THE EFFECTS OF AN EXPOSITORY WRITING INTERVENTION PROGRAM ON THE QUALITY OF WRITING AND METACOGNITIVE KNOWLEDGE OF LOW-ACHIEVING AND AVERAGE ENGLISH JUNIOR SCHOOL CHILDREN

BY

NANCY E. OXENHAM

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF EDUCATION

Department of Humanities
University of Manitoba
Winnipeg, Manitoba

National Library
of Canada

Acquisitions and
Bibliographic Services Branch

395 Wellington Street
Ottawa, Ontario
K1A 0N4

Bibliothèque nationale
du Canada

Direction des acquisitions et
des services bibliographiques

395, rue Wellington
Ottawa (Ontario)
K1A 0N4

Your file *Votre référence*

Our file *Notre référence*

ISBN 0-315-85918-0

Canada

Name _____

Dissertation Abstracts International is arranged by broad, general subject categories. Please select the one subject which most nearly describes the content of your dissertation. Enter the corresponding four-digit code in the spaces provided.

Curriculum and Instruction
SUBJECT TERM

0727
SUBJECT CODE

U·M·I

Subject Categories

THE HUMANITIES AND SOCIAL SCIENCES

COMMUNICATIONS AND THE ARTS
Architecture 0729
Art History 0377
Cinema 0900
Dance 0378
Fine Arts 0357
Information Science 0723
Journalism 0391
Library Science 0399
Mass Communications 0708
Music 0413
Speech Communication 0459
Theater 0465

EDUCATION
General 0515
Administration 0514
Adult and Continuing 0516
Agricultural 0517
Art 0273
Bilingual and Multicultural 0282
Business 0688
Community College 0275
Curriculum and Instruction 0727
Early Childhood 0518
Elementary 0524
Finance 0277
Guidance and Counseling 0519
Health 0680
Higher 0745
History of 0520
Home Economics 0278
Industrial 0521
Language and Literature 0279
Mathematics 0280
Music 0522
Philosophy of 0998
Physical 0523
Psychology 0525
Reading 0535
Religious 0527
Sciences 0714
Secondary 0533
Social Sciences 0534
Sociology of 0340
Special 0529
Teacher Training 0530
Technology 0710
Tests and Measurements 0288
Vocational 0747

LANGUAGE, LITERATURE AND LINGUISTICS
Language
- General 0679
- Ancient 0289
- Linguistics 0290
- Modern 0291

Literature
- General 0401
- Classical 0294
- Comparative 0295
- Medieval 0297
- Modern 0298
- African 0316
- American 0591
- Asian 0305
- Canadian (English) 0352
- Canadian (French) 0355
- English 0593
- Germanic 0311
- Latin American 0312
- Middle Eastern 0315
- Romance 0313
- Slavic and East European 0314

PHILOSOPHY, RELIGION AND THEOLOGY
Philosophy 0422
Religion
- General 0318
- Biblical Studies 0321
- Clergy 0319
- History of 0320
- Philosophy of 0322

Theology 0469

SOCIAL SCIENCES
American Studies 0323
Anthropology
- Archaeology 0324
- Cultural 0326
- Physical 0327

Business Administration
- General 0310
- Accounting 0272
- Banking 0770
- Management 0454
- Marketing 0338

Canadian Studies 0385
Economics
- General 0501
- Agricultural 0503
- Commerce-Business 0505
- Finance 0508
- History 0509
- Labor 0510
- Theory 0511

Folklore 0358
Geography 0366
Gerontology 0351
History
- General 0578
- Ancient 0579
- Medieval 0581
- Modern 0582
- Black 0328
- African 0331
- Asia, Australia and Oceania 0332
- Canadian 0334
- European 0335
- Latin American 0336
- Middle Eastern 0333
- United States 0337

History of Science 0585
Law 0398
Political Science
- General 0615
- International Law and Relations 0616
- Public Administration 0617

Recreation 0814
Social Work 0452
Sociology
- General 0626
- Criminology and Penology ... 0627
- Demography 0938
- Ethnic and Racial Studies 0631
- Individual and Family Studies 0628
- Industrial and Labor Relations 0629
- Public and Social Welfare 0630
- Social Structure and Development 0700
- Theory and Methods 0344

Transportation 0709
Urban and Regional Planning 0999
Women's Studies 0453

THE SCIENCES AND ENGINEERING

BIOLOGICAL SCIENCES
Agriculture
- General 0473
- Agronomy 0285
- Animal Culture and Nutrition 0475
- Animal Pathology 0476
- Food Science and Technology 0359
- Forestry and Wildlife 0478
- Plant Culture 0479
- Plant Pathology 0480
- Plant Physiology 0817
- Range Management 0777
- Wood Technology 0746

Biology
- General 0306
- Anatomy 0287
- Biostatistics 0308
- Botany 0309
- Cell 0379
- Ecology 0329
- Entomology 0353
- Genetics 0369
- Limnology 0793
- Microbiology 0410
- Molecular 0307
- Neuroscience 0317
- Oceanography 0416
- Physiology 0433
- Radiation 0821
- Veterinary Science 0778
- Zoology 0472

Biophysics
- General 0786
- Medical 0760

EARTH SCIENCES
Biogeochemistry 0425
Geochemistry 0996
Geodesy 0370
Geology 0372
Geophysics 0373
Hydrology 0388
Mineralogy 0411
Paleobotany 0345
Paleoecology 0426
Paleontology 0418
Paleozoology 0985
Palynology 0427
Physical Geography 0368
Physical Oceanography 0415

HEALTH AND ENVIRONMENTAL SCIENCES
Environmental Sciences 0768
Health Sciences
- General 0566
- Audiology 0300
- Chemotherapy 0992
- Dentistry 0567
- Education 0350
- Hospital Management 0769
- Human Development 0758
- Immunology 0982
- Medicine and Surgery 0564
- Mental Health 0347
- Nursing 0569
- Nutrition 0570
- Obstetrics and Gynecology .. 0380
- Occupational Health and Therapy 0354
- Ophthalmology 0381
- Pathology 0571
- Pharmacology 0419
- Pharmacy 0572
- Physical Therapy 0382
- Public Health 0573
- Radiology 0574
- Recreation 0575
- Speech Pathology 0460
- Toxicology 0383

Home Economics 0386

PHYSICAL SCIENCES
Pure Sciences
Chemistry
- General 0485
- Agricultural 0749
- Analytical 0486
- Biochemistry 0487
- Inorganic 0488
- Nuclear 0738
- Organic 0490
- Pharmaceutical 0491
- Physical 0494
- Polymer 0495
- Radiation 0754

Mathematics 0405
Physics
- General 0605
- Acoustics 0986
- Astronomy and Astrophysics 0606
- Atmospheric Science 0608
- Atomic 0748
- Electronics and Electricity 0607
- Elementary Particles and High Energy 0798
- Fluid and Plasma 0759
- Molecular 0609
- Nuclear 0610
- Optics 0752
- Radiation 0756
- Solid State 0611

Statistics 0463

Applied Sciences
Applied Mechanics 0346
Computer Science 0984
Engineering
- General 0537
- Aerospace 0538
- Agricultural 0539
- Automotive 0540
- Biomedical 0541
- Chemical 0542
- Civil 0543
- Electronics and Electrical 0544
- Heat and Thermodynamics ... 0348
- Hydraulic 0545
- Industrial 0546
- Marine 0547
- Materials Science 0794
- Mechanical 0548
- Metallurgy 0743
- Mining 0551
- Nuclear 0552
- Packaging 0549
- Petroleum 0765
- Sanitary and Municipal 0554
- System Science 0790

Geotechnology 0428
Operations Research 0796
Plastics Technology 0795
Textile Technology 0994

PSYCHOLOGY
General 0621
Behavioral 0384
Clinical 0622
Developmental 0620
Experimental 0623
Industrial 0624
Personality 0625
Physiological 0989
Psychobiology 0349
Psychometrics 0632
Social 0451

THE EFFECTS OF AN EXPOSITORY WRITING INTERVENTION PROGRAM ON THE QUALITY OF WRITING AND METACOGNITIVE KNOWLEDGE OF LOW ACHIEVING AND AVERAGE ENGLISH JUNIOR SCHOOL CHILDREN

BY

NANCY E. OXENHAM

A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements for the degree of

MASTER OF EDUCATION

ABSTRACT

This study examined British junior school students' metacognitive knowledge about expository writing and the relationship between this knowledge and writing performance. Four students (two underachievers, two average) were interviewed about their metacognitive knowledge regarding the expository writing process and text organization. Subjects also composed two types of expository text (compare/contrast and explanation). The students participated in a five month intervention program, Cognitive Strategy Instruction in Writing (CSIW), designed to teach cognitive strategies in writing explanation and compare/contrast text. The intervention consisted of four phases; text analysis, modelling of the text structure, guided writing and an independent writing phase. Results indicated an increase in metacognitive knowledge and an improvement in the writing of explanatory text for all students. Improvements were also noted in the compare/contrast writing performance of one underachieving and one average student.

ACKNOWLEDGEMENTS

This writer would like to extend her sincere appreciation to advisor Dr. Beverley Zakaluk, Faculty of Education, Winnipeg for her guidance, and suggestions, and Dr. Brahm Norwich, Institute of Education, London, England for his counsel. Appreciation is also extended to committee members Professor Betty Johns and Dr. Sheldon Rosenstock.

Appreciation is extended to Mrs. Mary Withers, Dr. John Emanuel, and Mrs. J. O'Connor of Hertfordshire, England who were involved in the study.

Very special thanks are extended to my husband, Mark for his understanding, encouragement and assistance with computer programming in London, England. Sincere thanks to Mr. James Lee for his assistance with the computer and printing in Winnipeg, and to my family and friends for their support throughout this endeavour.

LIST OF TABLES

TABLE OF CONTENTS

Chapter 1

Nature of the Study

September, 1985 marked the beginning of the National Writing Project in Great Britain. Twenty local authorities in England and Wales, of which 10 began to participate in September 1985 and 10 in September,1986, were invited to participate in the investigation of different aspects of the writing curriculum. As cited in **Changing Practice** (1991), the aim of the Writing Project was:

> to develop and extend, within the broader field of language skills, the competence of children and young adults to write for a range of purposes and a variety of audiences, in a manner that enhances their growth as individuals, their powers of self expression, their skill as communicators and their facility as learners. (p.6)

The five major areas of concern were 1) writing and learning, 2) curriculum continuity, 3) personal and social development, 4) the school and its environment and 5) pre-vocational interests. Concepts such as writing for

real purposes and a variety of audiences were explored as was increasing the children's repertoire for different kinds of writing. Writing across the curriculum was encouraged and fostered. This teacher-led, classroom-based project continued over a 3 year period and was the basis for much of the methodological, theoretical and practical framework of the writing component of the National Curriculum which was introduced in England and Wales in 1988. This strand of the curriculum stresses teaching writing as a process and focusing instruction on a variety of text structures. The National Curriculum, Article 10.33 states children should be helped to: 1) reread their writing as if they were in the intended readers place, 2) revise, redraft and proofread, and 3) find suitable ways of organizing non-chronological writing such as descriptions, explanations, and arguments. Within the context of this new National Curriculum, therefore, this study explores the written products and the knowledge English junior school children have of the writing process and expository text structures. How to teach children to be effective writers of expository text is also of particular interest.

The purpose of this study is to determine:

1) what knowledge low-achieving and average English junior school children have about expository text structures,

2) what knowledge low-achieving and average English junior school children have of the writing process,

3) whether an intervention strategy (Cognitive Strategy Instruction in Writing) designed to teach a specific text structure will increase the metacognitive knowledge of low-achieving and average English junior school children,

4) whether strategies for writing explanatory and compare/contrast compositions which were emphasized in the instructional intervention (Cognitive Strategy Instruction in Writing) will be evident in the quality of the postintervention writing products.

Statement of the Problem

Expository Writing and the Role of Text Structure

Writing is no longer viewed as a linear process, but as a number of recursive, overlapping subprocesses. An expository writing model presented by Hayes and Flower (1980) describes an expert writer's composing process as a form of problem solving. This model is based on an analyses of the writing protocols of high school and adult subjects over a 2 year period. Hayes and Flower suggest that there are three writing subprocesses consisting of planning, translating and reviewing. Their research indicates that these subprocesses are recursive in nature.

The planning subprocess involves a variety of activities such as setting goals and defining the audience, determining the content, generating ideas and organizing them in a related manner. The translating subprocess includes culling and arranging the ideas to form a plan and translating the ideas into print. Stein (1986, p.228) describes this process as finding "ways of representing nonverbal concepts in verbal form." The reviewing subprocess involves evaluating, revising and

editing. The writer monitors the success of the draft in meeting goals and plans. The draft may be modified to reflect the needs of the audience as well as the writer's goals.

Competent writers appear to possess self-regulation strategies for directing memory search and are selective in the information they use. However, novice or inexperienced writers have more difficulty with idea generation and spend less time planning than skilled writers. It appears great cognitive effort is involved in generating content. Bereiter and Scardamalia (1986) propose that novice writers implement a "knowledge telling " strategy similar to brainstorming whereby writers generate everything they know about a topic with little or no attention paid to the overall organization of the text or categorization of ideas. As a result, their writing becomes more linear as each idea activates the next.

Problem solving strategies are very important to self-regulation, especially during the reviewing stage. Novice writers may lack knowledge of problem solving strategies, may not realize their text is inadequate, or may not know when to apply strategies to solve writing

problems.

Throughout the writing process, a writer's inner dialogue is very important. Self-talk is seen as significant to self-regulation for all writers (Daiute, 1985). Through all the writing subprocesses, the mature writer employs self questioning strategies; for example, when planning questions are raised about the purpose and audience. When drafting, the writer asks if appropriate signals are being provided to the reader and when reviewing, poses questions regarding clarity.

Research on expository writing is a relatively new area of emphasis in the elementary school. Most of the research into expository writing instruction tends to concentrate on older, more experienced writers at a high school or college level. There has been comparatively little investigation into the informational writing of young children. Although a common research approach involves the comparison of expert and novice writers, in regard to children with special learning needs, the field narrows even further. Only a few researchers have included learning disabled or underachievers as subjects. These students are of particular interest to this investigator. Bereiter and Scardamalia (1982) state that

learning to write does not simply require special knowledge and skills added to those of oral language ability, but requires a conversion from relying on a conversational partner to developing a language system that is capable of functioning autonomously instead of interactively. Espin and Sindelar (1988) suggest that research with novice writers may offer insight into the difficulties that learning disabled writers or under-achieving students may experience. With these children in mind, two additional areas of writing research will be reviewed next: 1) the role of text structure and 2) the importance of metacognitive knowledge.

Expository discourse is based on the organization of superordinate and subordinate details. In 1984, Meyer defined 5 types of text structure as being:

1) compare/contrast,
2) sequence/chronological,
3) description,
4) cause/effect or antecedent/consequence and
5) response or problem/solution.

Knowledge of text structure is seen as critical in the organization of text. Three conclusions have developed as a result of prior research in the area of text structure.

First, text structure knowledge is associated with achievement, both in reading comprehension and composition. Work on the role of text structure in composing suggests there is a positive relationship between knowledge of text structure and writing ability (Hillocks, 1986). Some researchers have examined the types of text structure that children find the most difficult. Englert and Hiebert (1984) found that students in grades 3 to 6 were able to master descriptive forms of writing, but writing compare and contrast text was one of the most difficult tasks for them. Thus writing performance is directly influenced by the type of text writers attempt to construct (Englert & Hiebert, 1984; Englert & Thomas, 1987).

Children with special learning needs seem to have particular difficulty with the organization of text. Englert, Raphael, Fear and Anderson (1988) found these children have problems deciding not only about the overall presentation and ordering of ideas (conforming to a text structure) but, in addition, the categorizing and labelling of related ideas. Such children tended to generate and write low-level random details rather than develop an organizational plan in which to present

information.

Metacognitive Knowledge and Writing Competence

The role of metacognition in the writing process has been at the centre of research conducted by Raphael, Englert and colleagues. Paris, Lipson and Wixson (1983) suggest three types of knowledge are subsumed under metacognitive knowledge. These three types of knowledge are declarative, procedural and conditional. Declarative knowledge is described as information about the structure, audience and the goals of the task. In other words knowing that writing consists of various subprocesses and activities. Procedural knowledge describes the "knowing how" or the strategies writers use to accomplish their goals. Finally, conditional knowledge involves the "knowing when and why" or the actual implementation and appropriate use of strategies during the writing process.

Englert, Raphael, Fear and Anderson (1988) found metacognitive knowledge was positively correlated with students' written performance. Further, Raphael, Englert, and Kirschner (1989) examined the changes in upper elementary school students' metacognitive knowledge as a

result of participating in instructional programs that emphasized the role of text structure knowledge in providing a communicative context for writing. Results indicated that, with instruction, students demonstrated heightened metacognitive awareness of the writing process as well as improvement in the quality of their writing.

Summary

Knowledge of the writing process, knowledge of text structure and metacognitive knowledge all play vital roles in the expository writing process. Further, Raphael, Englert and Kirschner (1986) in work with upper elementary school children, and Englert et al (1988) in working with learning disabled students noted the children had difficulty in:

1) sustaining their thinking about topics,

2) organizing their ideas,

3) monitoring their texts,

4) using writing strategies to produce coherent texts and

5) developing sensitivity to audience needs.

Therefore to be effective, teachers need to address these needs. New instructional strategies have just started to

appear in the literature in the past 5 years. In a review of the literature on the composing ability of children with learning disabilities, Newcomer and Barenbaum (1991) point out that a very small group of researchers have dominated this specific area of study. A number of authorities have developed instructional training and strategy teaching programs. Englert et al (1991) found that a comprehensive expository writing program they developed entitled Cognitive Strategy Instruction in Writing (CSIW) improved the overall writing quality of learning disabled and non-learning disabled students. Graham et al (1992) found a planning and writing strategy had a positive effect on learning disabled students essay writing performance and knowledge of the writing process. In addition, Graham and Harris (1989) found a strategy designed to facilitate the generation, framing and planning of argumentative essays had a positive effect on learning disabled students' writing performance. As little or no research has been conducted in this area by independent authors, Newcomer and Barenbaum suggest that there is a need to replicate research in this area. This study, therefore will examine the effectiveness of one of the programs recently developed by Englert, Raphael and

associates, Cognitive Strategy Instruction in Writing (CSIW). This is a comprehensive program that has been effective with learning disabled students. For comparative purposes, students of average ability will also be included as subjects. A case study approach to investigation will be carried out to provide an in depth understanding of the students' responses to the intervention.

Hypotheses

Based upon previous research findings, it is expected that initially, the more able (average) students in the study will demonstrate a greater awareness of the writing process, and knowledge of text structure in their compositions than the lower achieving students. As a result of the intervention, it is anticipated that the expository writing of all of the students will improve in terms of quality and text organization. Further, the students will articulate a greater understanding of the writing process, and demonstrate increased metacognitive knowledge.

