first posttest and less dispersion of scores with a higher median value at delayed posttest. Students' improvements and maintenance of learned skills are clearly seen.

Figure 1: Boxplots of Students Rated Writing of Descriptive
            Expository Passages at Pretest, Posttest 1, Posttest 2
            and Maintenance

Key: * Median
      ° Outlier
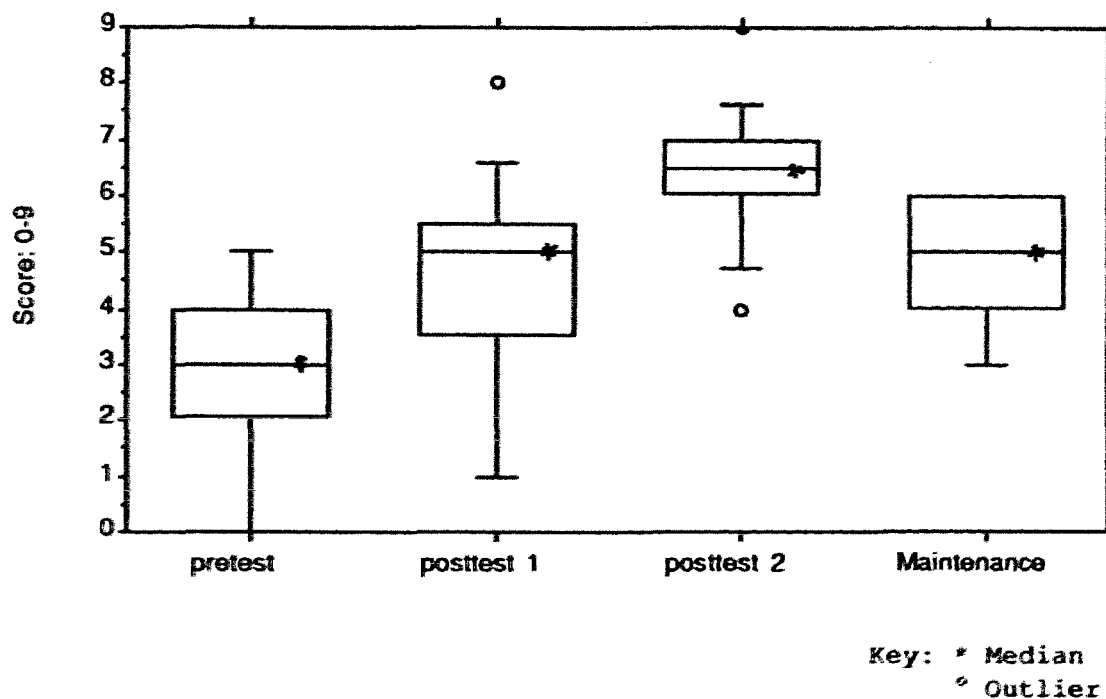
To illustrate qualitatively the changes in students' writing of descriptive report papers, pretest and posttest writing samples for three students are presented in Figure 2. These samples are reflective total writing scores which fell within the the mean score 6.42 (SD 1. 24) at the second postest.

As the pretest samples illustrate, these students had difficulties sustaining their thinking despite the fact they had chosen topics they were familiar with and had a lot of information about. For all three students, there was little structure to the information that was written, it was merely put down in a linear fashion, suggesting that at pretest these students used a knowledge telling strategy to complete the writing task.

The changes in the students' papers at the posttest evince an increased knowledge of how to organize and structure their text to fit the descriptive report structure. The papers adhere better to the chosen topic and are better organized. They are also more interesting to read. All of this shows not only an improvement in the ability to write descriptive reports, but also suggests an increased awareness of writing purpose and audience.

Figure 2: <u>Pretest and Posttest Writing Samples of Three</u>
             <u>Students</u>

<u>Student 1: Pretest</u>

football

football is a sport you can make feeld goles or touchdown and it is tackl. It is rel good sport and you yous pading.

<u>Student 1: Posttest 2</u>

Spiders

Spiders live all over. They are many kinds of spiders. ther is a tarantula, wolf spiders under grand spider.

Spiders help people because they eat all the insets. If we didn't have spiders the earth will be filled with insets. Spiders catch there pray by making a web. It is so stiky that a insikt cannot get away. When an inset get stuck the spider pirses it with a leg and then the spider wrap him arond and eat it later.

Ther are lots of spiders. some of them can bite and kill a human. These are tarantual and a wolf spider.

<u>Student 2: Pretest</u>

Code 100 is the tallist trak. code 83 and code 70 and 55 are the sisis from rail. code 100 83 70 on for 1-10 scale. code 55 is for in scale code 100 is for evry yus. nume line trak code 83 and 70 are manly ofr sivic yards.

<u>Student 2: Posttest 2</u>

Cats

Cats are furry and hugabal pets. But they are fussy eaters. they sleep lots (I guess so they can play at night). They have claws and often need to sharpen them by pulling on carpet to get exses off. Cats can allsow see in the dark. There puple expandes much larger then yours and mine! When playing theyre not fooled easly by triking them. Cats love to play with rubber bands, strings, ball, and allmost anything that moves.

<u>Student 3:Pretest</u>

Keremeios is aplace where it is sarounded by mountins and radasnakes. there is rock slides. It's dry and dusty and cold and with lots of mistikoes.

<u>Student 3: Posttest 2</u>

Drumheller

Drumhellar is in sothern Alberta. It is fun there. You can go to the tryale museam. Wh go to Drumhellar you go past lots of frams and a carnival. You can find fossils there. When it's s it's hot. It has golf couses an mini golf and a twelve man church.

Compare/Contrast Writing

Means in Table 2 suggest there was an improvement from pretest to posttest. The small difference between the means of the posttest and maintenance test suggests that the students maintained the effects for writing compare/contrast passages six weeks after the study.

Table 2: <u>Means and Standard Deviations of Students'</u>
<u>Rated Writing of Compare/Contrast Passages</u> (n=12)

Probe	Mean	S.D
Pretest 1	3.58	1.73
Posttest	7.25	2.18
Maintenance	6.67	1.92

Correlated t-tests for the compare/contrast passages indicate a statistically detectable improvement from pretest to posttest(t=4.158, df=11, p < .005) and from pretest to maintenance (t=3.305, df=11, p <.005).

Box plots were also constructed for the compare/contrast writing sample results. Figure 3 is a visual representation of the data. The effect of the intervention is demonstrated by a higher median value at posttest. While there was a narrower dispersion at maintenance, the median was

above that of the pretest. From examination of the box plots in Figure 3, the improvements in learning to write compare/contrast papers at posttest and maintenance of those skills learned six weeks after the conclusion of the study are clearly visible. Examination of the raw data shows that the outlier scoring above the ninetieth percentile at the posttest and at maintenance was the same student.

Figure 3: Boxplots of Students' Rated Writing of Compare/Contrast Passages at Pretest, Posttest and Maintenance

Key: * Median
      ° Outlier
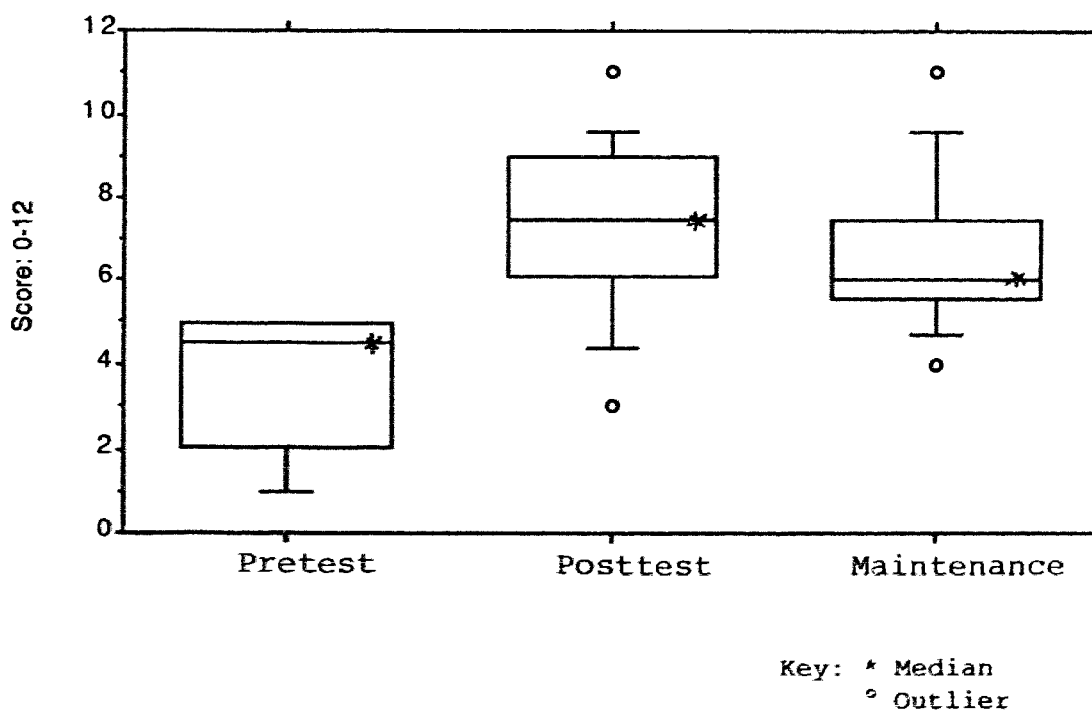
To illustrate qualitatively the changes in students' writing of compare/contrast papers, pretest and posttest writing samples for three students are presented in Figure 4. These samples are reflective of total writing scores which fell within the group mean score 7.25 (SD 2.18) at the posttest.

The samples clearly show the changes in the three students' ability to write compare/contrast papers from pretest to posttest. The changes at posttest are evidence of greater understanding of the organization and structure of compare/contrast text. The students showed improvement not only in their organization of the text, but also in their ability to stay on topic and to make the papers interesting to read. Students' personal voice and attempts to engage the audience are evident. This suggests also an increased awareness of both writing purpose and audience needs.

Question One Summary

The analysis of the data for the writing samples indicates an improvement in the students' writing for both the descriptive expository and the compare/contrast structures from pretest to posttests. Students maintained the knowledge and skills learned for writing the two structures six weeks after the end of the study. The improvements in writing reflect an increasing use of text structure organization. The writing samples presented also suggest an increased awareness of audience.

Figure 4: <u>Pretest and Posttest Compare/Contrast Writing Samples
            of Three Students</u>

<u>Student 1: Pretest</u>   <u>Vancouver Island and Vancouver</u>

There different becaue Vancouver Island has more beaches. There's more malls. We have the same cars and stores like 711 and Mac and Safeway.

<u>Student 1: Posttest</u>   <u>Dwayne and Mike</u>

Dwayne and Mike are both boys I know and hang around with. Dwayne has blond hair and Mike has brown hair. They both have brown eyes. Dwayne is short and Mike is taller and there both 14 years old. Dwayne lives close to me but Mike lives far from me.

They both play street fighter II. Mike can pass it but Dwayne can't. They both play Tetriss but Dwayne dies faster and Mike can pass it.

They are both nice sometimes. And they always ask me for money. I like them both the same.