Overview of the Study

Previous work with Cognitive Strategy Instruction in Writing (CSIW) examined the effects of instruction with normal achieving and learning disabled students. As these children were of particular interest, a case study approach was adopted to allow for an in depth analysis of the students' progress and participation throughout the study. Due to limited space at the school, four students, ranging in age from 9 to 11, were selected by the classroom teacher. Two "average" students functioning within the National Curriculum levels expected for their chronological age and class placement, and 2 children functioning at least 1 Key Stage below the range expected for their chronological age and class placement were selected.

Based on the previous research, it was estimated that a minimum of 20 sessions would be required to implement the Cognitive Strategy Instruction in Writing program. The CSIW Program was conducted in a small group situation twice a week. Due to extra time required for school holidays, special events and the pre-post

assessments, the study required five months to complete. Activities included modelling of the writing process, and examining text structure features and key words. Strategy instruction focused on helping students with planning, drafting and revising, and using a think sheet format. The lesson plans followed the same format as the study conducted by Englert et al in 1991/92.

Definition of Terms

The terms to be used in this study are operationally defined in the following manner:

Text Organization

Expository writing - the ability to explain or provide information about a topic. The writer of expository text must have the knowledge of the ways in which the text can be structured or organized.

Text structure - the organization of superordinate and subordinate ideas or information in an predetermined structure to convey meaning.

Superordination - is the relation of main ideas to detail statements, which provide elaboration of the main ideas.

Compare/contrast - a text structure in which 2 or more topics are compared according to their likenesses and differences on one or more attributes (Englert & Hiebert, 1984).

Explanation - a text structure that specifies the attributes or characteristics of a selected topic (e.g., object, person, animal) (Englert & Hiebert, 1984).

Metacognition and Its Facilitation

Metacognition - one's knowledge concerning one's own cognitive processes or anything related to them (Flavell, 1976, p.232).

Metacognitive interview response ratings:

High-knowledge responses are those that accurately describe or explain the component of the writing process targeted by the question;

Medium-knowledge responses are those which reveal some knowledge of the writing process but miss out critical components of the process as targeted by the question; and

Low-knowledge responses reveal a lack of understanding of the component of the writing process targeted by the question.

Procedural facilitation - refers to the ways

teachers ease the executive burden of writing in some particular respect. Any reduction in the cognitive demands of a task that permits learners to make fuller use of the knowledge and skills they already have.

Scaffolded instruction - Three features of scaffolding instruction are 1) the instruction takes place in a collaborative context between the learner and the teacher, 2) the teacher's assistance allows the student to operate in the "zone of proximal development", defined by Vygotsky, as the area between what the child can accomplish independently and the level at which the child requires assistance to complete the task, and 3) the gradual withdrawal of support is necessary as the student develops more competence because the final goal is complete independence as the learner's knowledge is internalized (Beed et al, 1991).

The National Curriculum - is divided into four Key Stages.

Key Stage 1 - pupils entering year 1 - a majority reach age 6 during the school year;

Key Stage 2 - pupils entering year 3 - a majority reach age 8 during the school year;

Key Stage 3 - pupils entering year 7 - a majority

reach age 12 during the school year; and

Key Stage 4 - pupils entering year 10 - a majority reach age 15 during the school year.

English in the National Curriculum consists of 3 profile components - 1) speaking and listening, 2) reading, and 3) writing. Attainment targets for each of the three components are used for reporting purposes. The attainment targets stress the importance of knowledge of the writing process. The following examples represent statements of attainment:

a) produces a range of types of non-chronological writing (level 3),

b) discusses the organization of his/her own writing; revises and redrafts the writing as appropriate, independently, in light of the discussion (level 4),

c) writes in a variety of forms for a range of purposes and audiences, in ways which attempt to engage the interest of the reader (level 5).

Student Achievement

The term, low-achiever, describes a student who is functioning 2 or more levels below the range expected by the National Curriculum.

A normal achiever is a student functioning within

the levels expected by the National Curriculum. Reading, writing, receptive language and reasoning measures indicate that performance is within the average range based on the student's chronological age.

Learning disability - Students so labelled as a result of assessments comparing intellectual and achievement measures showing that a) intellectual ability is within the average or above average range; b) there are significant discrepancies between expectancies based on intellectual functioning and academic achievement; and c) there is no evidence of mental retardation.

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions or environmental influences, it is not the direct result of those conditions or influences (National Joint Committee for Learning Disabilities, 1987).

Chapter 2

Review of the Literature

The focus of writing research has changed dramatically as the emphasis on writing in the school curricula has received more attention. This attention has shifted from studies of written products to studies examining students' composing abilities and the writing process. What writers' think about and the decisions writers make have been a particular area of interest. In 1971, Emig pioneered the think-aloud as a means of studying how writers compose - what writers say they are thinking about while actually writing.

However, the research on expository writing is a relatively new area of emphasis. Most of the research into expository writing instruction tends to concentrate on the older, more experienced writer at a high school or college level. There has been comparatively little research examining the informational writing of young children. A common research approach involves the comparison of expert and novice writers. In the area of children with special learning needs, the field narrows

even further, as only a few researchers have included learning disabled children or children who are considered to be under achievers in their work. However as Espin and Sindelar (1988) suggest, the results of research with novice writers may offer insight into the difficulties that learning disabled writers or under achieving students may experience. With these children in mind, four areas of related research in writing will be examined :

1) the writing process,
2) the role of text structure in expository writing,
3) the importance of metacognitive knowledge, and
4) instructional interventions.

The Writing Process

Writing was once viewed as a task whereby oral language was simply recorded on paper. However, in recent years, the difficulty of this shift from conversation to composition has been recognized. Bereiter and Scardamalia (1982) state that learning to write does not simply require special knowledge and skills added to those of oral language ability, but requires a conversion from relying on a conversational partner to developing a

language system that is capable of functioning autonomously instead of interactively. Whereas oral language production is dependent upon input or cues from a conversational partner, in writing all supports and external cuing systems are removed.

The writing process is considered to be a highly complex cognitive process. Marzano (1991 p.563) describes writing as " one of the most taxing cognitive acts because it maximizes the load of information that must be maintained during its execution." The number of decisions that are made during writing and the interdependence of these decisions makes writing a very difficult cognitive process.

Further, writing is no longer viewed as a linear process, but consisting of recursive, overlapping subprocesses. Although several writing models have been developed, one of the most widely respected models is an expository writing model developed by Hayes and Flower (1980). This model is based on an analysis of the writing protocols of "competent college students" over a 2 year period. The Hayes and Flower model describes an expert writer's composing process as a goal-directed form of problem solving. The writer establishes and solves a

series of subproblems in an attempt to convey the intended message. These subproblems include decisions regarding such issues as form, structure, and mechanics. Marzano (1991) suggests the longer one is engaged in the writing process, the greater the quantity, the more interdependency is effected and the more decision-making is based on increasingly numerous and complex conditions.

Hayes and Flower suggest there are three writing subprocesses consisting of planning, translating and reviewing. Further, these subprocesses are recursive in nature. The planning subprocess involves a variety of activities such as setting goals and defining the audience, determining the content, generating ideas and organizing them in a related manner. Further, Hayes and Flower indicate that when planning, there are at least four knowledge sources involved. These knowledge sources include:

1) knowledge of the writing purposes and goals,

2) knowledge of the topic,

3) knowledge of the text structure genre or organizational patterns, and

4) knowledge of problem solving strategies when plans are found to be inadequate.

Research on planning as a subprocess. In the planning subprocess, the purpose of writing and the intended audience have a critical impact on both the writing process and the product. In addition, the purpose of writing affects the ideas generated and the form in which the ideas will be communicated. Flower and Hayes (1977) concluded that expert writers keep the reader in mind when generating ideas and planning. Flower calls it reader-based prose. Competent writers appear to have strategies for self-directed memory search and are selective in the information they use. It appears great cognitive effort is involved in generating content, as novice or inexperienced writers have more difficulty with idea generation and spend less time planning than skilled writers (Scardamalia & Bereiter, 1986; McArthur & Graham, 1987). Graham and Harris (1989) cite previous research that has shown both learning disabled and normal achieving students spend little time planning prior to writing. Specifically, they noted that on average children with learning disabilities spent less than one minute on planning between the examiner's instructions and the physical start of the writing activity. Further, Scardamalia and Bereiter (1982) concluded that novice

writers lack effective memory search techniques and benefited from external prompting. Englert, Raphael, Fear and Anderson (1988) interviewed students after they had completed a writing activity and found that they had far more knowledge available than was present in their written texts. However, the students seemed to lack the strategies to access and select the information independently. Graham and Harris (1989) also noted that children with learning disabilities had difficulty generating, framing and planning text. Their evidence also suggests the problems that learning disabled students' experienced with content generation were due to difficulty expressing their knowledge, not with the lack of knowledge. Graham (cited in Graham & Harris, 1989) found simply encouraging students to "write more" increased output dramatically.

Students with learning disabilities have difficulty with goal setting. Graham et al (1992) worked with learning disabled students who were poor writers and introduced a strategy structured around the goal setting process. Results indicated that there was an increase in planning time and that students used an increased repertoire of planning and writing strategies.

Specifically, following instruction, students appeared to plan both in advance of and during writing. Almost all of the essays generated after instruction included additional details and ideas that were not included in the preplanning notes. Further, the posttreatment essays were two to three times longer, contained twice as many structural elements, and were judged to be qualitatively superior.

Research on translating as a subprocess. The translating subprocess includes culling and arranging the ideas to form a plan and translating the ideas into print. Stein (1986, p.228) describes this process as finding "ways of representing nonverbal concepts in verbal form." In general, novice writers are not selective in the use of generated ideas in that they cannot imagine discarding anything that would fit the topic. Bereiter and Scardamalia (1986) propose that novice writers implement a "knowledge telling" strategy that consists of a brainstorming technique whereby writers generate everything they know about a topic with little or no attention to the overall organization of the text and the categorization of ideas. As a result, the process of writing for novices becomes a more linear

task. Each idea activates the next idea. Flower refers to this as writer-based prose because novice writers do not think about the reader while they are writing. They appear to be more concerned with the text.

Research on reviewing as a subprocess. The reviewing subprocess involves evaluating, revising and editing. The reviewing process allows the writer to reflect on the draft without the burden of generating the entire structure. The writer monitors the success of the draft in meeting goals and plans. The draft may also be modified to reflect the needs of the audience as well as the goals. Problem solving strategies are very important to self-regulation, especially during the reviewing stage. Students may lack knowledge of problem solving strategies, may not realize their text is inadequate, or may not know when to apply the strategies to solve the problem. Englert et al (1989) found that learning disabled children had less knowledge about the processes related to monitoring and revising text on the basis of text structure than low and high achieving students. Englert and Raphael (1989) argue that this may be due to the less skilled writers' inability to distance themselves from the text and read the text as a naive

reader, the inability to distinguish relevant from irrelevant information, and the inability to anticipate the needs of the reader.In a discussion of writing, Dyson and Freedman (1991) suggest that novice writers tend to revise at a word level, while expert writers make global revisions. Scardamalia and Bereiter (1982) argue that children's difficulty with revision may be due to the cognitive difficulty experienced with language production in which they are required to switch from generating text to assessment. They propose that children cannot "decenter" or distance themselves from what they have written in order to revise - they lack an internal feedback system. Scardamalia and Bereiter developed a technique they call procedural facilitation to provide a routine for switching between generation and evaluation for use by children in grades 4, 6, and 8. Procedural facilitation help was defined as "supports intended to enable students to carry out more complex composing processes by themselves" (Scardamalia & Bereiter, 1986, p.796). A follow-up interview revealed that all the children believed the routine assisted them in an evaluation process that did not normally occur in their writing - to evaluate their writing closely and attempt

to revise it. Further, the study revealed the children also had difficulty with the diagnosis and remediation aspects of the revision process. That is, the students were not able to explain their writing problems clearly and were unable to remedy those problems. In addition, when compositions were compared, the revised versions were not preferred to the originals.

Summary. The independent nature of the writing process, and the number of decisions required throughout the recursive writing subprocesses contribute to the high degree of cognitive difficulty experienced by novice writers. Expert writers, on the other hand, are familiar with their topic, text structure, purpose and necessary problem solving strategies. Novice writers often lack these knowledge sources when planning, translating and revising text. Research has shown that novice writers do not employ effective memory search techniques, and may use a knowledge telling strategy rather than be selective regarding the information they wish to communicate. Often revision is at the word, rather than the idea level. Novice writers seem to have difficulty switching from a generation to an evaluation mode.

Text Structure

Expository discourse is based on the organization of superordinate and subordinate details. In 1984, Meyer defined 5 types of text structure as being:

1) compare/contrast,
2) sequence/chronological,
3) description,
4) cause/effect or antecedent/consequence, and
5) response or problem/solution.

Knowledge of text structure is seen as critical throughout the writing process. It is therefore an important aspect of the planning process as writers can use certain questions and key words to assist with the organization of their ideas and information. For example, when planning a compare/contrast text, the usual questions addressed are "What is being compared and contrasted? On what? How are the concepts alike and how are they different?" The explanation text structure addresses questions such as: What is being explained? What materials are needed? and What is the procedure? During drafting, the text structure being used influences the key words and phrases selected. These key words and phrases act as signals to the reader. Key words such as

"in contrast, alike, different, similarly" can be used as signal words for a compare/contrast text structure pattern. Key words for an explanation text structure include such signals as: "first", "next", "third", and "finally". While editing and revising, the clarity and accuracy of the information are judged partly on the basis of the text structure.

Three generalizations are evident as a result of the research in the area of text structure. First, text structure knowledge is associated with both enhanced reading comprehension and the quality of compositions. Some researchers maintain students may lack the requisite knowledge about text organization to compose and comprehend expository text. Work on the role of text structure in writing suggests that there is a positive relationship between text structure knowledge and writing ability (Hillocks, 1986). Squire (1983) and Barlett (cited in Taylor & Beach, 1984) found that instructional experience in expository text organization aided comprehension and composition. Further, Garner and Gillingham's (1987) work with 5th and 7th grade students' knowledge of text structure concluded that the use of text structure requires direct instruction as students do

not intuitively consider the structural properties of text when reading and writing. In addition, Raphael, Englert, and Kirscher (1986) found teaching students about expository text structures had a positive influence on report writing as well as on content area composition. Taylor and Beach (1984) found some support for their contention that attention directed to text structure during reading may help students organize their summary writing, suggesting that text structure appears to be an important common element in both the comprehension and production of expository text. Birnbaum's study (cited in Taylor & Beach, 1984) suggested that an understanding of expository text as a whole and the relationship among superordinate and subordinate ideas is necessary to write competently.

The second generalization stemming from text structure research suggests that children have difficulty creating a global text structure, indicating that knowledge of text structure appears to be developmentally acquired (Brown & Smiley, 1977; Englert & Hiebert, 1984; Bereiter & Scardamalia, 1986). Finally, some researchers have examined the types of text structure children find the most difficult. Englert and Hiebert (1984) found that

students made the greatest gains in the acquisition and mastery of descriptive forms of text structure as evidenced by gains in the quality of their writing from grades 3 to grade 6. Compare and contrast text was one of the most difficult text structures for students to master in this study. These findings were supported in research by Raphael, Englert, and Kirscher (1986) who found that compare/contrast was one of the most difficult text structures for upper elementary school children to compose. Compositions requiring sequence or explanation tended to be the easiest. In contrast, Richgels, McGee, Lomax and Sheard (1987) presented evidence that compare/contrast was found to be one of the more salient text structures for sixth grade students. Thus the research indicates that writing performance is influenced by the type of text structure the writer attempts to construct (Englert & Hiebert, 1984; Englert & Thomas, 1987).

Children with special learning needs seem to have particular difficulty with the organization of text. An analysis of compositions written by learning disabled students (Graham & Harris, 1989) revealed that the compositions of such students did not adequately meet the

purpose, conventions and features of the genre required. It appeared that the use of genre-specific knowledge and the organization of relevant information was limited. Englert et al (1988) found these children have problems deciding about the overall presentation and ordering of ideas (conforming to a text structure) as well as categorizing and labelling related ideas. Children tended to generate and write low-level random details rather than use an organizational pattern on which to structure the information.

Summary. Knowledge of text structure appears to be critical in the writing process. When planning a composition, this knowledge assists with the organization of ideas and information. At the revision level, clarity and accuracy are evaluated partially on the basis of text structure. Research has shown that there is a positive association between text structure and writing ability. Further it appears that direct instruction in the use of text structure is required as novice writers do not consider text structure while composing. Of the various text structure forms, compare and contrast appears to be the most difficult for students. Further, investigations have shown that children with special learning needs have

particular difficulty with the organization of text. Therefore it would appear that direct instruction in the use of text structure would be advantageous for these children.

Metacognition and the Writing Process

Flavell (1976, p.232) defines metacognition as "one's knowledge concerning one's own cognitive processes and products or anything related to them", and "metacognitive knowledge consists primarily of knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises" (Flavell, 1979, p.907). Brown (1978) breaks metacognition into two components: the awareness and control of factual or declarative knowledge necessary to complete a specific task, and the awareness and control over the necessary processes or procedural knowledge to complete a task. "Awareness and control" refer to the executive monitoring of knowledge. Paris, Lipson and Wixson (1983) expand that notion and suggest three types of knowledge are subsumed under metacognitive knowledge. These three types of knowledge are declarative, procedural and conditional. Declarative

knowledge is described as information about the structure, audience and the goals of the task. In other words "knowing that" writing includes the various subprocesses and activities. Procedural knowledge describes the "knowing how" or the strategies writers would use to accomplish their goals. Finally, conditional knowledge involves the "knowing when and why" or the appropriate use of the strategies actually implemented during the writing process.

Marzano (1991) stresses that a key component of the Hayes and Flower model of the writing process is the monitoring that exerts executive or metacognitive control over the component processes. Further, the key to metacognitive control of the task is goal setting and the establishment of subgoals. Bereiter and Scardamalia (1982) have shown that childrens' metacognitive control over goals can be improved by giving them verbal prompts about possible next steps in the writing process as they "think aloud".

The role of metacognition in the writing process has been at the centre of research conducted by Raphael, Englert and colleagues. Englert, Raphael, Fear and Anderson (1988) found metacognitive knowledge was

positively correlated with students' written performance. They compared the results of a metacognitive interview with students' written products using compare/contrast and explanation structures and found that students with learning disabilities were less aware that normal achieving students of modelled writing strategies, steps in the writing process, strategies for presenting expository ideas and the use of organizational strategies. Further, Raphael, Englert, and Kirschner (1989) examined the changes in upper elementary school students' metacognitive knowledge as a result of participating in instructional programs that emphasized the role of text structure knowledge and the communicative context of writing. Results indicated that with instructional intervention students demonstrated heightened metacognitive awareness as well as improvement in the quality of their writing.

Wong, Wong, and Blenkinsop (1989) examined the metacognitive strategies of students with learning disabilities in relation to their ability to write informational text. They found that their writing was less clear and less interesting with more mechanical errors when compared to the writing of normal achievers.

They concluded that students with learning disabilities appear to be less familiar with writing tasks and less aware of the importance of planning and audience needs.

It is evident that throughout the writing process, a writer's inner dialogue is very important. Self-talk is seen as important to self-regulation for all writers (Daiute, 1985). Through all the writing subprocesses, the expert writer employs self-questioning strategies. When planning, questions are raised about purpose and audience, for example. When drafting, the writer asks if appropriate signals are being provided to the reader, and when reviewing, the writer questions the clarity with which ideas are expressed.

Englert and Raphael (1989) suggest that there are four instructional problems that impede the development of self-regulation. There is often a failure to establish a literacy promoting environment in which students write for meaningful purposes and real audiences. Second, instruction in the writing process is often separated from the content in which it is applied. As a result, the students may learn isolated skills without the knowledge of where and how to apply these skills. Third, there is insufficient attention to the development of the

students' conditional knowledge about writing. Finally, instructional procedures tend to be procedural rather than dialogic. These authorities, therefore, suggest that writing instruction should provide opportunities to enhance students' executive control. In his 1986 review of writing research, Hillocks stated that in order for writing instruction to have a powerful effect on students' thinking, instructional activities must provide for interactive discussion regarding problems encountered during the composing process and result in a high level of student autonomy. Without metacognitive knowledge, students remain dependent upon others to tell them what to do. Hillocks argues that the most important knowledge is procedural. Writers must be aware not only of the recursive nature of the composing process, but also specific strategies for the production and transformation of data for use in writing.

Summary. Metacognitive knowledge has a key role to play in the writing process. The accomplished writer must have declarative, procedural and conditional knowledge - knowledge of the writing subprocesses and activities and also appropriate knowledge regarding the use of strategies to accomplish writing goals. Therefore

classroom instruction must provide opportunities to develop both knowledge of the writing process and strategies in order to foster student independence.

Instructional Interventions

New instructional strategies for teaching writing have just begun to appear in the literature within the past 5 years. Englert, Raphael and Anderson (1992) suggest that effective writing instruction is characterized by four features that emphasize:

1) the development of students' declarative, procedural and conditional knowledge,

2) dialoguing or conferencing during the writing processes,

3) the provision of scaffolded instruction, and

4) writing as a collaborative, rather than a solitary activity.

Furthermore, based on a review of studies in which strategies and metacognition were taught to children, Winograd and Hare (1988) cited in Paris (1991) identified these features as being key components in effective remedial instruction. Englert et al cite that together, these features form a "socially mediated" approach to

instruction. The importance of the first two features has been addressed. At the instructional level, scaffolding and teacher modelling of the appropriate vocabulary and language used in the writing process of a mature writer is seen as critical. Instruction must provide an opportunity to make the invisible aspects of the writing process apparent to the novice, or developing writer. Effective strategy instruction is based on scaffolded instruction. Beed et al (1991) describe three features of scaffolded instruction. First, the instruction takes place in a collaborative context between the learner and the teacher. This is akin to Vygotsky's suggestion that social interaction leads the child's development forward (Bayer, 1990). Second, the teacher's assistance allows the student to operate in the "zone of proximal development", defined by Vygotsky, as the area between what the child can accomplish independently and the level at which the child requires assistance to complete the task. Third, as the student develops more competence, gradual withdrawal of support is necessary because the final goal is complete independence as the learner's knowledge becomes internalized. However, Cazden (1988) cautions that while the scaffolding metaphor is static,

the process of teaching and learning is dynamic. Therefore both the teacher and the student must build a support structure that meets the learners' needs. The teacher should provide for a variety of interactions during writing instruction.

One way the classroom teacher can scaffold instruction is through procedural facilitation (Scardamalia & Bereiter, 1986) which cues strategy use and reduces the "executive demands" of the task. In this way, students appear to gain procedural knowledge of the criteria which influences their independent writing (Hillocks, 1986). A form of procedural facilitation (Bereiter & Scardamalia, 1982) employed the use of cue cards to assist students with revision decisions. In addition, Englert and Raphael (1989) describe the use of "think sheets" as prompts to cue writing strategies for the writing subprocesses.

In a review of the literature on the written composing ability of children with learning disabilities, Newcomer and Barenbaum (1991) state that there is a paucity of research pertaining to the effects of instruction regarding the development of the use of text structure and the production of coherent compositions.

They also point out that a small group of researchers have dominated this specific area of study with intermediate age students. Graham and Harris (1989), and Englert, Raphael and their associates (1991) have all developed instructional training methods and programs. Three studies conducted by Graham and his associates involved intensive strategy training designed to help writers remember the steps in the writing process. Graham and Harris (1989) found a strategy designed to facilitate the generation, framing and planning of argumentative essays had a positive effect on learning disabled students' writing performance. Sixth grade students were introduced to the components of a good essay and taught a three step strategy for writing. Modelling and think-alouds were used to introduce four types of self-instruction (problem definition, planning, self-evaluation and self-reinforcement). Results showed substantial increases in the average number of functional essay elements as well as increased prewriting (planning) time and higher coherence. In 1989, Graham and Harris extended this study to a comparison of children with learning disabilities and normal achieving students using a story grammar format with similar results. In addition,

Graham et al (1992) found this planning and writing strategy had a positive effect on learning disabled students' essay writing performance and knowledge of the writing process. Englert, Raphael et al (1991) showed that a comprehensive expository writing program, Cognitive Strategy Instruction in Writing (CSIW), improved the overall writing quality of learning disabled and non-learning disabled students.

Cognitive Strategy Instruction in Writing. Englert and Raphael (1989) describe CSIW as "a program designed to provide an alternative instructional mode based in the tradition of socially-mediated instruction" (p.122). CSIW has developed from research that initially examined the use of a single text structure to improve composition and progressed to learning about text structure within the context of the writing process.

Kirschner and Englert (1988) developed the Expository Writing Program (EWP) as a way of improving the informational writing of poor readers. Research showed that the use of EWP think sheets as a basis of instruction improved the students' writing. However teachers using EWP, used the think sheets as a basis for instruction and did little writing or modelling

themselves. Therefore, the instructors' discourse tended to be procedural with minimal or no emphasis on the thinking underlying the writing of informational text. CSIW was developed to improve and expand upon EWP. According to Raphael and Englert, Cognitive Strategy Instruction in Writing (CSIW) was designed to provide opportunities for making the expository writing process more visible and accessible to students, and to foster dialogue among the classroom teacher and the students about the expository writing process. The process begins with the teacher initially in control of strategy use and gradually, through talk, modelling and think-alouds, the transferring of responsibility to the student.

CSIW focuses on four recurring phases:

1) text analysis,

2) modelling the writing process,

3) scaffolded assistance, and

4) providing students with opportunities for independent writing.

In the Raphael and Englert study, writing samples and interviews were used to explain the changes observed in: 1) expository writing performance, 2) metacognitive knowledge about writing, and 3) the dialogue about the

writing process and writing strategies. CSIW students made significant gains in their ability to produce well organized expository text. There was also evidence of increased sensitivity to audience, and an increase in the presence of purpose-setting statements. In addition, the students' posttreatment interviews showed a developing sensitivity to text structure and the author's right to make editorial changes. The investigators concluded that CSIW did contribute to the active rehearsal and development of self-regulation, self-talk and active experimentation with written language.

Conclusion

As children have limited experience with expository writing, it is assumed they will have greater difficulty using expository forms for communication (Cox, Shanahan, & Tinzmann, 1991). The examination of children's expository writing is a relatively new and developing field. Knowledge of the writing process and text structure as well as metacognitive knowledge all play vital roles in successful expository writing. The recursive nature of writing implies that classroom instruction must allow for writer flexibility and time

for the subprocesses to cycle back to each other. Further, as every writing subprocess is not involved in every writing activity, students must be aware of the writing process as a whole, its component subprocesses and where its use is applicable. Therefore, there is a need to develop the children's writing strategies and self-regulating mechanisms so that they can rely on their own resources. Work with upper elementary school children by Raphael, Englert and Kirschner (1986), and further work with learning disabled students by Englert et al (1988) demonstrated that children had difficulty with three facets of writing: idea generation, text organization and metacognitive knowledge.

Newcomer and Barenbaum (1991) indicate that mere practice and the opportunity to write over time are not sufficient to enable students with learning disabilities to internalize the strategies necessary to write effectively. Specific strategy training and effective teaching strategies are needed to address these needs. Newcomer and Barenbaum (1991) suggest replication of research in this area. Therefore, this study will examine the effectiveness of one of the instructional writing programs recently developed by Englert, Raphael and

associates, Cognitive Strategy Instruction in Writing (CSIW). Children's metacognitive knowledge of the writing process will also be explored.

Chapter 3

Method and Design

The school in which this study was conducted is located in a small village approximately 25 miles northeast of London in the county of Hertfordshire. The school consists of 5 classrooms with students ranging in age from 5 to 11. There appears to be a very strong emphasis on activity based learning, technology and written language. Walking into the school, a visitor sees many, many books that have been published by the students. These books also form an information resource for the students. Perhaps the most striking feature of the children's books is their presentation and format. Audience appeal is a factor in publishing as not only are the books very readable, but attractive to the eye.

The following description was recorded during a conversation with the classroom teacher regarding the within class academic environment and the writing that takes place in the classroom:

Writing activities take place in just about

every area of their (students') work. For example, in maths, calculations are used to achieve a final statement. As a result of their investigations, the children must have a written statement to accompany it. As a general policy - all books must be readable, even their maths books. The children are in the habit of having to explain what they have done in science project work. The writing is usually based from their experiences. Our starting point is a real experience. The science component of the National Curriculum states the children should be involved actively 60 percent of the time.

Topic work is a focus - so something we are working on is reinforced in 2 or 3 areas. A lot of the students' language is presenting their own experience in a practical way. With creative language, the classroom teacher focuses on a certain area and a variety of sources are used such as books, the students own reading, selections the teacher chooses and the children's own experiences so there's a connection - a link between the topic and the children. Then within that area, the classroom teacher adds the vocabulary and

comprehension skills, language skills, etc. For example the work on the book, **The Iron Man** came about when one child was interested in the book and all the children became hooked. We used **The Iron Man** to start our first formal debate - 3 students for, and 3 against. Then the children had to think about their points and how to get them across. At this age, developmentally the children need to know they have the opportunity to get their point of view across.

Reading is free reading and supported by the classroom teacher. The students do book reviews on a regular basis - oral as well as written reviews. The children are quite good at telling one another how they feel about a book. At this stage we need to refine those critical skills.

Ongoing throughout the year is proofreading and developing proofreading as a team. The children read their work a great deal - to the teacher, to one another. A question often asked is "how does it sound?"

The classroom teacher tries hard to create situations where the children have an audience. For

> example the class magazine - the children started writing articles for the news sheet, the actual writing goes on during playtime (recess). The children are hooked, as last year, by selling the paper for a few pence. They made some money for their charity fund. This is an area where the children are free to write about whatever they wish - animal rights issues, green issues. It's their voice, so the magazine is important to them. The children cluster in groups of their own choosing and as a team agree regarding the editor position and the topics. So team work is important.
>
> (February, 1993)

Subjects

Two average and two "learning disabled" students were chosen to participate in the study to permit a comparative analysis of the effects of the intervention on children of different ability. Each of the four students from Key Stage 3 (see definitions), ranging in age from 9 to 11, was selected by the classroom teacher who was instructed to select: 1) two "average" students who were functioning within the National Curriculum

levels expected for their chronological age and class placement; and 2) two children functioning at least 1 Key Stage below the range expected for their chronological age and class placement.

The researcher met with each subject individually to confirm the teacher's assessment of the children and compare academic potential with academic functioning by analyzing receptive vocabulary and reasoning ability levels in relation to actual word recognition and reading comprehension performance.

Tests administered. The tests were selected because they represent the standard assessment battery used in Great Britain. The following test battery was administered individually to each student so that academic potential and actual reading achievement could be compared: The British Picture Vocabulary Scale, which measures receptive vocabulary and serves as a rough indicator of intellectual functioning; the British Ability Scales - Reasoning Subtest, which measures nonverbal reasoning abilities and complements the vocabulary test as an estimate of intellectual capacity; and the Neale Analysis of Reading Ability, Revised British Version 1989, which measures word recognition and

comprehension performance.

Test results. The results of the baseline assessment are displayed in Table 1 on the following page. In general, the pretesting confirms that the subjects identified as learning disabled possessed high learning potential but were not performing academically at their expected level. Names used are pseudonyms, and the subjects are ordered in that the performance of the 2 students identified by the classroom teacher as average is presented first.

All scores on the Neale Analysis of Reading Ability were lower than expected. The fact that students were unfamiliar with the format of an informal reading inventory, and were possibly apprehensive about reading to the investigator may have affected their performance.

Table 1

Comparison of Potential and Actual Academic Functioning Level

Subject	Chronological Age	British Picture Vocabulary Scales	British Ability Scales-Matrices
William (A)	9.9	%ile Rank 60	Centile 65-67
Matthew (A)	10.9	%ile Rank 30	Centile 31-32
Howard (LD)	11.1	%ile Rank 94	Centile 30-31
Tony (LD)	9.10	%ile Rank 94	Centile 89
	Neale Analysis	of Reading Accuracy	Ability Comprehension
William (A)		Stanine 3	Stanine 4
Matthew (A)		Stanine 4	Stanine 4
Howard (LD)		Stanine 1	Stanine 1
Tony (LD)		Stanine 4	Stanine 4

9.9 = 9 years, 9 months %ile Rank = Percentile Rank

Centile = Percentile Rank A = Average

LD = Learning Disabled

William is the first student listed in the Table. Estimates of his receptive language and nonverbal reasoning were found to be within the "average" range. The classroom teacher suggested William's reading skills were approximately one year below his chronological age, although the results of the preintervention reading test (Neale Analysis of Reading Ability, 1989), estimated William to be reading approximately 2 years below the range expected for his chronological age. However, based on the classroom teacher's knowledge of William and because his classroom performance was judged to be within the National Curriculum guidelines for his age group, William was selected as an "average" student who might benefit from the CSIW intervention.

The classroom teacher indicated that Matthew, the second subject, was reading at a level that matched his chronological age. During the preintervention reading assessment, Matthew read fluently and clearly. Although, the results indicated Matthew's reading accuracy was within the equivalent age range, his reading comprehension level was below the level expected for his age. Both receptive vocabulary and nonverbal reasoning estimates were also within the low average range.

Matthew's lower than expected performance levels may be due to his sensitivity to tasks that were different from his daily routine. Nonetheless, his level of performance appears to be commensurate with his ability. Matthew was selected by the classroom teacher as an "average" student who might benefit socially from the small group interaction that would take place during the CSIW intervention.

The preintervention tests results indicated that Howard and Tony, the two "learning disabled" students were working below the level expected both for their chronological age and academic potential. The baseline assessment indicated Howard was functioning well below his expected level. While scores on the nonverbal reasoning ability task fell within the range considered normal, his receptive vocabulary as estimated by his performance on the British Picture Vocabulary Scales was in the moderately high range. Despite this potential, Howard's reading level was well below the range expected. When asked to read the passages, Howard cringed visibly and appeared to be very anxious throughout the reading activity. According to the classroom teacher, Howard scans for meaning and avoids reading.

Results of the preintervention assessment indicated that Tony's nonverbal reasoning skills and receptive vocabulary were within the average to moderately high range, respectively. However Tony's reading level was below the range expected both for his chronological age and intellectual capacity.

In summary, Howard and Tony appear to have academic potential. However they are not performing (in reading) at a commensurate level and therefore for the purposes of this study could be considered "learning disabled".

Tests Administered

The assessment devices used in this study consisted of a) a pre and postintervention test of students' metacognitive knowledge and b) two writing assessment measures.

Metacognitive interview. To measure the students' metacognitive knowledge about the writing process and their sense regarding how written texts are organized, an interview developed by Englert, Raphael, Anderson, and Fear (1988) was employed. The interview used vignettes which centred around the writing difficulties of 3 hypothetical children. Vignettes, rather than think

alouds were used because vignettes provide a more concrete referent. It was expected the students would provide a more detailed explanation of their thinking if they were asked to help other children rather than explain their thinking to an adult examiner. The hypothetical children in the vignettes were given male names as all 4 subjects were male. As this study was examining the explanation and compare/contrast text structures, the vignettes as well as the scoring continuum from the Englert et al (1988) study were utilized. Some of the material in the vignettes was altered to provide situations that would be familiar to students living in Great Britain. The text of the vignettes and the interview questions are presented in Appendix A.

The first vignette centred on the generation and organization of ideas for writing reports. The subjects were asked to give advice to a student who had difficulty with report writing. Specifically, the subjects were asked to help the student generate and organize ideas about a wild animal. The purpose of the second vignette was to determine the subjects' knowledge about writing and editing. The subjects were asked to evaluate Ben's

compare/contrast paper on McDonalds and Ponderosa (as Ponderosa does not exist in England, Burger King was used as a substitute). The subjects were then asked to give Ben assistance in writing a compare/contrast paper on England and France (the original vignette involved comparing and contrasting the states of Florida and Michigan). The final vignette explored the subjects' knowledge about revision and text analysis. The subjects were asked to help revise a paper. Their suggestions were recorded directly onto the paper. Once again the text was altered to accommodate the English terminology. In this case, the word "biscuits" rather than "cookies" was used. All interviews were tape recorded and later transcribed. The criteria for analyzing the students' responses are provided in Appendix B. Appendix C contains the scoring analysis of a representative metacognitive interview.

Writing assessment. To assess the students' composition ability prior to the intervention, students were required to compose 2 papers: one to evaluate preintervention performance in writing an explanation, and one to evaluate preintervention performance on a compare/contrast composition. As the 4 subjects had completed making a mobile in class, directions for the

pre-intervention explanation text structure task asked the students to explain how to make a mobile. Directions for the pre-intervention compare/contrast paper asked the students to consider two different people, places or things they knew a lot about (e.g., a brother and a sister, two games) and to think about how these two were alike and different.

Following the intervention, the students were required to compose an explanatory paper and a compare/contrast composition. The students had been caring for and studying the development of stick insects and caterpillars in the classroom. Directions for the post-intervention explanation text structure task asked the students to explain how to care for a stick insect or a caterpillar. Directions for the compare/contrast paper asked the students to compare and contrast stick insects and caterpillars, and to think about how these two insects were alike and different.

The students were encouraged to assume informant roles and write as if they were 1) experts on the topic and 2) writing for a naive audience. As the compositions were first drafts, the students were instructed to concentrate on putting their thoughts down on paper. The

criteria for scoring performance using the respective text structures is presented in Appendices D and E. Incorrect spelling, grammar and punctuation were not penalized. If the students' work was illegible, the students were asked to "read what you have written so I know what it says" and the examiner provided a written transcription above the students' product.