<u>Student 2: Pretest</u>   <u>Bee and Wasp</u>

They both have something on their bodies and the bee can fly. They have a quen and a king. The quen lays eggs if she stops laing eggs they kill them.

<u>Student 2: Posttest</u>   <u>Boxer and Pitbull</u>

Did you know that a boxer and a pitbull are two cind of dogs? The boxer is a much more nasier dog, but a pitbull is a much faster dog.

The behaviors of the boxer and a pitbull are the same. They are gard dogs. They like to play games like fetch and running games mostly. They both eat dog food but they mite eat diffrunt food depending on there age and helth.

<u>Student 3: Pretest</u>   <u>Ice Hockey and floor hockey</u>

They are like hocky but you use ice skate and one with shoes.

<u>Student 3: Posttest</u>   <u>Friends</u>

Me and my friend. My friends name is Prince. I am older then him. We go to the same school, but not in the same class. He is good in reading and he helps me with my homework. When I am sad he helps me to feel better. We like to play football together and nintendo. We like music, and sometimes we make up songs. We both like junk food like hamburger. We both like to watch tv and owr favrit tv show is in living color.

> **What was the effect of the Cognitive Strategy Instruction in Writing Curriculum on students' metacognitive knowledge of text structure organization for descriptive expository and compare/contrast structures?**

The effects of CSIW curriculum on students' text structure knowledge was determined through analyis of responses to the metacognitive interview questions "How should Billy/Debbie organize the paper?", "Is Billy/Debbie doing the assignment right?", "Is this paper finished?", and "What changes would you make?/Let's fix this paper". Thus, students' knowledge of text structure in terms of planning and monitoring/revising was investigated. Numerical values between 0 and 3, which reflected the level of knowledge of text structure organization, were assigned to allow for analysis and comparisons to be made through Box and Whisker plots. Responses to the interview questions were also analyzed qualitatively to provide more detailed insight into the category of responses given

Descriptive Expository Report Structure Knowledge

Mean scores in Table 3 suggest a notable difference in the students' abilities to talk about how descriptive text should be organized on the planning question ("How should Billy/Debbie organize?") from pretest to posttest. Improvements on the monitoring/revising question ("Help Billy/Debbie fix/change this paper.") are also suggested.

Table 3: <u>Means and Standard Deviations for</u>
<u>Metacognitive Knowledge (Planning and Monitoring)</u>
<u>of Descriptive Text Structure</u>

	<u>Planning</u>	<u>Monitoring</u>
	M SD	M SD
Pretest	.33 (.78)	1.00 (.43)
Posttest 2	2.33 (.89)	1.75 (.87)
Maintenance	2.17 (1.12)	1.58 (.79)

To assist with the interpretation of the statistics, responses were analyzed qualitatively for high, medium, and low or possible lack of knowledge. At pretest, ten students scored 0, indicating a lack of knowledge on the the question asking how Billy/Debbie should organize a descriptive report about cats. Analysis of the interview data indicated for those 10 students either a lack of understanding of the meaning of this question with the response, "I don't know" or the giving of extraneous or irrelevant details. Two students provided a combination of details and categories without a clear distinction of how details support categories. This gave them a score of 2. While half of the students thought that the fictitious classmate was doing the assignment correctly, because he/she was "kind of sticking to the topic", eleven of the twelve students, did not think that the paper was finished. When asked to fix and/or change the paper, one of the students indicated that

the paper was not organized clearly and logically, and suggested that more details were needed. Ten of the twelve subjects, indicated that they would make the paper longer, and fix mechanical errors. One indicated that there were spelling and punctuation errors that needed correcting.

At posttest, half of the students stated that Billy/Debbie should organize their information for a report on dogs by categories. One student said, "Well, like what kind of dogs there are, and their behaviors, and what they look like. Then when he organizes it he should put it in order and everything, he should web and he should put number of the ones he wants to start with and then start with an opening sentence, because it makes it kind of interesting and tells what he's talking about." Another indicated the following response, "Organize? Oh,what type would probably come first because it's the most important if you're writing about a type of dog, what it looks like, where it is from and found, and behaviors." Five students, gave combined category and detail information with no clear distinction how details support categories. One student in this category suggested, "Put in about behaviors, sizes, what kind of dog it is, and then I would put first what kind of dog it is, and then second is the size, and that it eats bones." For the the remaining one student, the question did not apply as information extraneous to the topic was supplied. Nine students felt that the assignment was not being done correctly, and ten felt that it was not finished. When asked what changes they would make, nine students responded with ideas

that related to the need for better organization and defining of information by categories, two indicated that there was a need to make it longer, add some words and to supply punctuation. One student did not answer the question.

At maintenance, half of the students suggested that Billy/Debbie should organize information for a report on cars by categories, beginning with the most important. Three students mixed categories and detail information. The remaining three students, who scored 0, did not respond or gave extraneous information. In response to whether the paper was being done correctly and finished, five students stated that is was being done correctly, while eleven stated that it was not finished. Two students, suggested that Debbie/Billy should have given information by categories, such as type of car, its uses and some of its features or appearnce. Six felt that it needed more details that described the car. Three students felt that Billy/Debbie needed to make it longer, without giving any specifics , while one, said that spelling errors needed to be corrected.

The box and whisker plots in Figure 5 provide a visual representation of the data presented in the previous paragraphs. The first box in each panel reflects the suggested organization and the second box indicates the suggested changes in organization. The improvements in students' metacognitive knowledge are shown by the changes in the distribution of scores and higher median values at posttest. This reflects an increased ability to talk about how

to plan as well as monitor text so it fits the desired text structure. At posttest, statable knowledge scores on the the planning question were more narrowly dispersed, and had a higher median value compared to the suggestions for revision. The data show that improvements in metacognitive text structure knowledge were relatively well maintained six weeks after the study.

Figure 5: <u>Boxplots of Students' Statable Knowledge of Descriptive Report Text Structure at Pretest, Posttest and Maintenance</u>
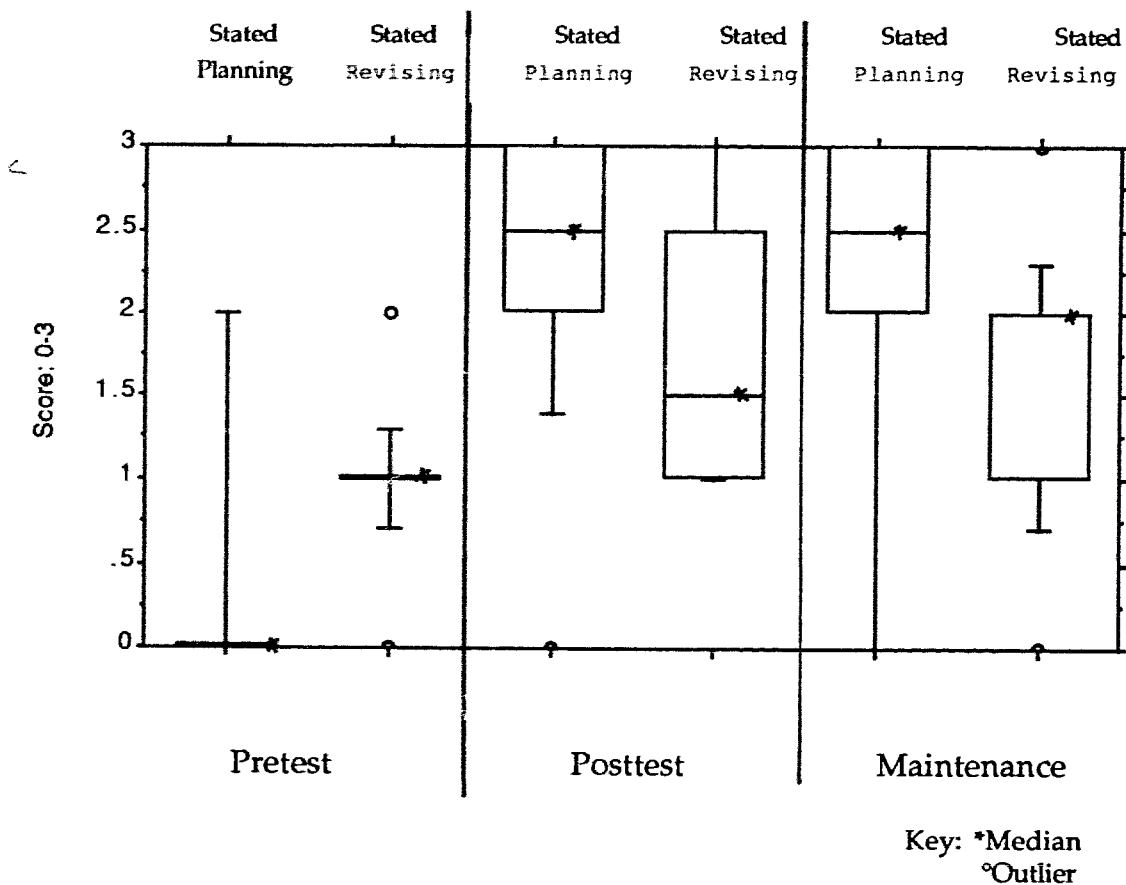
In summary, the data indicate an improvement in metacognitive knowledge of the descriptive report structure. The students demonstrated

more improvements in their ability to talk about how text should be planned and organized compared to how to revise it to fit the structure. This pattern was also evident at maintenance.

Compare/Contrast Text Structure Knowledge

Mean scores in Table 4 suggest there was an improvement in students' abilities to talk about how compare/contrast text should be organized both in terms of planning and monitoring and revising to fit the structure. The improvements on the planning question were relatively well maintained six weeks after the study. The mean score for the monitoring/revising question was fractionally higher at maintenance than at posttest.

Table 4: <u>Means and Standard Deviations for Metacognitive Knowledge (Planning and Monitoring) for Compare/Contrast Text Structure</u>

	Statable Knowledge	
	Planning	Monitoring
	Mean (SD)	Mean (SD)
Pretest	.25 (.62)	.83 (.84)
Posttest	1.92 (.72)	1.50 (.80)
Maintenance	1.42 (1.38)	1.68 (.99)

To assist with the interpretation of the statistics, responses to the interview questions were analyzed qualitatively for indicators of high, low, medium or no knowledge, based on the scoring criteria discussed in Chapter 3. At prestest students were asked to help Billy/Debbie organize and revise a paper that compared and contrasted dogs and cats. When asked how Billy/Debbie should organize such a paper, ten students' responses suggested a lack of knowledge of the the compare/contrast text structure. Responses included either, "I don't know", or extraneous and irrelevant information. One student gave a random list of details, indicating low knowledge. One other student stated that Billy/Debbie should put down all things that are the same, then all those that are different, but did not make any category distinctions. This suggested medium knowledge. At the pretest half of the students felt that the assignment was being done correctly, while two students suggested that it was finished. Five students' responses to the monitoring question focussed on mechanical changes of spelling and punctuation, and four on increasing the length of the paper. Three students added details which told more about how the two animals being compared were alike and different, while one student added compare/contrast key words and attempted to reorganize the information into categories.