Intervention

Cognitive Strategy Instruction in Writing. According to Raphael and Englert, Cognitive Strategy Instruction in Writing (CSIW) is designed to: 1) provide opportunities for making the expository writing process more visible and accessible to students; and 2) foster dialogue among the classroom teacher and the students about the expository writing process. The process begins with the teacher initially in control of the strategy use and gradually through talk, modelling and think-alouds, transferring the responsibility to the student. CSIW focuses on four recurring phases:

1) text analysis,
2) modelling the writing process,
3) providing scaffolded assistance, and

4) giving students opportunities for independent writing. There was a focus on the social aspects of writing including highlighting: 1) the importance of audience in planning, organizing and editing; and 2) the role of text structure. Think sheets were used to parallel the organization and thinking of mature competent writers. The acronym "POWER" made up the subprocesses represented by the think sheets Plan, Organize, Write, Edit, and Revise.

The **Plan** think sheet (see Appendix F, Figure 1) was designed by Englert and Raphael to help the writers establish their audience, set a purpose for writing, and access their background knowledge. Questions such as "Who will read this?", "Why am I writing this?", "What do I know about my topic?", and "How can I group my information?" assist the writer in formulating a plan prior to writing. The **Organize** think sheet was a pattern guide that represented the text being studied (See Appendix F, Figures 2 and 3). Graphic organizers and key words were inserted to assist the novice writers with the organization of the text structure. The **Write** think sheet consisted of lined coloured (green) paper. The coloured paper was used to reinforce the idea that this first

writing was a draft, and therefore mechanics were not an issue. The **Edit** think sheet was designed to be clear and reader friendly. The purpose of this think sheet, as shown in Appendix F, Figure 4, was to assist the students in the editing process and help them become aware of the importance of the reader and the need to clarify information. Thus the focus of the **Edit** think sheet was on content and clarity. The **Revise** questions, located at the bottom of the **Edit** think sheet, were designed to assist the writer with the implementation of the suggestions made during the editing process. At this level, the author had control over the decision making process. The revisions were made directly on the first draft. The last step in the process consisted of either writing the final draft on white lined paper or entering the final draft into the computer.

Procedures. The study procedures consisted of 3 stages - 1) conducting the metacognitive interview and obtaining baseline writing samples; 2) carrying out the intervention - the CSIW training period; and 3) obtaining the post training interview and writing samples. The metacognitive interview was administered by the researcher to each student individually in 2 separate

sessions. Each session was audio-taped and later transcribed by the researcher. After the metacognitive interviews had been completed, the written compositions were gathered during 2 separate group sessions. The students wrote the explanation paper during the first group session, and the compare and contrast paper was written 3 days later.

Instruction in CSIW began in February and concluded in June, a five month period. The training sessions were implemented in a small group situation twice a week. Each session was approximately 45 minutes in length and was conducted outside the classroom setting. The lessons focused on the 4 recurring processes for each of the two text structures: text analysis, modelling the writing process, guided writing practice and independent use of the strategies. The students were introduced to the explanation text structure first. The first phase, text analysis introduced the students to the types of questions addressed in explanatory text, the key words or phrases that act as signal words (such as first, second, next), and the types of questions an audience would have about the topic. Student writing samples selected from articles written by Raphael and Englert were used both to

model the information and as a basis for a think aloud discussion. The explanation writing samples used as models are provided as follows:

Monopoly

Do you know how to play monopoly? Well, if you don't I'll show you. Get ready, here we go.

First, you need to know the materials you need: Game board, dice, people and money.

Secondly you need people. Up to six people can play at a time.

Thirdly, you need to know the steps. You are not ready to play yet, because you don't have any money. You need 2 five hundreds, 2 one hundreds, 2 fifties, 6 twenties, 5 tens, 5 fives, and 5 ones = £1,500. The way you get the money is if you pass go land on FREE PARKING.

Now you may begin. Here we go. Roll the dice then move your piece. If you land on something you want to buy, you may. Then you may get a card. If somebody lands on it they pay you rent. You do not have to buy if you do not want.

Finally, you win when everybody runs out of money.

(p.396)

Traveling by Plane

Are you bored? Then take a trip. It's fun-I did! I was real scared at first but you'll get used to it. First, you buy your ticket at the ticket office. Next you take out all your clothes and see what you're going to take. Third, you pack what you're going to take. Oh, you can only take two suitcases at a time. Then you get on a plane and sit in the seat you're assigned to. You can eat on the plane and do activities. You can only stand up when the plane is in the air. Last, you're there. (p.390)

The third explanation sample used to model the process of revision and the need for clarity was written by an 8 year old at the research site during the previous year.

Making a double roundabout

By myself I made a double roundabout. I got

> some plastic brick shapes, three double squares and screwed them together to make a flat. The gears you have to attach to the square one with a long screw. I made shapes going up the roundabout and screwed it together. Then we screwed the other roundabout only one square. And I used a short screw not a long one cause it was too long. To work it what you have to do is in this hole in the gear you put a screw in the gear and turn it around. Then it connects to the other gears and turns around. I really enjoyed makeing it.

A think aloud discussion addressed questions regarding the clarity of the writing samples and also provided additional information that may have been necessary as a result of unanswered questions the reader may have had related to the piece of writing being examined by the students. For example, the students were asked "What other information could have been added to make the paper more informative, or more interesting?", "Did the author catch the reader's attention?" As additional writing samples of varying quality were used, the students were encouraged to participate in the text analysis.

As the students became familiar with the explanatory text structure and its associated key words, phase 2, modelling the writing process, was introduced. As the students had been frustrated by the lack of clarity in the paper, "Making a double roundabout" that was analyzed during the text analysis phase, they decided to make a double roundabout and use their experience as a basis for writing a group explanation paper. Throughout this phase, the researcher attempted to articulate the inner thoughts that occur as one writes. As the process was modelled, the following questions were considered "Who will read my paper?", "Why am I writing the paper?" so students were aware of the importance of considering audience and purpose during the planning stage. As the materials and steps were recalled, the following thoughts were shared: "I'll brainstorm as many ideas as I can. I don't have to worry about using complete sentences or the order of my ideas". Students were asked to participate in generating the materials needed, and the steps and events that took place during the hands-on activity. The students' suggestions were recorded without editing the ideas in any way. Monitoring statements were modelled such as " How are we doing?" "Have we thought of everything the

reader needs to have?" and "It's OK if we forgot something." "We can come up with more ideas when we draft or organize the first draft". At this point, the researcher modelled how to group the ideas into categories such as steps, materials, events and purpose.

The **Plan** think sheet was then introduced as a recording device to refer to later as writers cannot always complete a writing activity in one sitting. As the **Plan** sheet was completed, the point was made that the sheet was not a worksheet to be corrected, but a tool that can help the author make decisions about how to order the notes or ideas, to help and direct the author's thinking, and could be used as a basis for discussion. Using the **Plan** think sheet, the brainstormed information was evaluated in terms of what was important (what to add and what to omit). The students were also asked to participate in these decisions. The concept of making an interesting introduction to "grab" the readers attention was introduced. Suggestions were taken from the students to ensure that the introduction was related to the topic and purpose.

The **Organize** think sheet was presented as a way to prepare to write a first draft. Decisions were made

regarding the ordering of information. The key words were stressed as an organizational aid both to the writer and the reader. The researcher led the group in writing the first draft and modelled how to take the information from the **Organize** think sheet to the **Write** think sheet (lined coloured paper). It was emphasized that a first draft was a signal that the focus is on content and organization, not mechanics and grammar. As the researcher wrote the first draft for the group, the modelling continued in terms of articulating the thinking (monitoring and evaluation strategies) that occurred during the first draft as ideas from the **Organize** sheet were written: "Is this making sense?" "How does this introduction sound?" "Am I capturing the reader's attention?"

As the students had used a form of explanation text structure in the class, and seemed comfortable with the process, phase 3, guided writing, was introduced. As the students had just completed a classroom activity that required an explanation to be written, all students wrote about the same topic - how to make a pop-up. The students shared their ideas and experiences in the class as all the students had made different forms of a pop-up. The students planned their topics using the **Plan** think sheet

and later shared their plans with their peers in order to receive advice, and feedback. The same format was followed for the **Organize** think sheet. However the researcher also emphasized that the think sheets were simply tools that effective writers use to remind them of thinking strategies and dialogue. At all times the researcher was available to assist the students as they moved through the process. When the students had completed their **Write** think sheet, the **Editor** think sheet was introduced by the researcher. Using a passage modelled in a previous lesson, the editing process was modelled using the points of the think sheet as a guide to evaluating the paper. In addition the students were asked for their suggestions in terms of organization and revision. The students were then asked to use the **Editor** think sheet on their guided writing papers. Based on the decisions made at the editing level, revisions were encouraged and the researcher assisted the students in making the revision.

Using the compare/contrast structure. Once the students appeared to be comfortable with the explanation text structure after nine sessions, text analysis of the compare/contrast text structure was introduced. The basic

format and passages were adapted from Englert and Raphael (1989). The second text structure was introduced as compare and contrast, and the researcher modeled one purpose for writing compare/contrast - to convince an audience that one point is better than an other. The researcher began by explaining that comparison was used often in our daily lives. Much of our decision making was made as a result of comparing and contrasting two things to see which was better: for example, whether to rent a video or go to the cinema. The researcher expanded further upon the video versus cinema example, and compared and contrasted the two. Terms such as "I remember", "I can picture", and "I think" were used to indicate to the students the type of dialogue that takes place. The children were invited to state an example of the last time they made a decision and what they compared and contrasted. A second reason for using compare and contrast was then presented - to inform by comparing something familiar with something unfamiliar. An example was used and the key words such as "alike", "different", "both have", "but" were introduced. Students shared experiences when they compared 2 things, one that was familiar to one that was less familiar. The following

passage, written by the examiner, was critiqued:

Deep Pan Pizza and Pizza Hut

Pizza Hut is a big place it even has an area for birthday parties and a salad bar. The kids always have lots of fun at parties there and end up playing games and running around. The children get balloons and party bags. They have good pizza and good ice cream too. My favourite is the ham and pineapple pizza and chocolate ice-cream. Deep Pan Pizza is different. It doesn't have a party area. The only thing I like there is on Tuesdays you can eat as much pizza as you like for £2.99.

The researcher shared thoughts and reactions to the passage, with a focus on the purpose and whether the passage made sense, making comments such as "I think the author is telling about 2 different places", "The clues are in the title", "I wonder why he is writing this - What's the purpose?", "There are clues to tell us it's compare/contrast - title with 2 things mentioned, the word 'different' is used." Then the students were guided through a discussion of the quality of the passage in terms of 1) identifying what was compared and contrasted,

2) identifying features on which they were being compared and contrasted, 3) using key words and phrases appropriately, 4) describing both similarities and differences for the features named, and 5) general interest level and audience appeal. The students were asked to share their ideas as to how the paper could be improved. The same procedure was repeated with the following passage excerpted from Raphael and Englert (1990).

Bats and Owls

> My story is about bats and owls. Most animals are awake during the day but bats and owls sleep during the day and eat at night. The difference between the two are bats sleep in a cave with many other bats they sleep upside down owls live in trees and if they tried to hang upside down they would fall off.
>
> (p.388-389)

Two countries were selected to compare and contrast in phase 2, modelling the writing process. Using the **Plan** think sheet as a tool, the researcher began by modelling the generation of the topic and perceived audience,

stressing that the audience could be anyone from one person, to thousands of people (like the people who write for newspapers). Establishing the purpose was stressed as one of the most important parts of the planning, as when writing a compare/contrast the author must decide if the purpose is to convince your reader or compare something that is unknown to something that is known. For the purpose of the lesson, Canada and England were used. The following point was made: "...might have to remind yourself often of the purpose as it frames the way you write and think about your paper - whether you're convincing or informing." Ideas known about the topic were brainstormed and the ideas were grouped into categories such as geography, language, climate, people and money. Once again, frequent reference was made to the various strategies such as "I'll brainstorm as many ideas as I can", "I don't need to use complete sentences at this stage", "Have I thought of everything the reader needs to know?". The **Organize** think sheet was then introduced. The students were taken through the thinking process as well as the need to reaffirm the topic and the purpose. Decisions were made regarding the categories and the supporting details to use in terms of similarities

and differences. The students were led through the first draft writing process using the **Write** think sheet following similar dialogue as in the explanation text structure activity.

Group composition. The same format was followed to write a group paper using compare/contrast. A group decision was made as to the purpose of the compare/contrast paper. The researcher acted as a scribe as the students moved through the writing using the **Plan**, **Organize**, and **Write** think sheets. The same questions and strategies were posed by the researcher as in previous sessions. The students then entered the guided writing phase. Once again the topic was of their own choosing as the students wrote a compare/contrast paper following the same procedures that were carried out during the previous guided writing phase using an explanation text structure.

The remainder of the sessions focused on the students gaining independence and writing two papers, one on each form, for publication using both an explanation and/or compare/contrast text structure. The students were encouraged to use the strategies more automatically, although the researcher continued to model and provide ongoing feedback whenever necessary, based on the

individual needs of the students.

Following the CSIW training period, a posttraining metacognitive interview was conducted with each subject individually. The interview was tape-recorded and later transcribed for analysis. Upon completion of the interviews, the students were asked to write an explanation paper and a compare/contrast paper following the same procedures as the pretraining writing assessment.

Scoring Procedures

All protocols were scored first by the investigator and then by a second rater who was trained by the investigator. The second rater is a qualified teacher who has additional training and experience in the area of specific learning difficulties.

Metacognitive interview. The responses from the metacognitive interview were divided into 2 categories - knowledge of the writing process and organization. Based on work by Englert, Raphael and Anderson (1992) the questions directed at the student's knowledge of the writing process focused on 5 writing activities: 1) the writing process used when composing a paper, 2)

recognition of the value of modeled writing strategies for generating, grouping and organizing expository ideas, 3) procedures for managing and presenting sets of expository ideas in a paper, 4) monitoring the completeness or adequacy of a paper, and 5) revising expository compositions. The organization questions measured the students' abilities to: 1) suggest strategies for organizing planned ideas, 2) use categories as a basis for generating, organizing and labelling ideas, 3) translate ideas into text by following a text structure plan and providing signal words to the reader, and 4) use text structure in monitoring and revising incomplete texts. See Appendix B for details.

The audio-taped responses were transcribed and placed on a continuum ranging from high to low knowledge responses. High-knowledge responses were defined as those that accurately described or explained the component of the writing process targeted by the question and given a score of 3. A medium-knowledge response was one which revealed some knowledge but missed out critical components and received a score of 2, and a low-knowledge response revealed a lack of understanding of the

component targeted by the question and was scored as 1. The pre- and post-intervention interview response scores for each subcategory and totalled according to the two major categories were compared to determine if an increase in metacognitive knowledge was evident.

Writing. As with Englert, Raphael, Fear and Anderson's work, each composition was read and assigned a primary-trait score (Mullis, 1980). Four primary trait scores were rated for the explanation compositions. The papers were scored based on the presence of the following traits: a) clear introduction, b) presence of the required number of steps to develop a clear explanation, c) use of key words, d) consistent use of explanation structure (introduction, sequence of steps, conclusion). Each primary trait received from 0-3 points for a maximum of 12 points. For the compare/contrast papers, five primary trait scores were rated on a scale of 0-3 points for a maximum of 15 points. The traits evaluated were: 1) identification of the two things being compared and contrasted, 2) description of how the two things are alike, 3) description of how the two things are different, 4) use of key words, and 5) use of a compare/contrast organization consisting of introduction,

similarities, differences and conclusion. A detailed scoring guide for the explanation and compare/contrast paper is provided in Appendices D and E.

Metacognitive interview/writing rater reliability. As described, each measure was scored separately by the researcher and an independent rater. When the scores were not in close agreement, the raters discussed their reasons for assigning a certain score with the goal of reaching a consensus, if possible. Reliability was calculated by dividing the number of agreements by the sum of the number of agreements plus disagreements (Englert et al, 1991). The resultant reliability of scoring was 90 percent agreement.

Chapter 4

Analysis of Results and Discussion

Bearing the research hypotheses in mind, the analysis of the data is presented using a case study approach based on a comparison of the students' pre and postintervention writing samples, and the students' responses to the pre and postintervention metacognitive interviews. Throughout the CSIW intervention, student comments, participation, and ongoing writing were also documented to support the findings. All writing samples contain students' original spelling and mechanical errors. Pseudonyms are used in reporting the case study data. William and Matthew were selected as "average" students who were functioning within the National Curriculum levels expected for their chronological age and class placement. However, the classroom teacher felt that the two boys might benefit from the intervention program. Howard and Tony were selected by the classroom teacher as students who were functioning at least 1 Key Stage below expected levels.

Based upon previous research findings, it was

expected that initially, the more able (average) students in the study would demonstrate a greater awareness of the writing process, and knowledge of text structure in their compositions than the lower achieving students. As a result of the intervention, it was anticipated that the expository writing of all of the students would improve in terms of text organization. Further, the students would articulate a greater understanding of the writing process, and demonstrate increased metacognitive knowledge.

The Two "Average" Students

Case 1 - William

Although William is one of the youngest boys in the class, he is physically large for his age. The classroom teacher described William as developmentally young as all skills were at an early stage of development. While perceptive and strong in areas of mathematics and technology, there was a mismatch between William's aspirations and actual skill level. The classroom teacher stated that William had difficulty organizing his thoughts prior to writing and felt William found an experiential activity on which to base his writing

helpful. William has been involved in a handwriting program to assist with letter formation. William does not cross the letter "t" when writing and such an omission hampers the readability of his work.

Metacognitive interview. Based on William's responses to the preintervention metacognitive interview, William displayed a moderate understanding in all areas regarding the organization of writing, and in all but two areas of the writing process. Specifically, William's description of the steps involved in the writing process, and his ability to monitor the completeness or adequacy of a paper indicated a low level of knowledge. However, following the CSIW intervention, all responses were rated to be within the medium to high knowledge range. The four specific areas of improvement were:

1) Steps of the writing process. As indicated earlier, prior to the CSIW intervention, William stressed the type of information to include in writing reports rather than the processes involved when writing. His approach concentrated only on actually writing. In contrast, the postintervention response described the writing process as "brainstorm... organize them (ideas)...put them in sentences and then write it...edit

it by looking at the speech marks, exclamation marks...write it out again in your best". In contrast to preintervention awareness of writing as a process, William seemed to be more aware of prewriting activities. Further, William was developing a sense of editing and revision, although he tended to concentrate on the mechanics rather than the quality of ideas when editing.

2) Revising - William developed an awareness of the need to examine a composition at the idea level. The postintervention response referred to the need to look at each one of the ideas and "think if there needs to be any changes and then rewrite it".

3) Monitoring completeness or adequacy - Initially, William did not appear to have a strategy to monitor the adequacy or completeness of a paper. However the postintervention responses revealed that William realized that the writer had control over the decision regarding when the ideas have been exhausted.

4) Use of a text structure to monitor and revise text - Prior to the CSIW sessions, William was able to use a text structure to monitor the adequacy of a sample composition. But he required great support to in the use of text structure to offer additional details. However,

his responses to the postintervention interview described a process for revision. For example, William was able to suggest attributes, indicated that the details could be put into sentences and then grouped into paragraphs.