At posttest students were asked to help Billy/Debbie organize and revise a paper that compared sharks and whales. On the planning question,

five students rated a high knowledge score. Three students' responses indicated medium knowledge. These students suggested adding details that told how they were alike or different, but not both. The remaining three students either did not reply to the question or gave extraneous information, indicating lack of knowledge of the compare/contrast structure. Only one student felt that the paper was finished, and two that it was being done correctly. Three students suggested surface level changes, such as spelling, four on adding some details and on correcting mechanical errors, four others on providing detail and category information. One student suggested that the paper needed to be restructured by categories, which included details about how the whale and shark were different and alike, and also suggested the need for some key words. This suggested high knowledge.

At maintenance students were asked to help Billy/Debbie organize and revise a paper that compared and contrasted frogs and toads. On the planning question, three students' responses indicated high knowledge of compare/contrast text organization. Half of the students indicated medium knowledge, and two students indicated low knowledge. One student refused to respond to the question, resulting in a 0 score. This must be interpreted with caution, as it may not actually indicate a lack of knowledge, but could indicate a lack of motivation or non-compliant behaviour. Five students said the paper was being done correctly and three suggested that the paper was finished. Six of the students indicated and made changes which reflected

medium knowledge of the text structure. The changes suggested and made were to add one or two key words, to reorganize by moving sentences that belong together, and comparing the two animals by describing first one and then the other. Two students added details as well as correcting spelling and punctuation errors, while four student suggested and made no changes. It must be noted, however, that of these four, two had previously indicated that the paper was not right because it focussed too much on one animal. This suggests some understanding of the need to have parallel information in a compare/contrast passage.

Box and Whisker plots in Figure 6 provide a visual representation of the data presented in the previous paragraphs. The first box in each panel reflects the suggested organization from the planning question, and the second box indicates the suggested changes from the monitoring/revising question. Improvement in stated knowledge of the compare/contrast structure from pretest to posttest is indicated by the changes in dispersions and higher median values. A wider dispersion and a higher median value is shown on the planning question compared to the monitoring question. While students' improvements and maintenance of knowledge of compare/contrast structure are clearly seen, the data suggest the students performed better on the monitorng/revising question than on the planning question at maintenance.

Figure 6: <u>Boxplots of Students' Statable Knowledge of</u>
<u>Compare/Contrast Text Structure at Pretest Posttest and</u>
<u>Maintenance</u>

Key: * Median
     ° Outlier
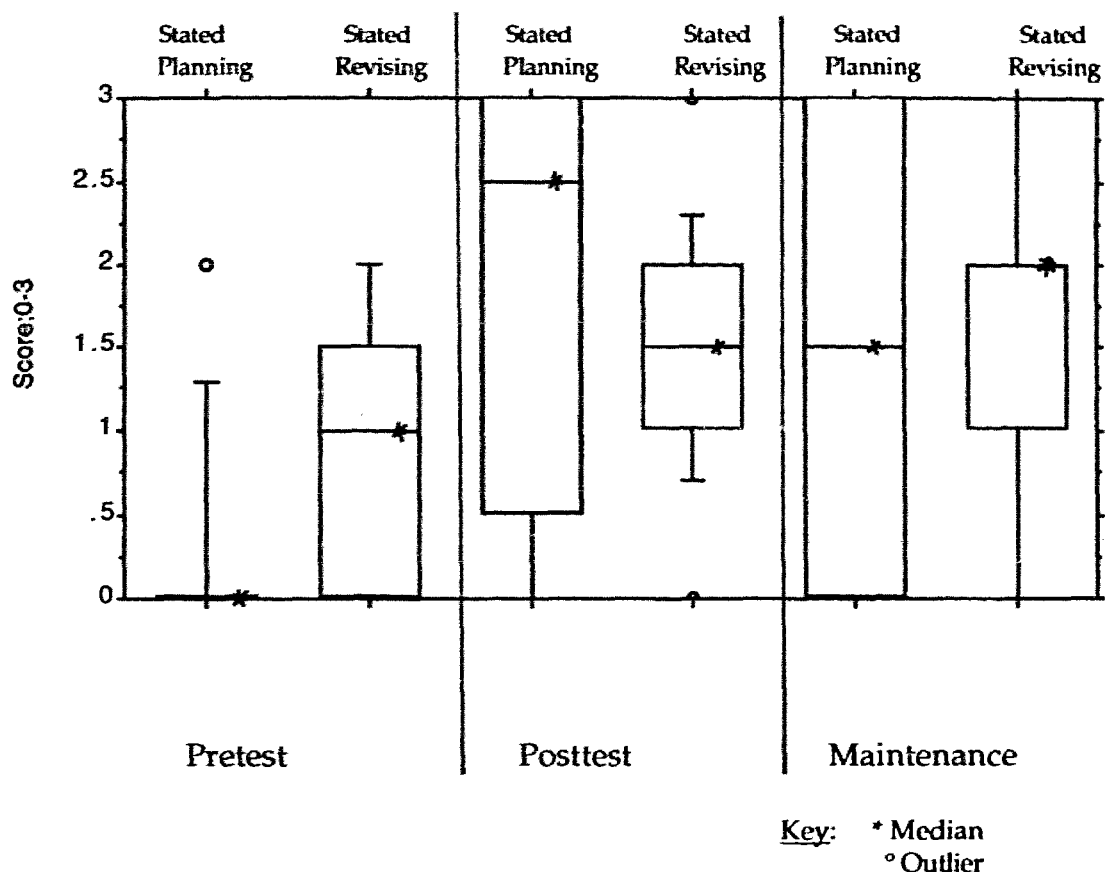
Question Two Summary

In summary, the data and box and whisker plots in Figures 5 and 6

clearly show that the students improved in their metacognitive knowledge of

the two text structures. This improvement was reflected in their ability to

verbalize about how each text structure should be organized. At posttest,

student' ability to talk about how to generate ideas and organize them to fit

the text structure showed more improvements than did their ability to

monitor text and suggest revisions to fit the structure.

Did the Cognitive Strategies in Writing Curriculum successfully induce metacognitive knowledge of prewriting strategies and actual use of prewriting strategies in the students?

Responses to the interview question, "When you are asked to write a paper, what do you do first?", and students' observed use of prewriting strategies were were analyzed to determine changes in students' statable knowledge and actual use of prewriting strategies. To allow comparisons of statable knowledge with demonstrated use of prewriting strategies, observations of strategy use were given a numerical code to match the values on the interview question. See Chapter 3 for more details. Mean scores in Table 5 suggest a notable gain in students' stated knowledge or prewriting strategies from pretest to posttest.

Table 5 : <u>Means and Standard Deviations for Knowledge of Prewriting Strategies at Pretest, Posttest, and Maintenance</u> (n=12)

		Pretest	Posttest	Maintenance
What do you do first?	Mean	.50	2.17	1.58
	S.D	(.52)	(1.03)	(1.17)

Qualitative analysis of the interview data was conducted to assist with the interpretation of the statistics. At pretest, all twelve students' responses

indicated that the first thing they would do is either write the date or title, draw a margin, or "think and then write".

At pretest the relationship between the students' lack of statable knowledge and actual prewriting strategy use was matched for both structures. In writing the descriptive reports, nine students wrote the date, their name and the title and immediately started to write, while three others took some time to think and then started writing. When writing the compare/contrast papers at the pretest, none of students demonstrated any reflective thinking or use of prewriting strategies.

At the posttest, students' declarative knowledge of prewriting strategies had shifted. At this time nine of the students indicated that they would do some prewriting activity. Six of those nine students stated that they would use prewriting strategies which included organization of ideas by categories. For example, one of the six students said, "Put down my ideas, to plan my ideas, then I organize my ideas, and put them in order and then write my rough draft." Another stated, "First, I ask myself, who am I writing this for, why am I writing this, and then I brainstorm what I know, and organize my words". Yet another suggested, "Plan it, like ask myself what I know about it and who I'm writing it for, and then write the stuff down in groups together." Three of them said that they would make a list of ideas or information, while the remaining three students said that they would think about what they

were going to write and then write.

Actual observed strategy use at this phase showed that when writing the descriptive report papers, half of the students spontaneously listed their ideas, then webbed or categorized and ordered the categories according to importance. One student brainstormed a list of ideas, while the remaining five students did not demonstrate any prewriting strategies that were visible.

When writing the compare/contrast papers, seven students made a compare/contrast organize sheet before they started to write. Two made a list of ideas, and the remaining three students demonstrated no overt use of prewriting strategies. They wrote a title and began their compositions.

Six weeks after the end of the study, seven of the students stated that they would use some form of prewriting strategies. Three of the seven indicated that they would organize information by categories, while four said they would list or brainstorm their ideas before they wrote.

At maintenance, four students demonstrated spontaneous use of prewriting strategies while writing descriptive reports. Three of those webbed or mapped their ideas and ordered them by importance and one student made a list of ideas before writing. The remaining eight students demonstrated no prewriting strategy use. One of these eight students did

remark however, "I could web first, but I won't because I'm not going to be marked on this." This could suggest that the motivation to make the effort to use prewriting strategies depends on the student's perception of the utility of the task. The lack of spontaneous strategy use for the remaining students supports the findings from other studies (e.g. Chan, Cole, & Morris, 1990) where students failed to use strategies they had learned without cueing. While writing the compare/contrast papers three students made a compare/contrast sheet, two others made a list of ideas and the remaining seven demonstrated no overt prewriting strategies.

To allow for comparisons of statable knowledge of prewriting strategies with demonstrated strategy use, boxplots were constructed. Examination of the boxplots in Figure 7 provides a visual presentation of the differences between students' statable knowledge and actual use of prewriting strategies between the prettest, posttest and maintenance. The first box in each panel reflects students' stated knowledge of prewriting strategies. The second box shows their actual use of prewriting strategies while writing descriptive papers, and the third box actual strategy use while writing compare/contrast papers. It can be clearly seen that students' statable knowledge and strategy use increased from pretest to posttest.

The improvements in demonstrated strategy use at the posttest are noteable for both text structures. There was a wider dispersion with a higher

median score for the descriptive report. The difference between pretest and

posttest for the compare/contrast structure is also notable. The lack of a

boxplot at the pretest shows that students did not demonstrate any

spontaneous use of prewriting strategies when writing compare/contrast

papers. Positive changes at posttest are indicated by the changes in

dispersions and higher median values. **The students' articulations were**

more narrowly dispersed compared to actual strategy use when writing

descriptive reports. The boxplots at maintenace suggest that statable

knowledge of prewriting strategies were maintained relatively well. The

negatively skewed distributions and lower median scores at maintenance

show a decline in the use of prewriting strategie. The boxplots also show a

difference between articulations about strategy use and actual performance.

Question Three Summary

In summary, the data suggest that the CSIW curriculum had a positive

effect on students' metacognitive knowledge and use of prewriting strategies.

The data also suggest that students' verbalizations about strategy use did not

always match their performance. Maintenance testing shows that there was a

decline in students' use of spontaneous of prewriting strategies, while

verbalization about the strategies they would use was relatively well

sustained.

Figure 7: <u>Boxplots Comparing Statable Knowledge</u>
<u>of Prewriting Strategies with Demonstrated</u>
<u>Strategy Use at Pretes, Posttest and Maintenance</u>
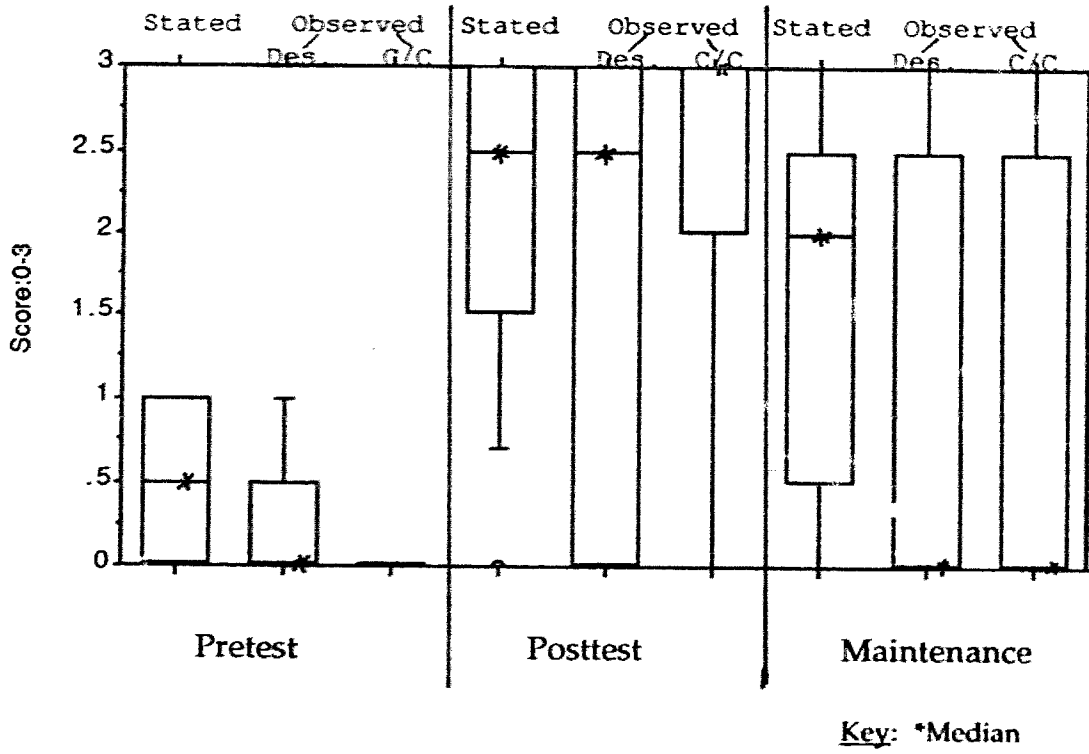
How effective was the CSIW curriculum in inducing awareness
and metacognitive knowledge of purpose for writing, of audience,
and of editing strategies?

To determine if there were changes in the students' awareness of
writing purpose and audience, as well as editing strategies, responses to the
interview questions, "Why do you write?', "Wh reads your writing?" and
"When you have written a paper, what changes could you make?" were
analyzed qualitatively and through descriptive statistics.

Table 6: Means and Standard Deviations for
Responses to Metacognitive Interview Question
"Why Do You Write" (n=12)

		Pretest	Posttest	Maintenance
Why do you write?	Mean	1.00	1.50	1.25
	S.D.	(.60)	(.15)	(.62)

The means in Table 6 for the question, "Why do you write?" suggest
improvement in awareness of writing purpose from pretest to posttest.

Analysis of the interview data shows that at pretest ten students
thought writing to be a task that "teachers make me do", or that "help me
learn". The other two stated, "Never thought about it", and "So I don't have
to print". Posttest interview analysis showed a change in awareness, for half

of the students whose reponses indicated writing to be a communicative act. Responses such as, "You write for, to teach people about things", "To teach people how to learn things", "To tell people what you've been doing", are indicative of this change. At maintenance five students' responses indicated writing to be a communicative act, while the remaining seven suggested they wrote for the teacher and to improve their skills.

The box plots in Figure 8 further support this finding. The change in dispersion and the higher median score at posttest shows improved awareness of writing purpose. The data show the changes in awareness of writing purpose to have been relatively well maintained.

Figure 8: Boxplots of Student's Statable Knowledge
of Writing Purpose at Pretest, Posttest
and Maintenance

Key: ° Outlier
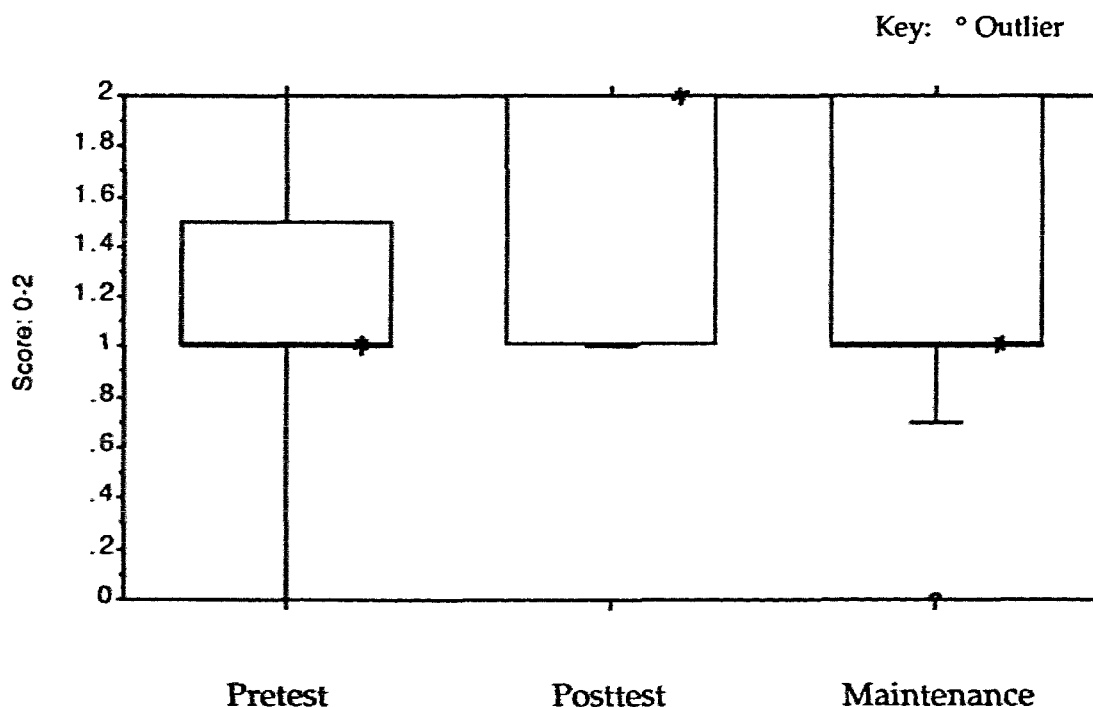
Mean scores in Table 7 for the question, "Who reads your writing?"
suggest there was a notable change in students' awareness of audience.

Table 7: Means and Standard Deviations for
          Responses to Metacognitive Interview Question,
          "Who Reads Your Writing?" (n=12)

		Pretest	Posttest	Maintenance
Who reads your writing?	Mean	1.25	2.33	2.08
	S.D.	(.62)	(.49)	(.67)

Analysis of pretest interview data shows a limited awareness of
audience. The majority of responses, eleven students, indicated that the
teacher, and occasionally parents read students' writing. The responses did
not reflect any indication that students' writing might be informative to
others. At the posttet, all twelve students had shifted their thinking about
audience to include a wider variety of people. Posttest interview responses
included such comments as, "anyone who wants to", "someone, or kids who
want to learn, get information", and "other kids, teachers". By the posttest
the students had experienced their papers being read by a variety of people,
both adults and children, providing them with evidence that there is a wider
audience for one's written products, not just the teacher who set the
assignment. At maintenance three students' responses suggested that their
writing was read by people who wanted to learn or get information. Eight of

the students suggsted that their writing was read by teachers and possibly their parents, and one student indicated that it was the teacher who set the assignment.

Figure 9: <u>Boxplots of Students' Statable Knowled of Audience at Pretest, Posttest and Maintenance</u>

Key: *Median
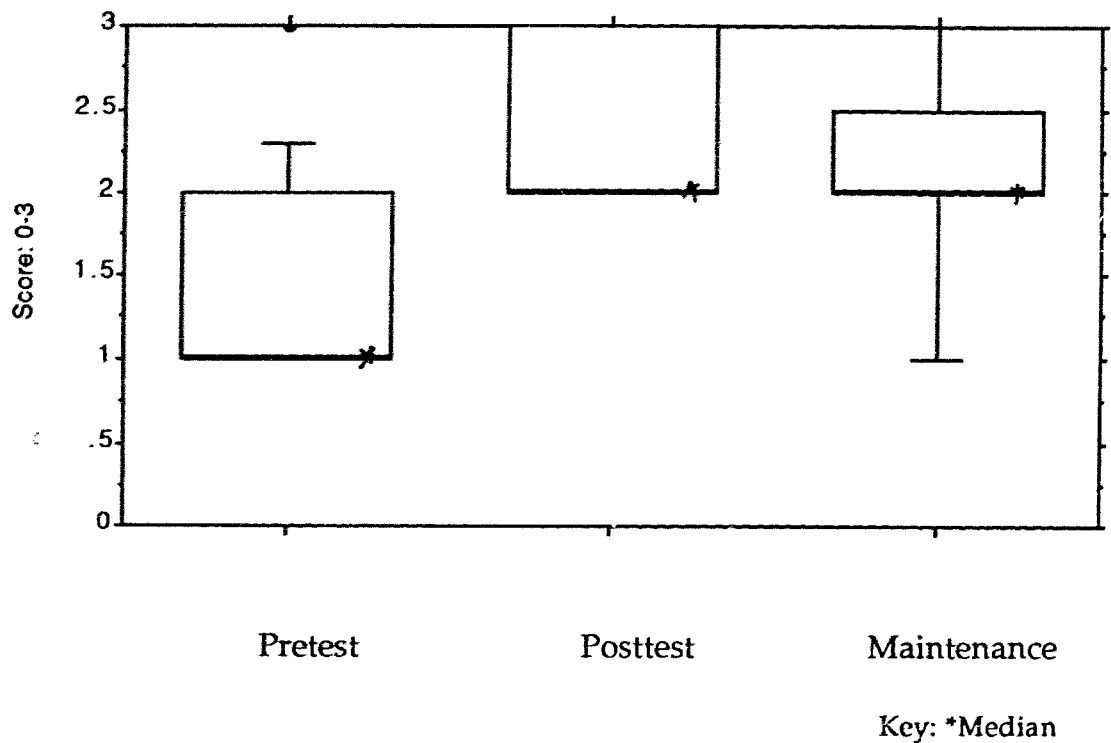
The box plots in Figure 9 provide visual evidence of these results. At pretest half of the students indicated a limited audience awareness, with one outlier whose response reflected awareness of a wider audience. The outlier could be explained by the fact that this student' s home school had put on a "Writer's Fair" the previous spring. The changes in awareness of audience at the posttest are clearly visible. The data suggest that students' awareness and

statable knowledge of writing audience were relatively well maintained compared to their performance at pretest. The changes in awareness of audience were also reflected in the students' writing as has been discussed in the first section of this Chapter.