> Write about McDonalds, and then he can say what kinds of food...Put in another paragraph, that McDonalds has a party area,... then say how cheap they are...This is how the price is different for each place. The price is different for McDonalds and Burger King...

Comparison of pre and postintervention explanatory writing. The following paper was written as a follow up to a classroom activity. Throughout the school, the students have been encouraged to use the following format to record scientific activities:

What I tried to do

What I used

What I did

What problems I had

William used the classroom format for recording the information:

Preintervention Explanation Sample

making a mobile

what I tried to do

was to make a mobile out of oragmei

what I used

dowling 2 20cm 1 30cm and some string

what I did

I got the string and cut it to 20 cm and tied it on to the 30 cm then I cut some string to 7 cm twice the I atched the string to the 30 cm at the end of it then tight it to the 20 cm then I made some oragai modales that waight the same then I tight the string to the oragmai then to the 20 cm dowling on all the shaps

what problems I had

the problems was the oragmai shaps would not ballance sow we put plasterseen around the middle.

(February, 1993)

Even with the use of the classroom format, William had difficulty controlling the explanatory text structure. Although he had stated the purpose for writing in the title, and included some steps, only "then" was used as a signal word. An uninformed reader would have been challenged to make a mobile following William's

explanation as the paper lacked sufficient detail. Although the directions to the students directed them not to be concerned with spelling and mechanics, William's lack of punctuation and spelling hampered the readability of the paper.

In contrast, the following postintervention explanation sample included all of the characteristics of the explanation text structure but failed to convey all the details necessary.

Postintervention Explanation Sample

this is how you look after stickinsects.
first you buy some stick insets.
next you find some bramble because the stickinsects eat bramble.
then you shoud put the bramble in water. because you wood have to keep changing the leaves.
Finally you shoud clean them out every 1-2 weeks other wise the cage wood get dirty.

(June, 1993)

A clear statement regarding the purpose, and increased use of signal words such as "first", "next", "then", andugh"finally" assisted the reader in following his

explanation. Although William 's paper lacked clarity and details, he demonstrated a greater awareness of the audience needs. He did make an attempt to add supporting details, for example, the importance of using "bramble" and "keeping the bramble in water".

Comparison of pre and postintervention compare/contrast writing. The directions given to the students prior to the preintervention writing activity asked the students to compare and contrast two people, two places or 2 things. That is, to tell how the two things were the same and how they were different. William's composition reflected a possible misunderstanding of the task. As indicated in the following paper, William selected an unusual topic (fishing and adventure stories) to compare and contrast:

Preintervention Compare/Contrast Sample

things like

fishing & avencher storyes

things like

when you go fishing you sit down and wait for a bite and when you read you don't make a lot of noise because you have to be quite other wise you

wood friten the fish away. When you read avencher storyes you some times can't put the book down like fishing if you have got a bite.

how they are different

you don't uses bate in advencher storyes

(February, 1993)

Although a creative piece of writing, William appeared to have difficulty controlling the text structure as characteristics and details were omitted. For example, the topic was not clearly stated, and the reader needed to infer the author's purpose for writing. In addition, the word "like" appeared to be misused to denote a similarity between fishing and adventure stories. William also used subheadings, a technique similar to the scientific classroom format described earlier, to help him organize his writing by separating the similarities and differences between fishing and adventure stories.

Following the CSIW sessions, the postintervention compare/contrast writing sample showed improvement. It included some, but not all, of the characteristics of the compare/contrast text structure as illustrated in the following:

Postintervention Compare/Contrast Sample

I think moths and butterflys are difference and alike. the difference ways butterflys are turnal and moths are nocturnal. Butterflys fly in like the wave shape so when the birds try to eat them they don't get eaten. When moths fly at night because there wings are dark so when it is night thet are cameoflage.

The life cikle

The caterepilers hatchess and eats the leaf its on. The caterepilers gos on to another leaf and eats it.

every 8-9 weeks the caterpillere goes threw an instare and changes its camouflage.

The caterpluere goes threw 7 instares

The caterpluere spins a cackcokn for 6 weeks.

The butterfly coms out of the cockcokn.

Then the butterfly mats and the life sikle begns again.

(June, 1993)

Although William attempted to inform the reader of the topic in the first sentence, the word "difference" was used inappropriately. William attempted to share a great

deal of information, however he was unable to explain clearly the differences between butterflies and moths. Further, the reader needed to infer that the information about the life cycle was a detailed description of a similarity between the moth and butterfly. Clearly, William requires additional guided writing opportunities to use the compare/contrast text structure. He is unable to adhere to the compare/contrast organizational format when writing independently.

CSIW intervention. Throughout the CSIW sessions, William's contributions were limited. Although attentive, he was very quiet and rarely initiated comments. During the text analysis phase, William responded appropriately to questions, and made suggestions regarding the need for supporting details, signal words and the accuracy of information presented in the sample texts. At times he seemed to detach himself from the activities and avoided eye contact. In contrast, William was more vocal during active learning situations.

Initially, during the guided writing phase, William did not appear to appreciate the value of the Plan and Organize think sheets. Although he used the Plan sheet to generate ideas, he did not refer back to the Plan sheet

when organizing his thoughts. William may have stored his ideas in working memory and did not require the information from the Plan think sheet, or he may have regenerated his thoughts and ideas during the organizing stage of the prewriting activities. Further, when writing his first draft, William did not refer back to the information recorded on the Organize think sheet, although during an informal interview following the CSIW intervention William stated that he found the think sheets helpful because "they helped you to plan out what you knew and what you learned".

During editing, William accepted the suggestions made by his peers and revised his text accordingly. During the later guided writing sessions, William was beginning to look at attributes when using the compare/contrast text structure. However, William usually included only 1 or 2 details for each attribute. As a result, editing suggestions usually requested additional details to support his statements.

Summary. Based on the preceding analysis, William's responses to the metacognitive interview indicated that he has developed a good understanding of the writing process. While William did not appear to value the Plan

and Organize think sheets, he became more aware of prewriting activities. Continued peer conferencing may assist William in the development of editing and revising strategies.

William seems to have developed a good understanding of the explanation text structure and his explanatory writing appears to be moving toward the independent stage. In contrast, William requires additional guided writing opportunities to use the compare/contrast text structure. Consistent use of punctuation and capitalization, improved penmanship, and direct instruction in the use of homonyms and contractions, would improve the readability of his work.

In regards to the research hypotheses, William's increased understanding of the writing process and of the text structures supports the hypotheses. It appears that while further guidance is required, William benefits from the intervention.

Case 2 - Matthew

The classroom teacher described Matthew as a sensitive boy who was very inhibited about expressing his point of view. Matthew has few close friends and

minimizes interaction both within the classroom and on the playground. According to the classroom teacher, Matthew's writing is well sequenced and his thoughts are presented clearly. Following teacher-student writing conferences, Matthew would not edit his work independently. The teacher believed that editing may not be a priority for him. Matthew's letter formation was poor and as a result his writing was difficult to read.

Metacognitive interview. Based on his responses to the preintervention metacognitive interview, Matthew demonstrated a moderate understanding in all but three areas of the writing process, and in all but one area regarding the organization of writing. Specifically, Matthew displayed a low level of understanding regarding the steps of the writing process, the procedures for managing and presenting ideas, and the use of text structure to monitor and revise. In contrast, his response regarding revision was rated as a high knowledge response as Matthew was aware that the author has control over the writing and is finished when his ideas are exhausted. Little change was noted in the postintervention interview as the majority of responses to the postintervention interview continued to be rated

within the medium knowledge range with specific gains made in three areas:

1) Procedures for managing and presenting ideas - Prior to CSIW, Matthew recognized the need to group similar ideas together. However when asked to describe procedures for handling ideas that don't go together, he responded that if ideas did not naturally fit into a group then they should be altered to do so. However, the postintervention responses indicated that Matthew had developed an understanding that similar ideas could be grouped into paragraphs and separate ideas were grouped into different paragraphs.

2) Revising - In the second vignette, Matthew was asked to make suggestions to improve a paper written by the hypothetical student, Michael. Prior to the intervention, Matthew looked at the paper at an idea level although many of his suggestions were not appropriate. However after the CSIW intervention, Matthew was able to identify the confusion Michael was experiencing regarding the correct use of the text structure. Further Matthew made appropriate suggestions as indicated by the following:

Well I thought he was going to tell us how to make

biscuits by using flour and stuff, but he didn't. He told you how making biscuits was different from making cakes. He didn't tell you how to make them. Like in the second paragraph, he told you making biscuits and cakes are different. And then in the third paragraph, when he has a problem he sees his brother or mom. So he really hasn't told you how to make them. ... If he puts 'there are many steps to follow to make biscuits. Here are some of the problems or some of the things that are different' something like that to tell you that he isn't going to tell you how to make biscuits (the recipe).

3) Translate ideas into text following a plan and signal words - Prior to CSIW intervention, Matthew was able to generate sentences about a concept. However he was not able to provide a clear, concise statement. Postintervention responses indicated that Matthew had developed a better understanding of this variable. He was able to clearly state the traits being considered, for example," I am comparing England and France" and "I am going to compare what the weather is like in England and France". These statements are also evidence that Matthew had developed an increased awareness of audience.

The postintervention interview revealed that Matthew continued to have a low to moderate understanding regarding the steps of the writing process. Prior to intervention, Matthew described the writing process as a think and write model. Although, when prompted, Matthew did refer to ordering as a prewriting activity. Following the CSIW, Matthew continued to refer to the writing process as a think and write model, adding the need to edit by "looking for mistakes like full stops and capitals" before showing it to the teacher. Clearly, Matthew did not appreciate the complexity of the phases involved in the writing process.

In addition, Matthew's ability to monitor the completeness or adequacy of a composition continued to be rated as a low level response. Prior to intervention, Matthew recognized the author's control over completion. "When he can't think of any more ideas" was shared as the criteria to judge completion. However, Matthew also relied on external criteria such as the teacher's approval. In contrast, during the postintervention interview, Matthew reverted partially to the use of external criteria as he stated:

Before he starts, he should set himself a target,

like how far he wants to write and mark it on his paper. But if he has more ideas left (once he reaches the mark) then he should write then down. Then he's done extra.

Matthew appears to be developing an understanding that the writer has control over the amount of information he/she chooses to write even though he refers to the use of an arbitrary mark on a piece of paper as criteria for completion.

Comparison of the pre and postintervention explanatory text. During the preintervention writing task, Matthew appeared relaxed and confident. An analysis of the following sample indicated Matthew had difficulty controlling the explanation text structure:

Preintervention Explanation Sample

Making a mobile

Today we made a mobile. We used a pice of squre paper made into a frog a colour changer and two spanish boxes. we used three pices of doling rod one bit was 29 1/2 cm and two uther pics were 20 cm long. and we atached the three bit of doling together with three Bits of strings - one bit was

28 1/2 cm long and the other two bits were 7 cm Long.

What I did. I put four oragami models and some string. onto the oragami models and atached the four models to the string on to the wood. What happend all the model balnce the same

The problems we had. We could not get the models balnce so Howard said put a bit of patercenie in the middle of the model. so the string could go one way.

(February, 1993)

The title and opening sentence indicated the structure of the paper. However, Matthew did not use key words to signal the reader. Further, although the steps were presented sequentially, the composition lacked sufficient detail for the uninformed reader.

In contrast, the postintervention composition was an example of increased adherence to the explanation organization. The paper included all of the characteristics of the explanation text structure but Matthew failed to convey all the details necessary for a reader that is unfamiliar with stick insects.

Postintervention Explanation Sample

I am going to tell you how to look after stick insect. first you need a tank or a large pot, some food - prevet or bramble what ever your stick insect prefre.

Every week you have to boil some water and spray the water into the tank. after the water has cooled down to keep the stick insect at the same temperature.

You have to change the leaves every week. Why because after a while the leaves lose the goodness. Make sure there are no spiders on the leaves. the stick insect are fun to look after.

(June, 1993)

The first sentence was a clear statement regarding the purpose of the paper. Matthew used key words such as "first" and listed the items required early in the paper. The steps were presented sequentially and Matthew made an attempt to include some details and supporting statements, for example, "Why because after a while the leaves lose the goodness" was an attempt to explain the importance of changing the leaves on a regular basis. In

order for the paper to convey information clearly and in sufficient detail, additional details were required. A greater sense of audience was also indicated by the use of a concluding statement.

Comparison of pre and postintervention compare/contrast text. Matthew was instructed to write about 2 things he knew a great deal about such as two people, two places or two things. He was directed to discuss how the 2 things were the same and how they were different. Prior to writing, a small group discussion centred around the students' interests. Whereas the following sample is a creative piece of writing, the comparison of the two topics was not appropriate to the task:

Preintervention Compare/Contrast Sample

I like fishing and magic. Fishing and magic are the same because in magic you make things apperear and fishing you make fish appearear. There has been anonly one time I havet cault a fish.but the diffrense between fishing and magic is that you count make fish dissapear but in magic you can. I like fishing better than magic because magic get a

bit boring sometime and fishing s exsiting because you do not no what going to happend next. But in magic the people ho are wahcting don't no want going to happend next either.

(February, 1993)

The paper included some but not all of the characteristics of the compare/contrast text structure. The opening statement mentioned the two things being compared and contrasted, but the reader must infer the purpose of the paper. Matthew's description lacked sufficient detail to describe the comparisons and differences clearly to the reader. In addition, key words such as "same", "but", and "difference" were used only occasionally.

After the CSIW sessions, Matthew's writing sample displayed a greater understanding and control over the compare/contrast text structure.

Postintervention Compare/Contrast Sample

I am comparing and contrasting moths and buttflies. Moths are knockturnl. Butterflies fly dring the day. Moths fly at night.

Butterflys fly in a wave line. Moths fly striaght. Moths and butterflys both have about the same predetors birds. Moths and butteflys both have the same life cycle.

The life cycle is they hacth out of there eggs eat the leaves go throw 7 instars go in to a cocoon. Hacht out into a butterfly or a moth Then the female lays her egg and the cycle start again.

What is an instar? An instar is when the catipiller cracks its skin and crawls out of its skin. They are fun to look after Well that what I think anyway.

(June, 1993)

A clear statement was made regarding the two things being compared and contrasted. Matthew mentioned several differences between the butterfly and moth, although the paper lacked sufficient detail to describe the differences clearly to the reader. Matthew made an attempt to relate a detailed description of the life cycle. However this was the only comparison Matthew made between the butterfly and the moth. Matthew also used key words such as "comparing and contrasting", and "same".

The information in both postintervention samples was organized into paragraphs, and complete sentences were used with the correct punctuation and increased use of capitalization. Greater audience awareness was also evident as Matthew inserted concluding sentences.

CSIW intervention. During the text analysis phase of the intervention, Matthew was able to identify areas of the sample text that lacked clarity, and made appropriate suggestions. Further, during a group writing session, Matthew supplied clear, detailed sentences that included suitable signal words.

At the guided writing stage, Matthew often spent considerable time thinking about a good introduction that would interest his audience. When writing explanatory text, Matthew reread the steps carefully to ensure clarity for the reader. During the editing phase, Matthew usually was concerned with the mechanics of the paper. With direction, Matthew participated readily in the peer editing session, often making suggestions to the other group members and accepting their advice as well. During a self-editing activity, Matthew stated the steps needed improvement and his paper could be more interesting. He planned for those changes and also added supporting

details. A recurring theme during the editing stage was the lack of supporting detail. After reading many of Matthew's statements, the automatic reader response was "why?". During the guided writing sessions, Matthew became more aware of the need to include supporting details. There is evidence of an attempt to include additional details in the postintervention writing activities analyzed earlier.

Summary. Based on the previous analysis of Matthew's responses to the metacognitive interview, few changes were noted in Matthew's knowledge of the writing process and the organization of writing. However there was a discrepancy between Matthew's responses to some of the metacognitive interview questions and Matthew's contributions during the text analysis phase of the intervention, and his guided writing experiences. While, Matthew described the steps of the writing process as a think and write procedure, his writing experiences suggest Matthew has gained an awareness of the steps of the writing process. During an informal interview, Matthew stated that the think sheets were helpful because they "helped me to write down my ideas... and instead of having to keep them in my head..if I had them on a think

sheet and went out to play then I would have the bit of paper so I would remember my ideas". Matthew was able to plan, organize and write his first draft. However he required assistance with editing at the idea level and revising his work. Matthew is aware of the need to add supporting details when writing, however he still requires guidance and encouragement.

Although very knowledgeable about his topics, Matthew often could not sustain his thinking. As a result, the written work was not a true reflection of his knowledge of the topic. Matthew usually wrote in complete sentences and was beginning to organize his writing into paragraphs. He automatically inserted capitals and punctuation when writing. Matthew may benefit from direct instruction in the use of homonyms. His pre and postintervention writing samples contained several errors such as "no" for "know", "hear" for "here", and "were" for "where".

In regards to the research hypotheses, the findings do not support the hypothesis that initially, average students will articulate a greater understanding of the writing process, and demonstrate increased metacognitive knowledge. However, the hypothesis regarding the

improvement of expository writing in terms of text structure was supported. Matthew was able to adhere to the organization of the compare/contrast and explanation text structures. Matthew would benefit from additional guided writing opportunities in order to practice the strategies and achieve independence.

The Two "Learning Disabled" Students

Case 3 - Howard

The classroom teacher described Howard, one of the oldest boys in the class, as a very intelligent boy whose learning difficulties were due to low self-esteem and a poor attitude. Although very talented mathematically, Howard does not read accurately and only scans for meaning. According to the classroom teacher, Howard finds handwriting difficult, tends to rush through a writing task and becomes very impatient with himself regarding his performance.

Metacognitive interview. Prior to the CSIW intervention and based on his responses to the metacognitive writing interview, Howard demonstrated a moderate to high level of understanding in all but two areas of the writing process, specifically, steps of the

writing process and revising expository text, and in one area regarding the organization of writing (the use of text structure in monitoring and revising expository text). Responses to the postintervention interview indicated substantial gains in five areas. All post intervention interview responses were rated within the medium to high knowledge range. Specific areas of gain were:

1) Steps of the writing process - Prior to CSIW intervention, Howard's responses indicated that he possessed only a minimal sense of what is involved in the writing process. He felt the writing process consisted of generating ideas and writing them down. Based on his responses to the postintervention metacognitive interview, his understanding of the complexity of the writing process has improved immensely, especially his understanding of the prewriting stage. His final description of the steps of the writing process was "look at it (book) and write notes...Put them in order and boxes around them....like group the ideas, put them in order and start writing...show it to your teacher...". While Howard still seems dependent upon the judgement of an external critic, such as the teacher, probing revealed

that he understands the need for authors to edit and revise. He stated that the author needs to read his writing to "see if he likes it or wants to change it".

2) Monitoring completeness or adequacy - Initially Howard relied totally on the teacher for feedback regarding the adequacy of his writing. During the postintervention interview, Howard's responses suggested that he was beginning to take control over his writing. He indicated that he would show his writing to the classroom teacher only when his ideas were exhausted. His comment suggested that he was aware that the control for directing and regulating the writing process was at the author's disposal rather than that of the classroom teacher.

3) Revising - Perhaps one of the greatest metacognitive gains was in Howard's ability and confidence in revising writing. At first, Howard was able to recognize that in the second vignette - a compare/contrast example of Burger King and McDonalds the author cited only one reason to explain how the two restaurants were alike. However, he was able to give only minimal additional information about the two restaurants. Throughout the CSIW intervention, however, Howard began

to analyze information and the needs of readers, and was able to suggest additional information to clarify the writing. As a result, during the final interview, Howard was able to suggest much more information regarding McDonalds and Burger King, and recognized the need to group this information in terms of similarities and differences. For example, Howard stated, "He says McDonalds and Burger King are alike but then he doesn't say how they are alike, instead he talks about the playground. He should talk about how they are the same (before he starts talking about how they are different)".

4) Ability to use text structure to revise and judge adequacy of text - During the initial interview, Howard felt the third vignette was satisfactory and stated "I think he has all the information he could need". During the CSIW peer editing activities, Howard became more concerned with the ideas presented rather than just the writing conventions. Further, he was able to make appropriate suggestions to his peers. When presented with the third vignette once again, Howard was able to use the text structure to revise and judge the sample. He realized that the signal words were omitted and that the composition did not actually explain how to make

biscuits. When asked if the child was ready to turn his paper in, Howard replied:

> No,...he tells you what to do but he doesn't tell you how to make them.....(he should tell you) cause he said he was going to in the first sentence... Well, if he's going to tell you how to make biscuits, he should do it here (student points to the end of paragraph 2) and include the steps like 'first', 'second', 'third' and 'next'.

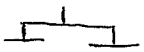
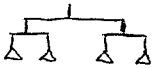
5) Procedures for managing and presenting ideas - When doing research, Howard was aware of the advantages of using a "mind map" to generate and organize ideas. Throughout CSIW sessions, Howard appeared to enjoy generating ideas, and improvements were noted in his ability to organize his writing by putting the information into categories. He also became aware of the need to state his purpose for writing clearly. There was evidence of this in the final interview when asked what the very first sentence of a report comparing and contrasting England and France should say, Howard clearly stated the purpose as "I am comparing and contrasting England and France".

Comparison of pre and postintervention explanatory text. The preintervention explanation writing sample was written as a follow up to a class science activity. Howard wrote the following explanation of how to make a mobile using the classroom format. He was instructed to write for a naive audience, and encouraged to give a clear, detailed explanation.

Preintervention Explanation Sample

making a mobile

Today we made a mobile we used a peas of wood 29.5cm long a tow peas 20 cm long

I tid tow peas of string on both ends of the 29.5cm peas of wood and tide the 20 cm peas of wood onto the string like this  then we all made 1 oragami shap each and we made them weigh all the same waight and thid them aron the end of the small peas of wood like this  . We had problems making them bales because we where put plastercine on the corner but I thought we shoud put it in the midll and I was right

(February, 1993)

An analysis of the preintervention writing sample revealed Howard included some, but not all, of the characteristics of the explanation text structure. The purpose was stated in the title and referred to in the opening sentence and some key words, such as "then" were used to assist the reader. Howard presented the steps sequentially, however a reader would probably have difficulty making a mobile based on Howard's directions as the explanation lacked detail and clarity. Although Howard was told not to be concerned with spelling, Howard often asked for spelling assistance regarding "plastercine", "thought", "mobile" and "attached". Poor use of punctuation, capitalization as well as spelling difficulties affected the readability of the sample.

Following the CSIW intervention, Howard was encouraged to write an explanation of how to care for caterpillars to support a classroom activity.

Postintervention Explanation Sample

if you want to lookafter caterler reed this pes of riting, you will need sume caterpller, jar, paint brush and sume levs. first you have to get a caterpillar on a leaf And put it in the jar make

sher you do not kush it. you must do this ones a day so the leaf will not get dehydrated and die. it will take about 5 week from egg to buterflie.

(June, 1993)

An analysis of postintervention writing sample indicated a definite improvement in the use of the explanation text structure. All characteristics of the text structure were evident. The purpose was clearly stated in the opening sentence. The materials were listed, the steps were presented sequentially. Although Howard still omitted some steps in caring for caterpillars, he attempted to provide supporting details. However Howard continued to use the key words associated with the writing of explanatory text sparingly.

Comparison of pre and postintervention compare/contrast text. Howard was encouraged to write a paper comparing and contrasting two things he knew a great deal about. All students were encouraged to tell how the 2 things were alike and how they were different. Howard chose to write about slalom and giant slalom:

Pre-Intervention Compare/Contrast Sample

Slarlm and GS are the same because there are

closed and opon gats a closd gat is when one gate is in the snow and the uter gat is 6m fer down the slop a opon gat is when one gat is stuk in the snow and the uther gat is put in about 3m acros the slop they are diffent because in the slarlm there are 65 to 70 gat but in a GS there 45 to 55 gat thay a diffent because thay is about 20m inbtwin the gat in the GS but about 7M inbtwin the gat in the slarlm in the GS you have long skis then in slarlm

(February, 1993)

An analysis of the preintervention sample, indicated Howard included some, but not all of the characteristics of the compare and contrast text structure. The opening sentence referred to the two types of skiing but the reader did not get a clear sense of the text structure being used. Key words, such as "same", "different", and "but" were used sparingly. Although very knowledgeable about his topic, Howard was unable to sustain thinking. His writing lacked sufficient detail for the uninformed reader as he only briefly described how the 2 types of skiing were alike and different.

Following the CSIW intervention, Howard was asked to

write a compare and contrast paper describing how moths and butterflies are alike and different. This topic was selected to support the classroom theme of butterflies and moths.

Post-Intervention Compare/Contrast Sample

moths and butterflies a different because moths are nocturnal. Moths are nocturnal because moths flie in strate line. If there flies in the day theye will get eaten eserl because the birds can ges ware the moths is going. to. But a buterflies flies up, down, Left and Right so the bird carnt ges were the butterflies is going to go. the Life sitll of a moths is. One. The egg are fertised and ready to hatch any minuiet. two. Half of the egg a have hatched or are hatching this stage they are very hungry and need fresh leves. Three. The calpler is at least one week old and is caling very qiuckle. The technique is quite simple the clpler users it's nect to go up and dowe the edge of the leaf. four. The catilpler goes though about six instar a instar is when a calupler change colour and size. five. Inside the christast the

catipler maker it final change to a moths this is called puptoa. six The moths lays her eggs.

(June, 1993)

Howard had more difficulty controlling the compare and contrast text structure than explanatory writing. Once again the 2 things being compared were only referred to in the first sentence. There was not a clear statement regarding the purpose of the composition. While he gave a brief description of some of the differences between moths and butterflies using key words such as "difference" and "but" occasionally, the reader needed to infer that the detailed description of the insects' life cycles was an example of a similarity. This description may be an example of the knowledge telling strategy referred to by Bereiter and Scardamalia (1986).

Overall, there appeared to be more of an attempt to write in complete sentences and use punctuation. For example, when writing the paper, Howard paused, read his work and commented that he had not used periods in his writing to that point (the first seven lines). He immediately reread his work and inserted periods. Howard often asked for the correct spellings while composing.

Hence words such as "caterpillar", "dehydrated", and "nocturnal" were spelled correctly at some points. Further, Howard was unsure as to the correct use of homonyms such as "reed" for "read", "ones" for "once", "peas" for "piece". Although lack of capitalization, and poor spelling still hindered readability, Howard appeared to be taking more control over his writing and was interested in the readability aspect of the work.

CSIW intervention. During the initial sessions, Howard was able to analyze text samples and make appropriate suggestions regarding reader needs and additions to improve the text. Further Howard was able to identify the characteristics of both compare/contrast and explanation text structures. During the initial guided writing sessions, Howard winced whenever he was told he would be involved in a writing activity and initially often chose a very simple topic on which to base his writing. However throughout the sessions, it was evident that Howard became more comfortable and involved with his writing. During guided writing activities, Howard was concerned with both sequencing the steps in his explanatory writing and in the clarity of his instructions. For instance, when writing an explanation

about how to make a pop-up, Howard made several attempts, organizing his paper to ensure the clarity of the steps to follow in making a pop-up. When Howard used the think sheet to plan and organize the steps to make a pop-up, the drafting and changes made on the Organize Think Sheet are an example of his awareness and effort to be clear and provide detailed instructions for the reader. All changes to the text were made by Howard. A growing awareness of audience was evident when he asked the examiner to try to follow his steps to ensure clarity.

Organizing Think Sheet for Writing an Explanation

Introduction: do you want to make popup, if so ried this

Materials: thies are the materials you nead

card, pensll, siser and rooler

First, you have to fold your card in half

Next, secndl you dror a line from the fold middl of the fold about haft whay hafstll acrsse the paper card

Third, 3 cm from the line in the middl down dror from then to the end of the line in the middl

Then, 5 cm from the line in the middl up

Finally, Next you have to cut the line in the middl from the fold and open it

Third, 3 cm down from the line in the middl at the fold drow a diagn line to the end of the line in the middl

Then 5 cm up from the line in the middl at the fold drow a dign line to the end of the line in the middl

Finally, fold twors you on the lines and the uter side to make a mout shap.

(March 16, 1993)

Final Draft

Do you want to make a popup if so reid this work. These are the materials you will need a sheet of card, pencl or pen, sissers and a ruler.

First you have to fold your card in half

Second you draw a line from the middle of the fold about half whay horizontally across the card

third you go 3 cm from the line in the middle at the fold and draw a diagonal line to the end pof the line in the middle.

Then you go up 5 cm from the line in the middle at

the fold and draw a diagonal line to the end of the end of the line in the middle.

Next you have to cut the line in the middle from the fold and open it.

Finally fold towards you on the lines and on the other side to make a mouth shape.

(March 25, 1993)

At the guided writing level, Howard was able to provide a detailed, cohesive description of the similarities and differences between two sports - rugby and skiing. This sample is also supports Howard's ability to categorize the attributes and supporting details, as he independently organized this information into separate paragraphs.

rugby and skiing

I am comparing and contrasting skiing and rugby. I think that skiing is better than rugby. they are a like in training because they both need lots of space. they also alike because people of all ages can train. They are different because in skiing you need a ski slope but in rugby you need a pitch.

Rugby is a group sport but skiing is individual sport the good thing with skiing is you can train all year around. In Rugby you can only train half the year.

For safety skiing is probably safer then rugby because skiing has a first aid kit or a ambulance at every race. But in rugby it has only got bucket of warter. In rugby and skiing they both were pads for protection.

Rugby might cost less but skiing is better you can ski for an hour for £3.50 or for two hour for £4.50 including ski,bots and poles. you can have a private lessen for two hour at £24.00 for a person, £28.00 for two people, £32.00 for three people £36.00 for four people . for a normal lessen it is £6.00 for children and £8.00 for adults for a 1.5 hour lessen.

what do you think is better skiing or rugby?

(May 18, 1993)

He also recognized the need to capture the reader's interest in the opening sentence and the need of a strong concluding sentence to bring the composition to a close.

Summary. In conclusion, as shown in the forgoing analyses, Howard developed growing metacognitive awareness and control over the writing process. He seems to have very good ideas, however the mechanical aspects of composing seem to inhibit the flow of his writing and prevent him from sustaining thought. Based on the metacognitive interview, it appeared Howard had a good understanding of the writing process and how to organize compositions. Howard appears to be at the guided writing stage. Although he has not internalized all of the characteristics of the explanation and compare/contrast text structures, at the guided writing stage, Howard was able to generate, organize and draft his ideas incorporating signal words and statements regarding the purpose of his writing. While very knowledgeable, Howard often included a minimum of information and detail. Before moving to the independent writing stage with confidence, he required further assistance organizing information when writing compare/contrast compositions and needs encouragement to include supporting details for the reader in all areas of writing. In the future, Howard may benefit from direct instruction in spelling, and the correct use of homonyms.

In an informal interview at the end of the program, Howard indicated that he felt he had "gotten better at writing explanations by putting signal words in". He felt the think sheets were helpful and his writing, especially explanatory writing "has gotten alot better". Therefore, although the CSIW program may not have been sustained long enough to develop independent competence in writing using these text structures, an awareness of the characteristics and increased self-confidence resulted.

In regards to the research hypotheses, initially Howard's awareness of the writing process and knowledge of text structure in his compositions were rated as high as one of the average students. Therefore the first hypothesis was not supported. Further, in regards to the second hypothesis, following the CSIW intervention Howard's expository writing improved only in terms of the explanation text structure. The postintervention compare/contrast composition was rated lower than the preintervention sample. Finally, the findings support the hypothesis that the students would demonstrate a greater understanding of the writing process and increased metacognitive knowledge following intervention.

Case 4 - Tony

The classroom teacher has cited several undetected ear infections at an early age as the possible cause of Tony's early reading and spelling difficulties. In addition, gross and fine motor skills have been slow to develop and Tony finds handwriting demanding. Although reading levels have improved, Tony continues to have difficulty in school. According to the classroom teacher, Tony lacks confidence, and confidence-building has been a focus both at home and at school. A psychologist has been assessing Tony to support an educational statement that will provide additional funding and educational assistance for Tony's learning difficulties.

Metacognitive interview. Throughout the metacognitive interview, Tony appeared to be uncomfortable giving advice to the hypothetical students as he often responded that he did not know what they should do. As a result the questions were rephrased to ask Tony what he would do in the situations. Prior to the CSIW sessions, Tony's responses to the metacognitive interview indicated a low level of understanding in all but three areas of the writing process and in three of the five areas regarding the organization of writing. The

responses to the postintervention interview indicated gains were made in all areas of the writing process as all responses were rated within the medium to high knowledge range. However, Tony's knowledge of the organization of writing continued to be in the low to medium knowledge range with the exception of one area. Promising gains were made regarding organizing strategies as Tony's responses were rated as a high level of understanding. Specific improvements were noted in the following areas:

1) Steps of the writing process and organizing strategies - Prior to the intervention, Tony demonstrated a minimal understanding of the steps of the writing process and strategies he could use to organize his writing. His response was "I think of a quick paragraph, and once I've done that paragraph I keep carrying on". However after several guided writing experiences, Tony demonstrated a greater understanding of the complexity of the writing process, although Tony still considered the editing process as examining the text for mechanical features. Tony was able to share an organizational strategy as he described the following:

First he could do, like a mind map, or brainstorm.

And then he puts his ideas in order or he can do it in sections.... then he writes it out. Anything he has left out, he can try to put in.... Edit it. Check for full stops, spelling and capital letters.

2) Monitoring the completeness or adequacy of the paper - Initially, when asked how to judge when a paper is finished, Tony cited fatigue as the controlling factor when he stated " when I start to feel, like... really shattered and my arm is really hurting and ...feels like it's going to drop off...I try to finish up as quick as I can". However, the postinterview responses indicated Tony appeared to have acquired a greater sense of the author's control over regulating and directing writing as the response was "When he can't write anymore, cause he's used all his ideas".

3) Use of text structure to monitor and revise text - In the second vignette, Tony was asked to judge whether the hypothetical student, Ben, had compared and contrasted McDonalds and Burger King. Although Tony was able to provide two appropriate suggestions to complete the paper, Tony's responses focused on the accuracy of the information as well as extraneous criteria such as "It's only 4 1/2 lines, you don't expect him to do that

much ... I don't think you go outside to Burger King to pick flowers on the playground." Englert and Raphael state that judging a paper on its factual merits is consistent with the immature composing strategies described by Bereiter and Scardamalia (1986). Therefore Tony appeared to have a limited understanding of the organizational properties and requirements of expository text.

However, the postintervention response to the second vignette indicated Tony was able to use his knowledge of text structure to judge completeness. He was able to add suitable information to the piece of writing, although the organization of the information was inadequate, as indicated by the following:

> He has to do alot more. He's only compared and contrasted one thing...he should put some ways Mcdonalds and Burger King are alike and different...Like one does a Big Mac and one doesn't ...They both do burgers, McDonalds has more dressing and Burger King has more ice in the coke. They both have play areas.

4) Procedures for managing and presenting ideas - Improvements were noted in this area, as Tony's responses

recognized the importance of ordering ideas and to a lesser extent, grouping ideas prior to writing. He also was aware that separate ideas require separate paragraphs.

Pre and postintervention interview responses indicated Tony continued to have difficulty categorizing ideas into sets of information and providing conceptual labels for these groupted ideas. The interview questions asked Tony to group ideas he had generated previously about a wild animal, and then think of a word or a phrase to identify the group. On both occasions, Tony was unable to label the ideas in a well-defined way. Learning disabled students seem to possess a limited knowledge of the broad conceptual categories that might facilitate generation and categorization (Englert & Raphael, 1988).

Comparison of pre and postintervention explanatory text. Tony used the classroom format described earlier to structure the preintervention explanation composition. During the writing activity, Tony appeared unsure of himself, often glancing at the other student's writing. After writing the first four lines, he reread his work and requested spelling assistance.

Preintervention Explanation Sample

Makeing a Mobile

Today we made a mobile. What I did. I did a 20 length of dowling each side of a 30 length held by string the string 7 each side and then we had to cout slist in the wood so the string could go throw.

what I used

I used to 20 length of dowling and one 30 length of dowling and some oragami shapes and they all had to way the same.

What I tried to do

I tried to make all the oragami shaps the same it was not easy because I had to stike bists of palstercini evrey

What happened problems

the prolems were waying them out. hears a diagrm.

(February, 1993)

Tony's preintervention writing lacked overall organization as some details and characteristics of the explanation text structure were omitted. He made use of the classroom format to structure his writing, however the various categories were sequenced incorrectly. The

purpose was stated in the title and the first sentence. However, Tony listed some, not all, of the materials required and used "then" as a signal word. An uninformed reader would have great difficulty following Tony's explanation as many steps and supporting details were omitted. Numerous run on sentences, poor use of punctuation, spelling difficulties and word omissions hampered the readability of the composition.

Following the CSIW sessions, Tony wrote an explanation about how to care for caterpillars to document a classroom activity.

Postintervention Explanation Sample

how to Cere for a callipller

I am going to tell you how to look after cp. First you need to put the egg in a clear plastit fillm cag When the eggs start to have hatched you uses a paint brush to move them around. Add brush levs every day. A cleen gar with dropings cleened out. and When they get biger you need to make a biger tub. Finally it would take 2 monthes befor they make the crisles.

(June, 1993)

The postintervention writing sample displayed a greater control over the explanation text structure and increased organization. The purpose was clearly stated in the title and introductory sentence, and Tony used signal words such as "first" and "finally". However, there was a lack of sensitivity to the needs of the audience. Although the information was sequenced, the reader still needed to infer the required materials, and some of the steps and supporting details were omitted. Tony attempted to write in complete sentences, and used punctuation and capitalization to a greater extent.

Comparison of pre and postintervention compare/contrast text. Tony's interest in dinosaurs was the stimulus for the compare and contrast composition. As stated earlier, the students were encouraged to describe how two things were alike and how they were different.