While one of the major objectives of the intervention was to improve use of prewriting strategies, editing and revision of papers were included in the intervention as part of the total writing process. Since editing was not emphasized as much as prewritng, pretest-posttest data analysis of changes in knowledge of editing strategies focussed only on stated knowledge.

Table 8: Means and Standard Deviations for
Responses to Metacognitive Interview Question,
"What Changes Could You Make?" (n=12)

		Pretest	Posttest	Maintenance
What changes can you make?	Mean	1.08	2.42	1.58
	S.D.	(.67)	(.97)	(.90)

Table 8 gives the group's mean scores to the question "When you've finished writing a paper, what changes could you make?" Means in Table 9 suggest there was an improvement from pretest to postest. The mean score at maintenance suggests that the knowledge of editing strategies was relatively well sustained.

Qualitative analysis of the interview data was carried out to assist with the interpretation of the statistics. At pretest, seven students' responses to the question, reflected poor and low knowledge of editing strategies. The responses dealt with fixing mechanical errors such as spelling and punctuation, and making it longer to fill the page, or asking the teacher. Posttest interview data reflects a shift from a focus on surface level features of text to more verbalizations about editing for clarity, the need for sufficient information and discussion about organization. Eight students suggested they would make changes that focussed on meaning, clarity and organization. For example, one student stated, " Like a category that doesn't fit, you have to put it in the right place.". Another said, "Take a sentence from one paragraph and put it into a different paragraph". Two students' responses suggested they would make sure they had sufficient information and details, while one student focussed on mechanics and surface level features. At maintenace, two students suggested they might make changes in the organization, and clarity of their paper, while four indicated they would add more details, and make sure they had sufficient information. Five others focussed on length only, and one on mechanical features of the text.

The box plots in Figure 10 provide opportunities for visual examination of these results. The increased awareness and knowledge of editing strategies at the posttest is clearly evident in the change in dispersion and higher median value. Maintenance of this knowledge was again,

relatively well sustained. From the data presented here, it can be said that the CSIW curriculum was effective in changing students' awareness of editing and revising strategies.

Figure 10: <u>Boxplots of Students' Statable Knowledge of Editing Strategies at Pretest to Posttest and Maintenance</u>

<div align="center">
Pretest   Posttest   Maintenance

<u>Key</u>: *Median
°Outlier
</div>
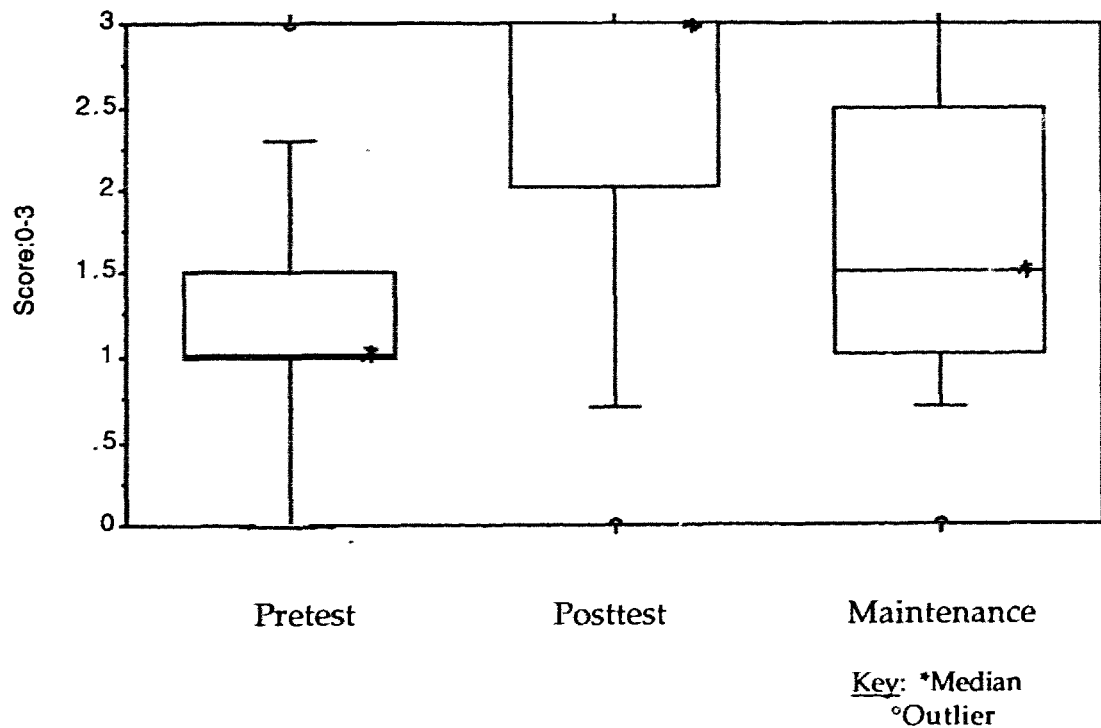
Question Four Summary

In summary, the analyisis of the data indicates an improvement in metacognitive knowledge of writing purpose, audience and editing strategies from pretest to posttest. The improvements in students' metacognitive knowledge were relatively well maintained.

What effect did CISW have on students' self-efficacy

and related attributions for writing?

To determine changes in the students' self-efficacy and related attributions for writing, the students were asked to rate the descriptive report papers they had written at pre and posttests, on a 5 point scale (very good, good, fair, needs improvement, and poor), and give reasons for the expected mark.

Table 9: <u>Group Mean and Standard Deviation Scores</u>
<u>for Self-Efficacy Ratings for Writing</u>
<u>Descriptive Reports at Pretest, Posttest 1, and Posttest 2</u>

	Mean	(S.D)
Pretest	2.5	.80
Posttest 1	3.25	1.06
Posttest 2	3.50	1.17

Means in Table 9 suggest there was a change in students' self-efficacy from pretest to each posttest. The boxplots in Figure 11 are a visual representation of the changes in students' self efficacy ratings. The dispersions and higher median values at the posttest show the changes in students' expected outcome ratings.

Figure 11: <u>Boxplots of Self-Efficacy Ratings at Pretest, Posttest 1 and</u>
<u>Posttest 2</u>

* Median
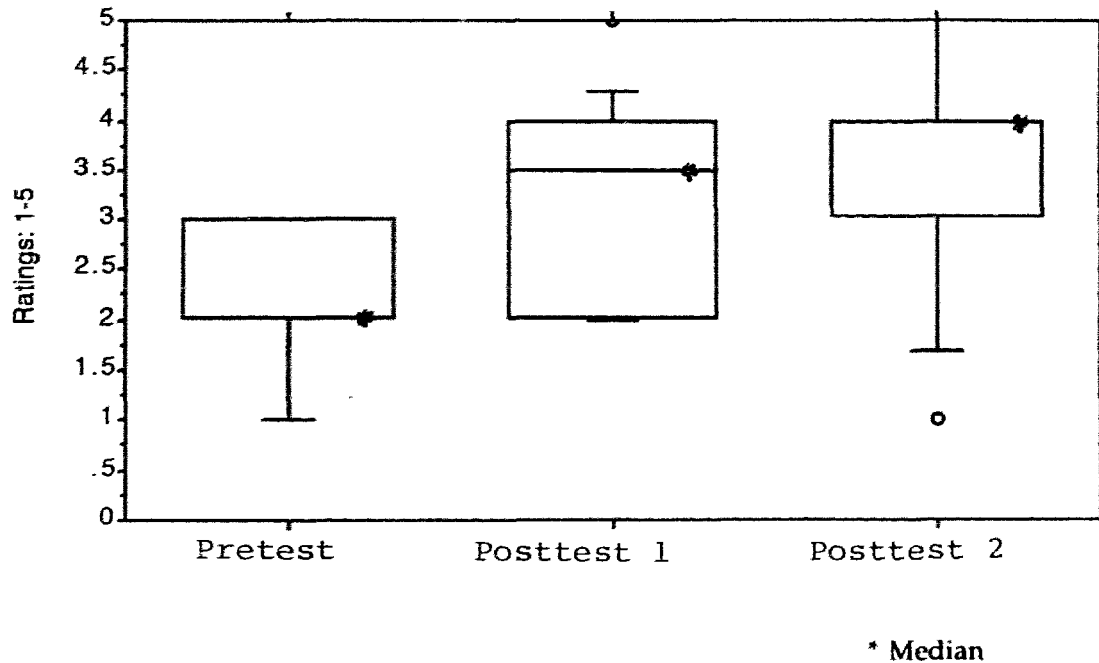
Qualitative analysis of the data shows that at pretest none of the students expected a mark above fair. Eight students expected fair, two expected needs improvement and two expected poor. At the first posttest a total of four students expected either a very good or good rating, with none of the students expecting a poor rating. The positive trend for expectations. continued at the second posttest, with more than half of the students expecting either a very good or good mark, and only one student expecting a poor mark.

Students' attribution statements were categorized for ability, effort, strategy use, and task ease/luck. Thus, "I am smart", and "I am a good writer"

were categorized as ability attributions, and "I am lucky", "The teacher likes me", and "The work was easy", as task ease/luck attributions. There were students who suggested attributions other than the ones they could choose from. These are shown under "Other" in Table 10 which also shows the frequency of responses for each of the attribution categories.

An increase in attributions for effort and strategy use is indicated at the first posttest. This trend continued at the second posttest when more than half of the students made attributions for effort and strategy use.

Table 10: Frequency of Reported Attributions at Pretest, Posttest 1 and Posttest 2

	Pretest	Posttest 1	Posttest 2
Ability	1	1	2
Effort	3	5	2
Strategy Use	0	2	5
Task Ease/Luck	5	1	2
Other:			
Always get that mark	1	1	0
Didn't use good strategies	0	2	0
Didn't work hard	2	0	1

This data suggests that students began to see the effects of using strategies on their writing performance. Although attribution retraining was not part of this study, it is felt that feedback which emphasized strategy use and effort had an effect on this result.

Question Five Summary

In summary, the data suggest a positive change in students' performance expectations for writing the descriptive papers. Changes in attributions related to outcome expectations are also indicated as students made more attribution statements related to strategy use at the end of the intervention.

CHAPTER V

Conclusions

In this study, the <u>Cognitive Strategy Instruction in Writing</u> (CSIW) program developed by Englert and her colleagues (Englert, 1990; 1992), was used to teach writing skills and strategies to a group of 12 learning disabled students. Of interest were the effects of the CSIW intervention on students' knowledge and skills for writing descriptive reports and comapre/contrast papers, on their knowledge and use of prewriting strategies, and their awareness of writing purpose, audience and editing strategies. Also of interest was the students' self-efficacy for writing and related attributions or self perceptions about writing.

Posttest writing samples indicated improvements in the students' overall writing of the two types of text structures. Specifically, at the posttests students wrote papers that adhered to the topic, were better organized to fit the text structure, and were more interesting to read. This replicates the findings of Englert and her colleagues (Englert, 1992; Raphaeal & Englert, 1989). This improvement in writing was accompanied by positive changes in the students' metacognitive knowledge of text structure, of the writing process, and of writing process strategies.