Preintervention Compare/Contrast Sample

Stegasaurus and Triceratops

Stegasaurus and Triceratops are bouth plant eates but only one cills thats the Tri but it dus not eat meat is gust to difend its self

the Stegasaurus also defends and it dus not cill

Steg lives in forists and Tri lives in a cave the Steg has plats on its back and we dont know what ther for some think its defence and some think its to help the blood go round and Tri has horns on his for head

(February, 1993)

At the preintervention stage, Tony had difficulty controlling the compare/contrast text structure and the paper lacked overall organization. Although the title mentioned the two dinosaurs, the purpose of the composition was not clearly stated. One signal word, "both" was used. Although Tony gave a brief description of some of the differences between the two dinosaurs, only one similarity was presented. Tony started each sentence on a new line, and did not use punctuation or capitalization to assist the reader.

In contrast, the composition written after the CSIW sessions showed improved organization, as the following sample displayed some, but not all, of the characteristics of the compare/contrast text structure.

Postintervention Compare/Contrast Sample

I am comparing and contrasting moths and

butterflies. Butterflies fly in the day and moths fly at night. Moths are more camouflaged to trees and butterflies are more camouflaged to plants. butterflies fly all over the place and moths fly straight. But they are nocturnal and sparrows aren't butterflies aren't as well they fly all over the place. when thet are a catepiller they go through 7 instars. Instars are when they crack Their skin and they wriggle out of the skin and that is an Instar.

(June, 1993)

The purpose was clearly stated in the opening sentence and Tony used signal words such as "comparing and contrasting", "both" and "but". While Tony attempted to give a description of the differences between moths and butterflies, the reader needed to infer that the information about the instar was indicative of a similarity between the two insects. Tony also wrote in complete sentences and used capitalization and punctuation to a greater extent.

In summary, an analysis of the postintervention writing samples indicated increased control over the text structures. In both cases, there was a greater degree of

organization, as Tony provided a clearly stated purpose and used signal words. Although Tony was very knowledgeable about his topics, the reader needed to infer as his writing was brief and did not contain all the information that was available to him.

CSIW intervention. During the text analysis sessions, Tony was able to evaluate the sample text in terms of clarity, interest and text structure characteristics. He identified signal words, topic sentences and the importance of capturing the reader's interest in the sample text and was able to incorporate these areas into his writing as indicated in the forthcoming example of explanatory writing. However when planning and organizing his own writing, Tony had more difficulty. For example, he required a great deal of assistance organizing the sequence of steps required to make a pop-up. Further, when the explanation paper was edited by his peers, Tony could not accept that his peers had difficulty following the sequence of the steps as he felt the paper was clear.

Sample of Explanatory Writing - Guided Writing Phase

do you want to konw how to Make a pop up? if

you do then I will show you

Thees are the materials you need scissors and a rectangle pice of card.

First, you fold the piece of card in Half and cut any shape you want.

Next, I used jagged lines but do not join the cuts keep the little slits separate open up then push cuts away from fold

(March, 1993)

Tony's difficulty with organizing and categorizing information was also evident during the guided writing phase using the compare and contrast text structure. While planning a paper about skiing and rugby, Tony required assistance to generate the various attributes and supporting details. The following samples of Tony's Organize Think Sheet and his first draft reveal the draft consisted of an arbitrary listing of the ideas from the Organize Think Sheet rather than using the organization of ideas as a point from which to base the writing. As a result the writing lacked cohesiveness and supporting details.

Compare/Contrast Organization Think Sheet

What is being compared?

rugby skiing

On what?

training

Alike?	Different?
need a large area	rugby - flat skiing - hilly
	group individual
	all winter all year

On What?

safety

Alike?	Different?
equipment for	rugby is safer

On What?

cost

Alike?	Different?
both cost money	ski- competitive £2800.00
	rec 3.50/hour
	rugby - £10.00

(May, 1993)

Sample of First Draft

I think that rugby is better than skiing .

If you are going to take up a sport it should be rugby. It is a different sport than skiing and it

is cheaper. and its more aggressive you can almost play it anywhere. With skiing you have to play on a hilly area. But they both need a very large area. Plus rugby is a group sport and skiing is an individual sport. But rugby is a seasonal game.

Let me tell you about safety. In rugby you do not have to wear as much safety gear as you do in skiing. Rugby is roughly £10 and skiing is £2800 for a competition. And rugby you have to wear a uniform. I have played rugby for 2 months and it is my kind of sport.

(June, 1993)

Summary. Tony's participation and contributions throughout the intervention appeared to have earned the respect of the other group members. Tony was viewed by his peers as having good ideas. At times Tony displayed some leadership during discussions and group writing activities. Following an observation of a guided writing session, the psychologist who had been working with Tony stated she was pleasantly surprised at Tony's degree of involvement and participation.

The preceding analysis of the writing samples and

responses to the metacognitive interview suggest Tony has developed an increased understanding of the complexity and organization of the writing process, and an awareness of the characteristics of the explanatory and compare/contrast text structures. Tony's writing does not reflect his scope of knowledge as his compositions tend to be brief and include minimal information. Tony requires encouragement to share his knowledge with his audience and include additional details for the uninformed reader. Further, Tony requires the strategies to help him organize his information. He tends to use random details rather than using an organizational structure on which to base his information. Therefore, in order to internalize and incorporate the text structure elements into his writing independently, he requires continued assistance, especially with the organization of ideas at the guided writing stage.

In regards to the research hypotheses, the findings reported earlier support all of the hypotheses. Specifically, the average students did demonstrate a greater awareness of the writing process, and knowledge of the text structure in their compositions than the lower achieving student (Tony). As a result of the

intervention, Tony's expository writing improved in terms of text organization. Finally, following the intervention Tony did demonstrate a greater understanding of the writing process and increased metacognitive knowledge.

Comparison between the average and below average students

The pre and postintervention performances provided a basis of comparison between the two groups of students.

Metacognitive interview. Overall, all the students made gains in the metacognitive interview as shown in Table 2 on the following page. The greatest increase appeared to be in students' understanding of the steps of the writing process. Based on their responses to the postintervention interview, all of the boys, with the exception of Matthew, developed a greater awareness of the steps of the writing process and in their ability to monitor completeness or adequacy of a paper.

Table 2

Pre and Postintervention Scores and Degree of Change as Shown by the Metacognitive Interview

Subject	Pre-	Post-	Change
	Steps in the Writing Process		
William (A)	15	20.5	+5.5
Matthew (A)	14.5	17.5	+3
Howard (LD)	15	20.5	+5.5
Tony (LD)	11.5	19	+7.5
	Organization		
William (A)	10	10.5	+.5
Matthew (A)	9.5	11	+2.5
Howard (LD)	10.5	13	+2.5
Tony (LD)	7	12	+5

Steps in the Writing Process-maximum number of points 24

Organization - maximum number of points 15

Initially all of the students were rated as having a low

level of knowledge in these areas because external criteria were cited to assess adequacy or completion, whereas after the CSIW intervention, William, Howard, and Tony focused on the writer's internal resources and the extent to which the writer's resources had been exhausted. Only Matthew continued to refer to external or irrelevant criteria.

Further, three of the students, with the exception of William, appeared to have increased their repertoire for managing and presenting ideas. Following the CSIW intervention, all of the students were able to use a text structure to monitor and revise a text. As indicated in Table 2, the learning disabled students showed a greater number of pre-post gains than the average students. In fact, Howard and Tony's postintervention response scores regarding the organization of writing, were higher than those attained by the average group. Although Tony's preintervention responses were considerably lower than the other students, a comparison between the pre and postintervention responses revealed that Tony made the greatest gains in metacognitive knowledge.

Comparison of the pre and postintervention writing samples.

All students made gains in explanatory writing performance as indicated in Table 3.

Table 3

Pre- and Post-Intervention Writing Sample Scores

	pre-	post-	pre-	post-
William	6/12	10/12	6/15	5.5/15
Matthew	3.5/12	9/12	8.5/15	11/15
Howard	7.5/12	9/12	9/15	7/15
Tony	2.5/12	9/12	5/15	9/15

Explanation = total possible points 12

Compare/Contrast = total possible points 15

William, Matthew and Tony demonstrated an increasing awareness of the characteristics of the explanation text structure as improvements were noted in all areas. All preintervention writing samples required the reader to draw several inferences. Following CSIW, all the students introduced their topic clearly in the opening sentence and attempts were made to engage the reader immediately. The postintervention explanatory writing samples showed

an increase in organization, signal words and an attempt to include additional details.

However, the analysis of the postintervention compare/contrast samples revealed Tony and Matthew made gains in their ability to write using this text structure. Both students clearly introduced their topics and their papers showed evidence of increased organization. However, Howard and William's postintervention compare/contrast samples were rated lower than preintervention samples.

Summary

The results and analyses suggest that CSIW did successfully improve the students' metacognitive knowledge and explanatory writing performance. Prior to CSIW, all students displayed difficulty generating content, framing text and planning their writing. Postintervention writing samples showed greater awareness of the organization of the text structures being considered. Generally the writing was more complete and "reader friendly".

The compare/contrast text structure proved to be more difficult. Although all of the postintervention

papers read much better, only two of the papers were rated higher after the intervention. In most cases, the writing still lacked sufficient detail for the uninformed reader. While the compare/contrast papers written during the guided writing phase exhibited all of the necessary characteristics and organization, additional writing experiences may be necessary for the students to internalize the strategies and develop the confidence to achieve an independent writing level.

Chapter 5

Summary and Conclusions

The purpose of this study was to determine what knowledge low-achieving and average English junior school children have about expository text structures and the writing process, and whether an intervention strategy (CSIW) would increase the metacognitive knowledge of these children. It was also of interest to determine whether strategies for writing explanatory and compare/contrast compositions which were emphasized in the instructional intervention, would be effective as evidenced by the quality of the postintervention written products.

Four students, 2 average and 2 low-achieving, participated in a five month intervention program, Cognitive Strategy Instruction in Writing (CSIW), designed by Englert and Raphael (1989), to teach cognitive strategies in writing using the explanation and compare/contrast text structures. The intervention consisted of four phases; text analysis, modelling of the

text structure, guided writing and an independent writing phase. CSIW focused on the social aspects of writing including the importance of audience in planning, organizing and editing and the role of text structure. Think sheets were used to parallel the organizational and thinking of mature, competent writers.

Pre and postintervention writing samples, and pre and postintervention responses to a metacognitive interview were rated by the investigator and an independent rater trained by the investigator. These findings, as well as writing samples and student participation documented during the intervention, were used as the basis for the analysis.

The analysis of the preintervention metacognitive interview and writing samples supported past work by Raphael and Englert (1990). They found that the expository writing of upper elementary school students, learning disabled students and secondary students have a) poor organizational skills; b) insensitivity to audience needs; c) inability to sustain thinking about a topic; d) failure to provide a purpose; e) inability to see themselves as informants with information to share; and f) poor use of conventions of print.

The postintervention results suggest that all of the students showed an increase in their metacognitive awareness regarding steps of the writing process and the organization of writing. An important finding of this study which was commensurate with the findings of Raphael and Englert (1990) was the success of the intervention in reducing the difference between low-achieving and average students' knowledge about writing.

An improvement was noted in the students' explanatory writing, and to a lesser extent, their use of the compare/contrast text structure. Further, their writing showed evidence of an increasing awareness of audience and the use of text structure features. This finding has supported previous research that found experimental students produced significantly better organized compositions than control students, and that the writing of students in the treatment group reflected an increased awareness of their audience and use of text structure features (Englert et al,1991). The students developed a growing awareness of the needs of the reader. This development may be due to the text analysis and group writing sessions that provided opportunities for the students to take the reader's perspective and

consider measures that would make the writing more interesting and "reader friendly".

The CSIW intervention did help the students to execute the strategies necessary for expository writing. Although some of the students may not have been aware of their value, the think sheets were useful in making the strategies of the writing process more visible. Students who have not had a great deal of experience with extended writing may not have been aware of strategies to enhance prewriting, organizing, drafting and editing. Not only was an increase in strategy use noted, but the students' ability to use the language associated with the writing process increased. Throughout the CSIW sessions, the students began to incorporate the terminology, such as signal words, into their dialogue. In this way they were better able to communicate their understanding of the process and also better able to identify and communicate misunderstanding resulting from poorly written text. Perhaps this increased mastery over the language was one of the factors reflected in the gains made in the students metacognitive knowledge in that the students were better equipped to explain the writing process and their understanding of the organization of writing.

Whereas all students demonstrated an increase in metacognitive knowledge, one average and one learning disabled student did not exhibit an increase in their ability to write compare/contrast compositions. Englert, Raphael and Anderson (1992) suggest knowledge about the processes and strategies may change before the student can use the newly acquired knowledge on performance tasks. Therefore an increase in metacognitive knowledge may not be reflected immediately in improvement in writing performance.

This study also confirmed the students lacked the ability to sustain thought. Their compositions did not reflect their knowledge of the topics. All of the subjects were able to tell far more about their topic than was represented in their written text. This inability to sustain thought may be due to motor difficulty or the students' difficulty in accessing and selecting relevant information about the topic. Bereiter and Scardamalia (1982) suggest that the ability to sustain thought and language in the absence of a communication partner is one of the critical dimensions that distinguishes composition from other language arts. It is important that the writer see himself or herself as

an informant to others in order to be able to anticipate the questions a reader may have, and elaborate on the topic. Therefore the student must have the opportunity to write for a variety of audiences. Englert et al (1988) suggest that if students write for just adults and teachers, they learn to mention only ideas and omit the details because they assume that the adult audience already have the knowledge and can infer the implied information.

Limitations

It is important to consider the limitations of this study. As the population of the study consisted of 4 students in a local county school in England, the conclusions drawn can refer only to this study. Generalizability beyond these subjects should not be made. In addition, there was no control over the writing experiences outside these CSIW sessions which could have produced a practice effect. Tape recording the interviews may have inhibited the quantity or the quality of the subjects' participation. The metacognitive questionnaire provided a rather narrow superficial examination of the students' knowledge and because the same metacognitive

interview was administered after the intervention, there may have been a practice effect.

Finally, the CSIW training period may have been too short to allow for the students to internalize the writing strategies. Prior studies implementing CSIW instruction conducted a longer intervention period of seven months (Englert, Raphael & Anderson, 1992). Compositions written during the later guided writing phase contained all the text structure elements as well as organization and increasing awareness of audience. Additional time would have allowed for further writing opportunities so that the students could achieve a level of expertise whereby they would be able independently to activate and apply the strategies to compose well-formed pieces of writing.

Instructional Implications

The results of this investigation and other studies examining the effectiveness of CSIW and other writing strategy programs, support the necessity to assist students in the development of processes central to effective writing. These results support Graham and Harris's (1988) suggestion to divide the composition

process into a series of relatively discrete stages and teach appropriate task-specific and metacognitive strategies in order to help students develop explicit knowledge about the characteristics of good writing. In addition, classroom teachers need to create situations in which children describe writing strategies, similar to those used in the metacognitive interview. In this way, children learn to analyze text and have the opportunity to use the language associated with the writing process.

In conclusion, the results of this study support the findings of Raphael and Englert (1990), although the present study was shorter in duration. Specifically, Raphael and Englert found as a result of the CSIW intervention, the expository writing contained an improved introduction, effective use of organizational strategies, text signals and key concepts in separate paragraphs. Examination of the postintervention papers in this study showed evidence of the these elements. Based on the preceding findings, it appears that CSIW may be an effective program of strategy instruction for all students to assist them in the writing of expository text.

Implications for Further Research

Future research needs to be conducted to evaluate the effectiveness of CSIW within the classroom setting. The present study used a withdrawal approach. Due to the limited space at the research site, the intervention sessions were often interrupted and the students were distracted by activity in the halls and library area. This study suggested that the "talk" of students about writing led to greater knowledge about writing. Research needs to be conducted in the classroom to more directly assess the relationship between student talk, classroom talk and writing performance. In addition, teacher dialogue and input regarding the quality of student talk and writing performance can also be investigated.

References

Bayer, A.S. (1990). Collaborative-Apprenticeship learning. Toronto: Mayfield Publishing Company.

Beed, P.L., Hawkins, E.M., & Roller, C.M. (1991). Moving learners toward independence: The power of scaffolded instruction. The Reading Teacher, 44 (9), 648-655.

Bereiter, C., & Scardamalia, M. (1982). From conversation to composition: The role of instruction in a developmental process. In R. Glaser (Ed.) Advances in instructional psychology Vol.2.pp.1-64). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Brown, A.L. (1978). Knowing when, where and how to remember: A problem of metacognition. In R. Glaser (Ed.), Advances in instructional psychology Vol. 1 (pp.77-165). Hillsdale, NJ: Lawrence Erlbaum and Associates.

Cazden, C. (1988). Classroom discourse: The language of teaching and learning. Portsmouth, NH: Heinemann.

Cox, B., Shanahan, T., & Tinmann, M. (1991). Children's knowledge of organization, cohesion, and voice in written exposition. Research in the Teaching of

English, 25 (2), 179-208.

Daiute, C. (1985). Do writers talk to themselves? In S. Freedman (Ed.), The acquisition of written language. (pp.133-159). Norwood, NJ: Ablex.

Dyson, A. Haas, Freedman, & S. Warshauer (1991). Writing. In J. Flood, J. Jensen et al (Eds.) Handbook of research on teaching the English language arts. (pp.754-774). New York: Macmillan.

Englert, C.S., & Raphael, T.E. (1988). Constructing well-formed prose: process, structure, and metacognitive knowledge. Exceptional Children, 54 (6), 513-520.

Englert, C.S., & Raphael, T.E. (1989). Developing successful writers through cognitive strategy instruction. In J. Brophy (Ed.), Advances in research on teaching. (pp.105-152). London:JAI Press.

Englert, C.S., Raphael, T.E., & Anderson, L.M. (1992). Socially mediated instruction: Improving students' knowledge and talk about writing. The Elementary School Journal, 92 (4), 411-449.

Englert, C.S., Raphael, T.E., Anderson, L.M., Anthony, H.M., & Stevens, D.D. (1991). Making strategies and self-talk visible: Writing instruction in regular

and special education classrooms. American Educational Research Journal, 28 (2), 337-372.

Englert, C.S.,Raphael, T.E., Fear, K.L., & Anderson, L.M.(1988). Students' metacognitive knowledge about writing informational texts. Learning Disability Quarterly, 11 (1), 18-46.

Espin, C.A., & Sindelar, P. T. (1988). Auditory feedback and writing: Learning disabled and nondisabled students. Exceptional Children, 55 (1), 45-51.

Flavell, J.H. (1976). Metacognitive aspects of problem-solving. In L.B. Resnick (Ed.), The nature of intelligence (pp.231-235). Hillsdale, New Jersey: Erlbaum.

Flavell, J.H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. American Psychologist, 34, 906-911.

Graham, S., & Harris, K.R. (1989). Improving learning disabled students' skills at composing essays: Self-instructional strategy training. Exceptional Children, 56 (3), 201-214.

Graham, S., Macarthur, C., Schwartz, S., & Page-Voth, V. (1992). Improving compositions of students with learning disabilities using a strategy involving

product and process goal setting. Exceptional Children, February, 322-333.