Students' knowledge of the organization of the two text structures

improved from pretest to the posttest. This improvement was shown on both performance and interview measures, and indicates improved metacognitive knowledge of text structures. However, on the metacognitive interview the students showed greater improvements in their ability to label and categorize ideas to fit the structures compared with their ability to monitor and revise inconsistencies. Englert et al. (1989) found a similar result with learning disabled students in their study of students' metacognitve knowledge of text structure. However, as planning and organizing were more strongly emphasized and were a major focus of this study, these results are not surprising.

Posttest interview data indicated improvements in the students' statable knowledge as well as actual use of prewriting strategies. This improvement may have resulted from the use of the "Planning and Organize Think Sheets", the procedural prompts used during the intervention. As the intervention began, most of the students indicated that they were familiar with mapping as a way to organize ideas, although they did not use this spontaneously. Thus the "Organize Think Sheet" may have prompted them to put into action a strategy they already knew about. Those students who demonstrated prewriting strategies at the posttests, organized their information along the lines of the "Think Sheets" used during the intervention, making their own form of "Think Sheets" on which they planned and organized ideas before they began to write. This adaptation by

some of the students of the "Think Sheets" to fit their own style reflects a positive change in metacognitive thinking about the writing process, particularly of planning and organization of ideas. There was some discrepancy between the students' articulations about prewriting strategies they might use and their actual use of the strategies. This finding is supported in the literature which has shown a non-linear relationship between students' reported use of strategies and performance (see Garner, 1987, 1988).

The change in the students' awareness of the purpose for writing, was positive. There was a shift to thinking about writing as a social and communicative act for half of the students. The responses of the other half, however, suggested they continued to cling to a notion that writing is something done in school. The fact that the intervention included discussions intended to improve conditional strategy knowledge of why, when and where the students could use the "POWER" strategies strategies, and the related "Think Sheets", probably reinforced a view that writing is a school related activity for these students. Also, it is safe to assume that, these students have little occasion to write outside of school.

Students showed a change in their awareness of audience, shifting from teachers and self, to a wider audience at the posttest interview. Thinking and asking themselves about who might read their paper as part of the planning

process, more than likely contributed to this result. Also, during the intervention the students shared their papers with other students and other members of staff. Completed papers were prominently displayed in the room. Through this sharing of their writing the students began to develop an awareness of a wider audience other than only themselves and their teacher.

There were positive changes in the students' awareness and knowledge of editing/revising strategies. The use of the "Edit Think Sheet" which focussed the students' attention on the need to read their papers while thinking about the clarity, interestingness and organization, rather than only on correcting lower order skills, probably affected this change.

Finally, there were definite changes in self-efficacy for writing between the pretest and the posttests. The latter were accompanied by more attributions for strategy use and effort. There were changes away from uncontrollable causes for outcomes, both internal and external, to controllable internal attributions of effort and strategy use. This result may have been a result of the feedback which focussed on how prewriting strategies help one to organize for more effective writing.

The increase in students' knowledge of the descriptive report and compare/contrast structures, and the increased skills in writing those text structures were maintained relatively well at maintenance six weeks after the

study. This maintenance is particularly important in light of the fact that, despite the teachers having been inserviced in the CSIW program, none of the students had actually been exposed to any of the CSIW methods and materials after they left the Centre.

The improvement in students' spontaneous use of prewriting strategies was not well maintained. The students' verbalizations indicated a higher level of strategy use than they actually demonstrated. This may have been affected by motivational variables. The perception of the task as not being relevant to their classroom may have accounted for some of the students not applying the strategies and skills they had learned. One of the students actually commented, that while he could organize his ideas before writing, he was choosing not to because his paper was not being marked. More than likely, this student did not see the utility of expending energy on a strategy and a task which he did not feel was that important. While only one student verbalized this, it may well be that the lowered results obtained at maintenance could have been affected by similar motivational variables for other students. Also, there is evidence in the literature that learning disabled students do not spontaneously use strategies they have in their knowledge base (Chan, Cole & Morris, 1990; Gelzheiser, Cort & Sheperd, 1987).

In summary, the students in this study showed improvements in their writing of the descriptive report and compare/contrast structures. This

improvement was reflected in increased metacognitive knowledge of the organization of these two text structures, and of prewriting strategies which facilitated such organization. The improvements in students' organization of the papers written, and staying on and developing their topic, indicate an improvement in metacognitive awareness and knowledge about components of the writing process, but in particular of planning and organizing. This resulted in an increased proficiency in the use of strategies needed to execute the task more effectively. Finally, the students reported more positive expectations for success when writing their papers, and made more attributions related to strategy use and effort. These results indicate that a holistic writing process approach, which emphasises dialogue and procedural facilitators, is an effective way to teach writing skills and strategies to learning disabled students.

Limitations and Suggestions for Further Research

There were several limitations to this study. First, this study had a small sample. As a result, generalizations from this study are constrained. More studies on the effectiveness of the CSIW curriculum with larger samples of learning disabled students are in order.

Second, while the efficacy of the CSIW intervention was clearly demonstrated, the absence of a comparison group makes it impossible to

definitively say that the CSIW approach is more effective than another form of writing instruction. To determine which process writing approach is most effective for learning disabled students, a study which compares the effects of the CSIW program with a different process writing approach, such as one which uses conferencing as a means of instructing students, might be conducted.

Third, while differences between pre and posttest were found, having a longer time period for the intervention may have had stronger maintenance effects. Since writing is a complex task, conducting an intervention over a longer time would have provided more practice for students in using prewriting strategies, in organizing their texts and in writing their papers. Further, a longer period of instruction would have allowed more time to be spent on the revising/editing component of the CSIW intervention. The chances of students encoding the text structure organization and writing process strategies more effectively into their long term memory would have been increased. Further, by providing opportunities for peer editing, increased awareness of audience and audience needs might have resulted in even better text organization and overall more sophisticated writing.

Finally, while the CSIW intervention included as part of the planning and organizing step, reading and researching from various sources, no measures of possible changes in reading comprehension of expository

materials were included in this study. To date, there is little empirical evidence of writing instruction leading to improvements in reading comprehension with learning disabled students (Bos, 1991). It is recommended that writing intervention studies which focus on teaching expository text structures, examine changes in students' compehension of expository material and explore the relationship between teaching text structure in writing and reading comprehension.

Implications for Instructional Practice

The positive results of this study have implications for writing instruction with learning disabled students. First, in supporting the findings of Englert et. al (in press) this study has clearly demonstrated that process oriented writing instruction can be effective with learning disabled students. Given the current trend to mainstreaming of special needs students, there is a need to find appropriate instructional approaches and curricula which can be incorportated within a classroom for the benefit of a wide variety of learners. The CSIW curriculum, which encompasses the spirit of the the Year 2000, the new British Columbia Language Arts program, and current trends in literacy instruction, meets that criteria.

Second, while this study only lasted ten weeks, the amount of instructional time allocated per week was very intensive, four periods of forty·

five minutes each. By allocating sufficient instructional time to writing learning disabled students can learn to improve their writing ability and knowledge about the writing process in a process oriented approach. This supports those who have called for more instructional writing time for learning disabled students (Christenson et al., 1989), and has implications for current practices in learning assistance. As delivery of service to learning disabled students is changing, many learning assistance teachers are finding that they are providing rotating and shorter terms of instruction to their learning disabled students. As such, the CSIW curriculum provided on an intensive, short term basis would be an appropriate and effective intervention for improving learning disabled students' written language skills and knowledge.

For teachers contemplating the use of the CSIW program several suggestions are made. First, it is important that teachers who use the CSIW curriculum make certain that they do not let the "Think Sheets" become merely "busy work" sheets. The "Think Sheets" are one method of making the writing process, its strategies and the organization of the genre more visible to students, thereby helping them access the strategies and knowledge from memory until they become automatic. Second, teachers must not feel that because the students have brainstormed their ideas they are ready to write. The "Organize Think Sheet" is an important component of the organization step in teaching the students how to categorize and organize

their thoughts according to the genre they are using. Third, it is important that teachers model strategies by talking aloud as they demonstrate the execution of the strategies. Fourth, while the CSIW curriculum focusses on expository writing, the instructional methods seem appropriate for teaching other genres. Accompanying "Think Sheets" appropriate to other structures can be easily developed. Finally, to induce in children the motivation to be more strategic, feedback related to how strategy use has had a positive effect on their writing performance is indicated.

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Appendix 1

<u>Information to Parents and</u>
<u>Parent Consent Form</u>

INFORMATION TO PARENTS

Instruction in written language is a major component of the instructional programme provided for students at the _____ Centre. This term the focus of written language instruction will be on teaching students to become better writers by learning how to write descriptive and compare/contrast paragraphs, as well as planning, organizing and editing strategies for writing.

This planned written language programme is part of a study designed to examine the effects of teaching specific text structures and writing strategies on learning disabled students' written language skills and their knowledge of the writing process. This study is designed to meet the requirements towards a Master's Degree for Mrs. K. Thomas, and has been approved by the Vancouver School Board's Student Assessment and Research Department. As such, this requires the informed consent of parents.

Please indicate whether or not you agree to your son/daughter's participation in the study described above. Any questions regarding the study may be directed to Kathy Thomas at _____. You may obtain a copy of the results of this study upon its completion by contacting Kathy Thomas at the _ _____Centre.

Please keep this letter for you information and return the attached form wth your child.

Kathy Thomas

CONSENT FORM FOR PARENT OR GUARDIAN

       I have read the attached information sheet and understand the nature of the study. I understand that all data collected will be confidential. I may direct any questions and/or comments as well as be able to obtain a copy of the results from Kathy Thomas.

_YES, I give consent for my son/daughter,_____
                                             (Student's full name)
to be part of the study.

 __NO, I refuse consent for my son/daughter,_____
                                             (Student's full name)
be part of the study.

_____
(Signature of Parent/Guardian)

_____
(Parent/Guardian's full name)

_____
(Date)

Appendix 2

Directions for Writing Samples Script

Instructions from teacher

For descriptive report structure

I would like to see how well you can write a paper that describes and informs. Think or pretend that you are writing this for someone who knows very little about the topic. You might like to describe a sport, or a place you visited on your holidays, or your best friend. You can pick any topic you like, but remember it should be a paper that describes something and informs.

For compare/contrast structure

I would like to see how well you can write a paper that compares and contrasts two things. Your are writing this for someone who knows very little about the topic you choose. It should tell how two things are alike and different. You can choose any topic you like, for instance you might like to compare/contrast your two favourite sports or two friends that you have, or two places that you have gone to on holididays.

Appendix 3

Scoring Criteria for Writing Samples

Descriptive Report: Primary Traits for Scoring

(a) Identification of Topic:

3 points: topic/what is being described/reported on is clear: includes a topic
or introductory sentence

2 points: while topic is evident, there is no effective topic sentence to
introduce and cue the reader; topic is not fully developed

1 point: topic not clear until late in the passage, is poorly developed,
may stray of topic

0 points: topic never becomes clear, or use of a different structure

(b) Organization

3 points: information is organized by categories, which are supported by
relevant details; categories organized so there is a good flow from
one to the other

2 points: inconsistent attempt to organize by categories; includes more details
without a clear main idea, or category to support

1 point: provides detail information given in random order; gives unrelated
ideas

0 points: used a different text structure

Holistic Scoring--Interstingness:

3 points: very interesting, had a good beginning, which made the reader
want to read on; used informative descriptive words, good
sentences, and conclusion that gave feeling of completeness

2 points: somewhat interesting, attempts to use good sentences, and use
descriptive words; all parts not clear

1 point: not at all interesting, poorly written, with little information, so
reader loses interest and does not have the feeling of being informed

0 point: gave only a list

Compare/Contrast Primary Trait Scoring

(a) identification of what is being compared/contrasted

3 points: paper clearly identifies two things being compared/contrasted and
includes an introduction which signals the structure; focussed
and on topic

2 points: what is being compared/contrasted is evident, but there is no topic
sentence to cue the reader; incomplete development of the topic
under discussion

1 point: some comparison/contrasts are made at some point, but topic
not clear until late in the passage; may stray off the topic

0 points: no clear ida of topic/purpose of the paper; a different structure

(b) description of similarities and differences

3 points: organized by categories which are supported by relevant details;
details explain both likenesses and differences within a category

2 points: attempts made to compare/contrast by categories, but not effectively
done; categories indicated, but not supported by details, or details
given which do not support a category

1 point: only details compared or contrasted

0 points: incorrect structure, or descriptions only given

(c) use of key/signal words

3 points: key words used to signal both similarities and differences (alike,
different or synonyms); a variety of key words used in the passage

2 points: attempts to use key words to signal a comparison or contrast, but
minimal; not much variety in use of key words

1 point: incorrect use of key words; tends to use "and" (e.g. Dogs eat bones
and cats eat cat food.)

0 points: no use of key words at all

Holistic Score--Interestingness

3 points: very interesting, good beginning which makes the reader want to read on; uses descriptive words and makes some interesing comparisons/contrasts; paper has feeling of completion

2 points: somewhat interesting, some attempts to take reade into consideration, some interesting parts, but no consistently so

1 point: not at all interesting; poorly written with little information so reader loses interest

0 point: only a listing of information, no structure at all

Appendix 4

Metacognitive Interview Scripts

"One activity that you are often asked to do in your classes is writing stories, papers or reports. I want to ask you some questions to find out what you think and know about writing. So that I will be able to remember what you tell me, and because I probably can't write as fast as you can talk, I want to use the tape recorder. When we've finished the interview, I'll play it back and you can hear what you've said if you like."

Knowledge of Process and Strategies

1. Can you tell me why you write? Who reads your stories and papers?

2. Tell me what you do first when you are asked to write a paper?

3. Teachers often ask students to make changes to their papers to make them better. If you were asked to change a paper to improve it or make it better, what kinds of changes could you make?

Knowledge of Text Structure (Pretest Interview)

1. Billy/Debbie has been given the topic "Cats"/"How Cats and Dogs are Alike and Different" to write about. How can you help Billy/Debbie put his/her ideas together for his/her "Cats" / "How Cats and Dogs Are Alike and Different" paper?

2. This is the paper on "Cats"/"How Cats and Dogs Are Alike and Different" written by Billy/Debbie. Let's read it together. Do you think he/she is doing the assignment right? Is his/her paper finished? What changes would you make to this paper to improve it? You can write on/mark the paper if you like, or use the empty space below if you like.

Pretest Structures for Question 2

(a) Cats

I like cats the best. Cat are nice and fury. They have claws and can scratch you if you bug them. they purr when they happy My cats name is panther and he is nice and he doesn't scratch me much.

(b) Cats and Dogs

Cats have claws that help them climb trees, but dog don't. Dogs are man's best freinds, but some people don't like cats. Cats and dogs are pets. You can take a dog for a wok. Cats go outside to catch birds and mice. Dogs only prtect you and sleep in the dog houes.

Knowledge of Text Structure (Posttest Interview)

1. Billy/Debbie has been given the topic "Dogs"/"How Whales and
   Sharks Are Alike and Different" to write about.
   How can you help Billy/Debbie put his/her ideas together for
   his/her "Dogs" / "How Whales and Sharks Are Alike
   and Different" paper?

2. This is the paper on "Dogs"/"How Whales and Sharks Are Alike and
   Different" written by Billy/Debbie. Let's read it together.
   Do you think he/she is doing the assignment
   right? Is his/her paper finished? What changes would you make
   to this paper to improve it? You can write on/mark the paper
   if you like, or use the empty space below if you like.

Posttest Structures

(a) Dogs

I like dogs becuase they are man's best friend. they weag their tales and lick your face. They can growl when you bug them. They wag their tale when they happy. My dogs name is spot and he is nice and he doesn't lick my face too much.

(b) Whales and Sharks

Some ways that whales and sharks are alike and different. Whales live in the ocean. sharks have vere shrap teeth and are dangerous. Whales are mammals. The killer whale is black and white and he is not relly a killer. Sharks can attack people and even smaller boats.

Knowledge of Text Structure (Maintenance Interview)

1. Billy/Debbie has been given the topic "Cars"/"How Frogs and Toads
   Are Alike and Different" to write about.
   How can you help Billy/Debbie put his/her ideas together for
   his/her "Cars" / "How Frogs and Toads Are Alike
   and Different" paper?

2. This is the paper on "Cars"/"How Frogs and Toads Are Alike and
   Different" written by Billy/Debbie. Let's read it together.
   Do you think he/she is doing the assignment
   right? Is his/her paper finished? What changes would you make
   to this paper to improve it? You can write on/mark the paper
   if you like, or use the empty space below if you like.

Maintenance Structures

(a) Cars

Cars have ingins. They have tires and a steering whel. I would like to
have a a lamborghini or maybe a porsche. You can go places with cars. Like
you can drive to the beach or to Stanley Prak in your car.

(b) Frogs and Toads

Frogs and toads have so many likenesses. They are green and bumpy.
Frogs live in the water and in trees and other places. Toads have bumpy
skin. Frogs say ribit and catch there food with there tongue. Frogs live in
ponds and slep on lilipads.

Appendix 5

Scoring Criteria for Interviews

Why do you write?

2 points: share ideas, keep records, communicate, teach others etc.,
indicates idea of writing as a soci-cultural activity

1 point: to get a job, to improve spelling, etc., teachers make me do it

0 points: never thought of it, so I don't have to print, or don't know

Who reads your writing?

3 points: wide audience, indicates idea of publication; audience wants to
be informed or learn; communicate with reader

2 points: self, teacher; sometimes parents

1 point: self and teacher only

0 point: nobody, or no idea, no response

What do you do first?

3 points: indicates prewriting strategies and activities: planning <u>and</u>
organizing: braintstorming, putting down ideas and
organizing them (may include doing research as part of idea
generation)

2 points: indicates thinking, maybe reading, but main emphasis
is on listing or brainstorming of ideas, but no
organizing of ideas prior to writing

1 point: take time to think about the topic, maybe ask teacher
and then write rough draft, does not indicate
any listing

0 points: write date, title, draw a margin, then write

<u>What changes could you make</u>:

3 points: focus on organization, meaning, and clarity includes some
awareness of audience needs

2 points: focus on adding details, and adding more information

1 point: focus on mechanics, spelling, punctuation, length and neatness

0 points: no clear idea, ask the teacher

<u>How should Billy/Debbie organize the information</u>? (Description)

3 points: talks about organizing ideas by categories and indicates knowledge
of need to have categories supported by details

2 points: mixing of details and categories in combination with no clear
distinction between the two

1 point: gives details, and does not attempt to organize them in any way

0 point: no idea, or giving information extraneous to the topic and structure;
they should ask the teacher

<u>Help Billy/Debbie change/fix the paper</u>.(Description)

3 points: need to reorganize it by categories,organize information that
belongs together and add more information to support each
category; take out extraneous information;

2 points: add more details, move some of the sentences to make it read
better, indicating the need for better organizaton; does not indicate
knowledg of need to have categories more clearly defined

1 point: make it longer, added random details, and fix surface level
features (mechanics)

0 points: mechanics only, or its's fine and doesn't need
any fixing

How should Billy/Debbie organize? (Compare/Contrast)

3 points: begin with a statement that tells how the two animals are alike
and different, then organize by categories and provide details
of likenesses and differences for each category

2 points: talk about all the things that are the same, and then all the things
that are different, mixing of categories and details.

1 point: listing of details of likenesses and/or differences in random order
(They both sleep. They eat pet food. Cats don't like bones. Cats
have fur.)

0 points: no idea, unclear to meaning, or extraneous information

Help Billy/Debbie change/fix the paper. (Compare/Contrast)

3 points: reorganize the information into categories and add details, need
to talk about both animals, there is too much about one; include
more categories on which they are both alike and
different and support with details; suggested key words (indicates
knowledge of parallel structure in comapre/contrast)

2 points: add more information about how they are the same or different;
but organized so that distinction between categories and details is
not clear

1 point: make it longer, add some details, and fix mechanical errors

0 point: mechanics only; it's fine

Appendix 6

<u>Self-Efficacy and Attribution Scale</u>

Suppose I were to mark the paper you just wrote. How good a mark would you get?

	Very Good
	Good
	Fair
	Needs Improvement
	Poor

Here are some possible reasons you would get that mark. Which one do you think is the reason for your getting that mark?

(a) I worked hard

(b) the teacher likes me

(c) I am smart

(d) I used good strategies

(e) the work was easy

(e) I am a good writer

Appendix 7

<u>Sample Passages for Text Analysis</u>

Descriptive Report Structure

Flying Squirrel

The flying squirrel is an unusual animal. It is the smallest of the different types of squirrels. The longest it grows is about 25 centimeters. It has extra skin on both sides of its body. When it jumps its legs and the extra skin act like wings, letting the squireel sail through the air. Most flying squirrels sail about 15 meters, but some have sailed as much as 45 meters. These litle animals are hard to see because they are active only at night. They are found in both Canada and the United Sates.

Vancouver

There are many tall buildings and a lot of traffic in Vancouver. Many peole live in houses with gardens, but there are many apartment buildings too. You can go swimming at the beach. And Stanley Park is very big and popular. It has a Children's Zoo, the Aquarium and Lost Lagoon. Ther is a bridge across to North Vancouver. Some people say it is the most beautiful city.

Compare/Contrast Structure

Honeybees and Bumblebees

Bumblebees are larger and fuzzier than honeybees. Honeybees and bumblebees use their antennae to smell and hear. Honeybees and bumblebees use their tongues to drink nectar from flowers. They turn the nectar into honey. Both are busy, but bumblebees don't work nearly as hard as honeybees, because they don't have to store food for the winter. The nests of bumblebees are smaller than those of honeybees. While honeybee nests can have up to 80 000 bees in them, bumblebee nests only have about 50 to 100 bees.

Two kinds of lettuce

Two kinds of lettuce we often see in the store are head lettuce and leaf lettuce. Head lettuce grows in a firm round shape like a head. Leaf lettuce is frilly and leafy. People use head lettuce to make salads. They can both be grown in the garden.

Appendix 8

<u>Sample Lesson Scripts</u>

a: Text Analysis Script

b: Strategy Teaching Script

Text Analysis Script

Direct students' attention to the "Flying Squirrel" paper. Ask if anyone has any idea bout what this paper will be about?

Model thinking, by saying, "I think this will tell me about the flying squirrel. I'm going to read the first sentence, to see if I can get any clues about what information about flying squirrels might be in this paper". Direct the questions so that the students begin to see the questions the teacher has as she reads the model passage.

After reading the passage, direct students to the organization of the structure. "As I read this paragraph I thought that this was a very interesting description. There were some key questions that were answered. For instance, I was wondering what would make this animal unusual? One thing that makes this animal unusual is its legs and the skin flap ."

Encourage students to participate in the dialogue, by asking them what other information was given that made it unusual (it can "fly", they are very small).

Continue modelling and think aloud, by asking, "You know what I'm wondering it there isn't some information that was left out? I'm wondering if the length of the squirrel includes its tail?" Encourage students to express any information they are wondering about. "Are there any other questions you might be wondering about?" (e.g. Can they be found all over Canada and the U.S., or just some regions of these countries?)

"That was excellent. I think that whoever vrote this would have a lot of information about what things could be put .n or taken out. This paper is a descriptive report. It informs us about something. I could tell right away, from the first sentence that this was going to describe or report on something. When I read the title and the first sentence I thought of the information and things that the writer who wrote this would have to include. The first sentence indicated to me that the writer was going to answer the question "What makes this little animal so unusual?", and in my opinon, the writer answered that question, although he/she could have been a little more specific in telling where the extra skin is located. I knew that the writer would probably include some other information about what this squirrel looks like, or its appearance. Let's talk about the other categories of information that were included in this description. This leads to a discussion about the organization of the paper.

"Yes, it talks about where it lives. That's called its Habitat. What other kind of information does it give us? Yes, it talks about some of what it does, or how it acts, we can call that Behavior."
As students come up with the categories of infomation, list them on the board.

"We've just looked at a paper that is a description and informs. We call it a descriptive report. You might be thinking that it's a bit short for a report, but it has the same parts as a descriptive report you might be asked to write in your classroom. Let's review the parts that this report had."
At this point review the parts, (What it is, Where it lived, What it looks like). Tomorrow we'll be looking at another report."

Analysis of the second sample, which is not as well organized and informative would be done next.

/

Strategy Instruction (Planning and Organizing)

This lesson follows the text analysis lessons. Review what good descriptive report papers look like, what kind of information they should have, and how it is organized to meet the needs of readers.

Direct students' attention to the "Plan Think Sheet" on the chart/ overhead.

"We are going to learn how to write descriptive reports. To be able to do this, we need to follow certain steps. To follow the steps we will use the POWER strategy. POWER stands for Plan, Organize, Write, Edit and Revise/Rewrite." Direct students to the POWER QUESTIONS chart

"Today we are going to learn about the first step in writing a descriptive report. The first thing I do when I write a paper is plan. That includes thinking about my topic and about why I am writing the paper and who I am writing it for. The planning strategy has three steps and three questions that I ask myself. The fist step is to ask myself, 'Why am I writing this?' The second step is to ask, 'Who am I writing this for?'"

"Since we've decided that I will write a short report on eagles, I think I'm writing it to inform others who don't know as much about this topic. Who am I writing this for? I guess you could say for anyone who wants to learn about eagles. Maybe someone has seen one flying near the harbor and is interested in learning more about them, like do they live around here? So I've also answered the question, 'who for?', since it's for people who want to learn about eagles". Teacher fills in the questions Why? and Who? on the Plan Think Sheet.

"The third step is to ask myself and think about what do I know about this topic? I'm going to use this sheet (introduce the Plan Think Sheet) to put my ideas down so I won't forget them. If I don't know enough, I might have to do a little research." The teacher models the brainstorming. At this point students should be encouraged add information to the teacher's brainstormed ideas.

Once the planning step has been modelled, the organizing strategy is n odelled.

Referring to the filled in Plan Sheet say: "I have all of this information, but I can't just write it down the way I've got it listed on my Plan Sheet. I think I need to do something to it. Does anyone have any ideas what I might have to do next?"

Direct students attention to the POWER QUESTION chart. " The next step is to organize my ideas. Does anyone know what that means? I have to ask myself how can I put my ideas into some sort of groups or categories. Since I'm writing a descriptive report, I'll see what ideas that I have here go together into categories that describe. Let's see, I have information here that tells about where the eagle lives. That could be one category, and I'll label it 'Habitat'. I also have information about its looks, or 'Appearance', that can be another category of information. Do I have any other ideas that go together?

As the categories are decided upon, label them and list them on the "Organize Think Sheet", and fill in the details to support them from the brainstorm sheet. All the while talk through what you are doing. Again, encourage the students to be involved in the dialogue as you model the steps of organizing.

"Now I have all of this information organized into categories. How am I going to write this? What part will I put first? I need to think about how to order these categories, so that they will flow nicely, and make it interesting for the person reading my paper. I wonder how can I order my ideas? I think I will start with the category that tells about what the eagle is. That way I am also going to be introducing the topic to the person reading this. Now I'll put all the ideas that I brainstormed about what eagles are. What category could I include next? (e.g. Looks/Appearnce) That's good, I think appearance follows nicely here."

Again, encourage dialogue and input from the students about how they would organize the categories and why.

After the categories have been organized, model and work through the organization of ideas within the categories.

At the conclusion of the lesson, review the steps in writing, Plan, Organize, Write, Edit and Revise/Rewrite. Review what we do when we plan and organzie, and when and why planning and organizing are used.

Following this, the group decides on a topic, and the Plan and Organize steps are worked through together. Students can discuss as a group and with each other the questions posed during the planning and organizing stage. It is important to acknowledge that not all students will come up with the same responses for Why, Who, and What on the planning sheet. As we work through the Plan and Organize steps each student fills in his/her own Think Sheets.

Appendix 9

Think Sheets

a: Power Questions Think Sheet

b: Plan Think Sheet

c: Organize Think Sheet

d: Compare/Contrast Organize Think Sheet

e: Edit Think Sheet

POWER QUESTIONS

Plan.

WHY am I writing this?

WHO am I writing for?

WHAT do I know? (brainstorm)

Organize.

How can I organize my ideas into categories?

How can I order my categories?

Write rough draft.

Edit.

Reread & Think
Which parts do I like best?

Which parts are not clear?

Did I: stick to the topic?

- use 2-3 categories?
- talk about each category clearly?
- give details in each category?
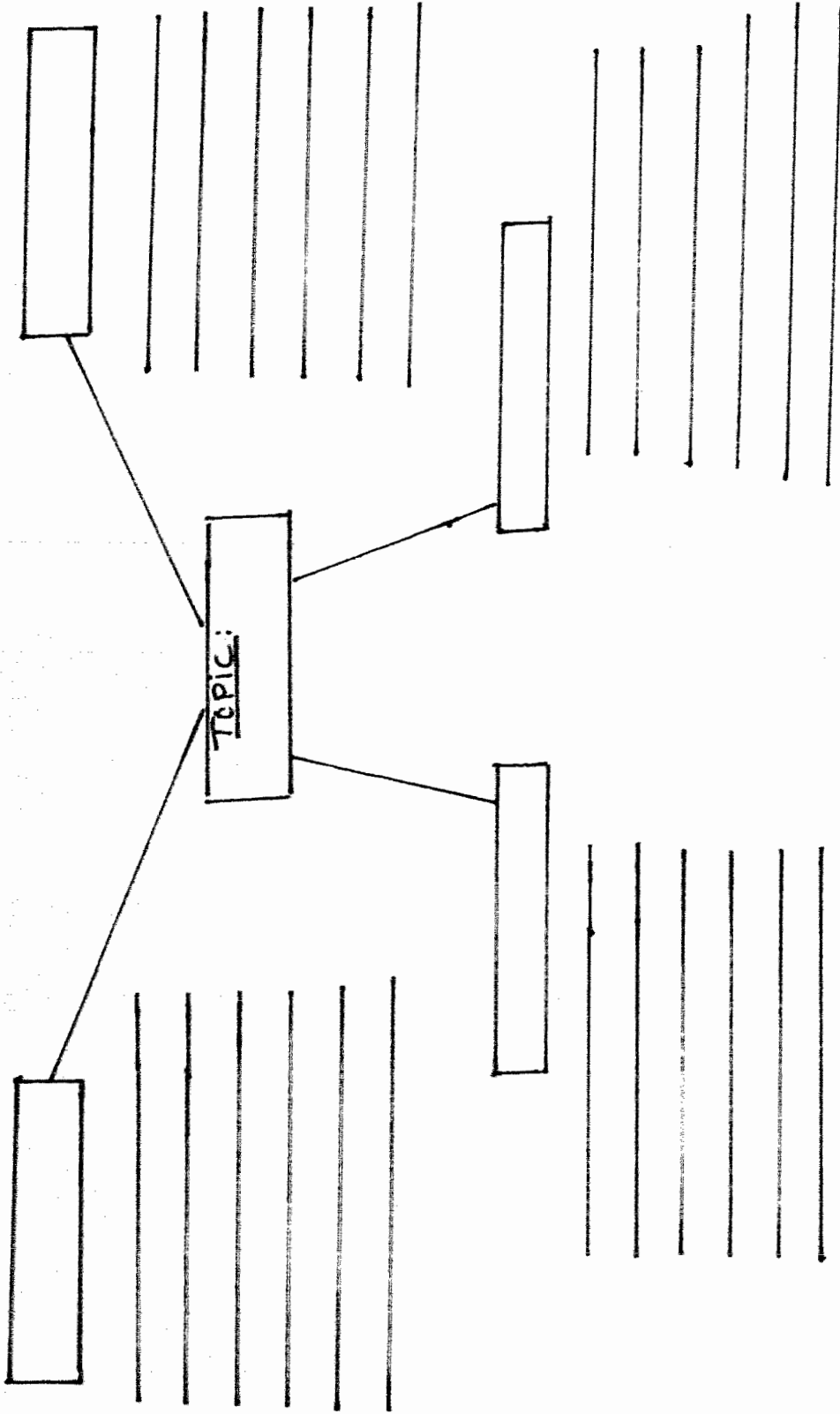- use key words?
- make it interesting?

Revise/Rewrite.

PLAN THINK SHEET

TOPIC: _____

THINK!!

1. **WHY?**   Why am I writing this?

2. **WHO?**   Who am I writing this for?

3. **WHAT?**   What do I know about the topic?

BRAINSTORM IDEAS (my own & from research)

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

ORGANIZING MY IDEAS

TOPIC:

THINK!   1. How can I organize my ideas into categories?
2. How can I order my ideas?

COMPARE/CONTRAST ORGANIZATION

What is being compared/contrasted?

On What ?

Alike ?	Different ?
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

On what?

Alike ?	Different ?
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

On what?

Alike ?	Different ?
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

EDIT THINK SHEET

Name _____   Date _____

READ to CHECK YOUR INFORMATION. THINK!!

Which part do I like the best. (Put a * by the parts I like best.)

Which parts are not clear? (Put a ? mark by unclear parts.)

QUESTION YOURSELF TO CHECK ORGANIZATION. Did I

Stick to the topic?	YES	SORT OF	NO
Use 2-3 categories?	YES	SORT OF	NO
Identify each category clearly?	YES	SORT OF	NO
Give details to explain each category?	YES	SORT OF	NO
Use key words ?	YES	SORT OF	NO
Make it interesting?	YES	SORT OF	NO

PLAN REVISION. (Look back)

What parts do I want to change?

1. _____

2. _____