Hayes, J.R., & Flower, L.S. (1980). Identifying the organization of writing processes. In L.W. Gregg & E.R. Steinberg (Eds.). Cognitive processes in writing. (pp.3-30). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Hillocks, G. Jr. (1987). Synthesis of research on teaching writing. Educational Leadership, May, 71-82.

Hillocks, G. Jr. (1986). Research on written composition: New directions for teaching. Urbana, Illinois: ERIC Clearing House on Reading and Communication Skills and National Institute of Education.

Marzano, R.J. (1991). Language, the language arts, and thinking. In J. Flood, J.M. Jensen et al (Eds.) Handbook of research on teaching the English language arts. (pp. 559-586). New York: Macmillian .

Meyer, B.J.F. (1984). Organizational aspects of text: Effects on reading comprehension and applications for the classroom. In J. Flood (Ed.), Promoting reading comprehension (pp. 113-138). Newark,

DE:International Reading Association.

National Joint Committee for Learning Disabilities (1987). Revised definition of learning disabilities. In J. F. Kavanagh & T. J. Truss, Jr. (Eds.), Learning disabilities: Proceedings of the national conference (pp.549-551). Parkton,Maryland: York Press.

Newcomer, P., & Barenbaum, E. (1991). The written composing ability of children with learning disabilities: A review of the literature from 1980 to 1990. Journal of Learning Disabilities, 24 (10), 578-593.

Paris, S.G. (1991). Assessment and remediation of metacognitive aspects of children's reading comprehension. Topics in Language Disorders, 12 (1), 32-50.

Paris, S.G., Lipson, M.Y., & Wixson, K.K. (1983). Becoming a strategic reader. Contemporary Educational Psychology, 8, 293-316.

Raphael, T.E., Englert, C.S., & Kirschner, B.W. (1989). Students' metacognitive knowledge about writing. Research in the Teaching of English, 23 (4), 343-379.

Scardamalia, M., & Bereiter, C. (1986). Research on written composition. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd ed.) (pp.778-803). New York: Macmillan.

Squire, J.R. (1983). Composing and comprehending: Two sides of the same basic process. Language Arts, 60, 581-589.

Stein, N.L. (1986). Knowledge and process in acquisition of writing skills. In E.Z. Rothkopf (Ed.) Review of research in education Vol.13. (pp. 225-258). Washington,D.C.: American Educational Research Association.

Taylor, B.M., & Beach, R.W. (1984). The effects of text structure instruction on middle-grade students' comprehension and production of expository text. Reading Research Quarterly, 19, 134-136.

White, J. (1991). Changing practice: A history of the National Writing Project 1985-1989. Great Britain: National Curriculum Council.

Appendix A

Metacognitive Interview

The metacognitive interview was taken from Englert et al (1988).

Vignette 1

Here's the first student. His name is John. He sent along a problem that he wants to ask you about. His problem is this - he has a hard time getting his paper started. Yesterday, his teacher told the class to "Write about anything you want to write about." John said he just sat there. He didn't know what to say - or how to begin the paper.

1.Sources of Information/Prewriting

What advice can you give him?

What else can John do to think of ideas for the paper?

2.Organizing Ideas

Before he starts writing, can John do anything to help organize his ideas?

3.Steps in Process

I talked to John's teacher and she told me that next week everyone in the class is going to pick a different wild animal and write a report about that animal. Can you tell John the steps he can follow in writing the report ? (What can he do first? second? third?)

4.Topic Selection & Idea Generation

Now let's give John more specific advice. What animals can he write about? (List one or more animals and have the student select one.) What kinds of information can John include in his report about this animal? (Record information on index cards.)

5.Predicting a Strategy

Here's what you said John might talk about in his paper. (Review briefly.) I'm going to give these cards to John when I see him. How do you think he might use these cards? Anything else he can do with them?

6.Ordering Ideas

Let's put these ideas in order as though we were writing a paper for John. What can John put first in his paper? Why did you put that first? What can John put second? Why did you put that second? (Repeat for all

cards.)

7.Subordination: Fitting New Details in Superordinate Plan

(EXAMINER HANDS STUDENT A CARD WITH A DETAIL THAT THE EXAMINER HAS WRITTEN, BUT WHICH FITS INTO ONE OF THE CATEGORIES ON CARDS ALREADY ON THE TABLE.)

Here is another detail. (Read aloud.) It's not a detail that you've written, but it's like what can happen when John begins to do research for his paper. Writers often think of new ideas after they have already started planning how to write their paper. Let's pretend that this is what has happened to John.

He not only has the ideas we've given to him - he finds a new idea after he starts to write his paper. Let's help him out by showing how he can fit the new detail to the plan we already have. First, where would we put this detail? Why did you put it there? So what would you tell John to do when he finds or thinks of a detail after he starts to write his paper?

8.Grouping Ideas (Chunking into Superordinate Category)

Look how you've ordered the cards. Do you see any ideas that go together in a group? Put the cards that you

think belong together in a small stack. If we were to put a blank card on top that has a word or a phrase that tells John what all these ideas are about (what these ideas have in common) what would we write on it for John? (Record the information on the card. Repeat for each stack.)

9.Managing Related Ideas in Text

In a paper, what can John do with ideas like these that go together? (Point to a single stack of cards.) What about the ideas that don't go together? (Point to two different stacks of cards.) In a paper, what can John do with the ideas like these that don't exactly go together?

10.Finishing: Using a Plan to Self-Evaluate Completeness

How will John know when his paper is finished? (Leave set of ideas out in front of student.) What can John do when he is finished writing his ideas ?

11.Knowledge of New Strategies and Text Form

Do you think John might try putting his ideas on a card like we did? Why don't you tell him in your own words how he might use cards like we did to write a report? (Ask how/what/where/why questions.)

12.Knowledge of Audience/Purpose

Look back over you cards. Would he use the exact same information in his paper if his teacher asked him to write a paper to convince his parents to let him keep this animal as a pet? What would he include? Why would that information convince your parents ? What information wouldn't he include?

Vignette 2

This is the second student. His name is Ben. His teacher asked him to write a paper in which he compared and contrasted two places - like two restaurants, two villages, two schools or two countries. He was supposed to tell how the two places were alike and how they were different. He started to write his paper, but he wasn't sure he was doing the it right . Let's read what he has written.

Some ways McDonalds and Burger King is alike. Burger King has a playground it is fun. they go out and pick flowers.

1.Use of Text Structure in Monitoring Text

Ben was supposed to tell how two places are alike and how they are different. Look back at his paper. Is he doing the assignment right?

2.Use of Text Structure to Check Finishing

Is his paper finished? How do you know? What can he do now?

3.Monitoring and Fixing Up Stories

Let's help Ben by editing the part he has written. I'll read the story aloud while you follow along. When we're finished, we'll see if anything needs changing. Is there anything that needs to be changed? (Why?) Let's fix those things that you think need to be changed. What should we change first? How should we change it? (Examiner makes changes and reads back the changes to the student.)

4.Retrospective Structuring and Continuing Writing

Ben thought that it might help him if you would show him how to finish his paper. I talked to Ben's teacher and she said it would be okay if you would help Ben by finishing his paper. I'll repeat the assignment again so you know what the paper is supposed to be about. Ben's teacher asked him to compare and contrast two places. In

other words, this paper is supposed to tell how two places are alike and how they are different. To help him, write the next part for him. You can write it yourself, or dictate the next part to me, and I'll write it for you.

5.Processes in Report Writing

When I asked Ben's teacher what else you could do to help Ben improve his writing, she told me that Ben really needed help writing reports. She said next month each student has to write a report about two countries. In the paper, the students are to compare and contrast two countries they are supposed to tell how they are alike and different. She said that Ben had been to France with his family quite often. It might be a good idea for Ben to write a report about how England and France are alike and different. What steps can he follow to write a report comparing/contrasting England and France?

6.Sources of Information

Where can he get information for his report?

7.Procedural: Gathering Information from Multiple Sources

The teacher gave me two books Ben can use next week when he begins to write his report. One of these books is

about England; the other tells about France. But neither book talks about both England and France in the same place. The information we need to write the report is in two different places. What can we tell Ben to do since the information he needs can't be found in one place? Can he copy the articles? (Why/ Why not?) Once he gets the ideas from the two books, how does he combine them to write the paper?

8.Idea/Topic Generation

Can you suggest some things Ben might talk about in his paper? (Examiner writes down the students' suggestions.)

9.Use of Topics to Gather Information

You have some good ideas about what Ben can include in his paper. Now, how will Ben go about finding the specific facts that fit the ideas you have suggested? How can he use these books and the ideas you have just given him?

10.Translating Ideas into Composition and Signalling

Look back at the ideas we've listed. In this paper Ben is supposed to tell how England and France are alike and different. What should the very first sentence of his report say? Here you said he might talk about

_____.(Point to another idea.) What might his sentence say when he starts to introduce this idea?

Vignette 3

1.Questions During Writing

This is another student. His name is Michael. Michael turned his paper in and said he was done, but he didn't know for sure. Sometimes writers like Michael have questions about things when they are writing. Having questions means you have to stop and think about the answers to the questions. It can happen at any time. It can happen before, during, and after someone starts writing. And there are many types of questions writers can ask. Do you ever have questions when you are writing? What kinds of questions do you have when you write? Well, Michael's question for you today is whether he is done or not. He wants you to read what he has written so far and see if we can give him any advice.

Thair are meny steps you must follow to mak biscuts. you mak them outside Joe liks biscuts.

Makeing biscuts is diffrent in many ways from makeing cakes. I lik chocolate cake best. Do you?

When I mak biscuts, I sometimes have a problem. I go

and ask my big brother. Then every thing is ok.

We eat our cake before dinner.

2.Monitoring

Do you think Michael is ready to turn his paper in? How do you know?

3.Revising Stories

To help Michael, we are going to check his story for him. I'm going to read the paper one paragraph at a time. As I read each part, see if there is anything Michael should change. Is this part ok? (If not), What is wrong? What should be changed ? (Make corrections to story. Read back story after correcting all the paragraphs to see if further changes are necessary.)

Appendix B

Analysis of Students' Metacognitive Knowledge

This analyzes was taken from Englert et al (1988).

A. Knowledge of the Writing Process

1. Steps of the writing process

"What are the steps he should follow in writing his report?"

"What steps can he follow in writing his paper about 2 countries?"

2. Sources of information

"How can he get ideas for his paper?"

"Where can he get information for his report about England and France?"

3. Obtaining and integrating ideas from multiple sources

"Here's one book about England and another book about France. Ben is supposed to write one report telling how England and France are alike and different. What can we tell Ben to do since the information he needs can't be found in one place?"

4. Recognition of the value of modeled writing strategies

"How do you think John might use these cards

(with your ideas)?"

"Why don't you tell John in your own words how he might use the cards like we did to write a report?"

"When do you think he can put his ideas on cards like this? When wouldn't he put his ideas on cards?"

5. Procedures for managing and presenting sets of expository ideas in a paper

"In a paper, what can John do with the ideas like these (set of ideas that student put in a same group) that go together?"

What can he do with ideas like these (two sets of ideas in different groups) that don't quite go together?"

6. Monitoring the completeness or adequacy of the paper

"How will John know when his paper is finished?"

"Is Michael's paper finished? How do you know?"

7. Revising expository composition

"Let's help Michael by editing the part he has written. You be Michael's editor and let's fix those things you think should be changed."

8. Strategies for deciding what information to include for different audiences

"Look back over your ideas. Would he use the exact information in his paper if his teacher asked him to write a paper to convince his parents to let him keep this (name of animal) as a pet?"

B.Organization

1. Suggest strategies for organizing planned ideas

"How can John organize his ideas before starting to write?"

2. Used categories as a basis for generating, organizing, and labelling ideas

"What kinds of information should John include in his report about his animal?"

"Look back at your ideas (for the animal report). Do you see any ideas that go together that we can put in a group? If we put a card in front of this group that would tell John what all these ideas have in common, what would we write on the card?"

"What kinds of information can Ben include when he writes a report about England and France that tells how they are alike and different?"

3. Order and subordinate ideas

"Let's put down the ideas you suggested to John for his animal report. What should you put first in his paper? Why would you put that first? What should go second? Why would you put that second, etc?"

"Here's another detail John might include in his report about animals. This is what might happen to John if he thinks of new ideas after he starts planning his report. Where would you put this detail? Why would you put that detail there? So, what advice would you give John if he thinks of other details or ideas once he starts writing his paper?"

4. Translate ideas into text following a text structure plan and signal words

"What should the very first sentence in Ben's paper say that tells how England and France are alike and different?"

"Here you said he should talk about (topic suggested by the student). What should his first sentence say when he introduces this idea?

5. Use text structure in monitoring and revising incomplete texts

"In this paper, Ben is supposed to tell how

McDonald's and Burger King are alike and different. Here is what he has written so far. Do you think he is doing the assignment right? How do you know?

"Is his paper finished? Why do you think that?"

"Let's fix his paper for him. Let's fix the part he has written, and finish the paper for him by writing the next part of his paper."

Appendix C

Criteria for Analysis of the Metacognitive Interview

The responses from the interview were divided into 2 categories - knowledge of the writing process and organization. The categories and variables within each category are taken from work by Englert et al (1988). The students responses were analyzed and placed on a continuum ranging from high-knowledge to low-knowledge responses and scored accordingly. High-knowledge responses are defined as those that accurately described or explained the component of the writing process targeted by the question (3 points). Medium-knowledge responses revealed some knowledge but missed out the critical components (2 points), and a low-knowledge response revealed a lack of understanding of the component targeted by the question (1 point). A total of 24 was the maximum number of points attainable for knowledge of the writing process and 15 points was maximum for knowledge regarding text organization. Criteria for each variable examined within the 2 categories are as follows:

Knowledge of the Writing Process

1. Steps of the Writing Process

High-knowledge response (3) Student provides a detailed description of the writing process. Mentions or refers to planning, organizing, drafting,editing and revision as an ongoing process.

Medium-knowledge response (2) Student refers to some aspect of the writing process, such as drafting and monitoring but misses all of the steps of the process.

Low-knowledge response (1) Student refers to the act of writing as getting ideas and writing them down. A minimal sense of the process. May focus on the mechanical aspect of writing.

2. Sources of Information

High-knowledge response (3) Student realizes that there are a variety of ways of generating ideas - they can generate ideas from within as well as use external sources such as books, peers, adults, etc.

Medium-knowledge response (2) May refer to one way of generating ideas but lacks a strategy to fully access a variety of information sources.

Low-knowledge response (1) Unable to access sources

of information independently, relies on others to supply information and ideas.

3. Obtaining and Integrating ideas from Multiple Sources

High-knowledge response (3) Demonstrates a sense that similar attributes or categories of information must be reported for both countries and the ideas must be ordered by attribute.

Medium-knowledge response (2) Demonstrates a sense that similar attributes or categories must be reported for both countries but no sense of ordering the ideas by attribute, or synthesis of information.

Low-knowledge response (1) The information from the multiple sources is not integrated, no evidence of synthesis or integration once the information has been gathered.

4. Recognition of the Value of Modelled Strategies

High-knowledge response (3) Displays an understanding of the strategic value of using cards such as when gathering information from many sources, keeping track of ideas, etc.

Medium-knowledge response (2) Uses cards more as a

mnemonic device for remembering, or for using 1 source of information and taking notes, or only for ordering (in contrast to grouping) ideas (emphasis on ordering rather than grouping).

Low-knowledge response (1) Indicates the cards or card-like material (eg. paper) would be used but way in which the process is described indicates there is not any understanding of the strategies underlying the card use (neither memory or organization).

5. Procedures for Managing and Presenting sets of Expository ideas in a Paper

High-knowledge response (3) Indicates an awareness that related ideas in a single group should in a paragraph and different sets of ideas should be put into different paragraphs.

Medium-knowledge response (2) Indicates the entire sets of ideas should be ordered without forming subgroups of related ideas; no indication that related ideas should be in paragraphs.

Low-knowledge response (1) No sense of managing information, just a listing of the ideas as they occur without consideration of the relationship of the ideas.

No sense of paragraph structure.

6. Monitoring the Completeness or Adequacy of the Paper

High-knowledge response (3) Used the ideas generated, had an opportunity to monitor and revise the paper. Discusses the idea of internal as opposed to using external criteria to determine completeness.

Medium-knowledge response (2) Discusses both internal and external criteria for judging completeness, may value external criteria over internal criteria.

Low-knowledge response (1) Uses external criteria to judge completion such as the teacher said so, or mechanical features such as finishing the paper and no more room, drawing a picture and colouring it, putting in a final period.

7. Revising Expository Composition

High-knowledge response (3) Awareness of the need to examine the relationship of the ideas presented to the text structure, emphasis at the idea level rather than at the word level.

Medium-knowledge response (2) Emphasis on the mechanics, punctuation, spelling rather than at the idea

or text structure level.

Low-knowledge response (1) No sense or awareness of the importance or need to revise.

8. Strategies to Decide what Information to Include for Different Audiences

High-knowledge response (3) Displays knowledge that the author must consider the audience and incorporate information that is suitable to the authors purpose and audience.

Medium-knowledge response (2) Some awareness of the strategies but inconsistent in use.

Low-knowledge response (1) Emphasis on details one should include without an awareness that the author should be selective based on the audience and the purpose of the paper.

Organization

1. Suggest Strategies for Organizing Planned Ideas

High-knowledge response (3) Conveys sense that whole chunks of information can be organized at the idea level prior to writing and state simple strategies for ordering and organizing ideas such as "think it through. Decide

first,second, third".

Medium-knowledge response (2) Ideas are organized prior to writing but does not have a sense of ordering the ideas.

Low-knowledge response (1) Rather than concentrating information at an idea level, is more interested in generating and organizing at a word level, and a reliance on external information such as the teacher or environment and also mechanics.

2. Used Categories as a Basis for Generating, Organizing and Labelling Ideas

High-knowledge response (3) Indicates a clear sense of attributes within categories.

Medium-knowledge response (2) Indicates awareness of attributes but at a detail level rather than within categories.

Low-knowledge response (1) Provides random details. In the 2nd vignette, indicates information for only 1 country, response on the country at a detail level, or provides random details for either country but not any awareness of parallel attributes.

3. Order and Subordinate Ideas

High-knowledge response (3) Displays a strategy and demonstrates knowledge that ideas are ordered and grouped. Main ideas are supported by details.

Medium-knowledge response (2) Some sense of ordering and grouping ideas to support one another.

Low-knowledge response (1) Ideas are randomly ordered without thought. Main ideas are not necessarily supported by details. Points are added randomly without consideration to grouping or order.

4. Translate Ideas into Text Following a Text Structure Plan and Signal Words

High-knowledge response (3) Able to generate sentences that introduced the traits of the concepts being considered with appropriate signal words.

Medium-knowledge response (2) Able to generate sentences about only one concept, difficulty generating information about more than one concept or trait and signal words.

Low-knowledge response (1) Unable to generate sentences following a plan and using the appropriate signal words.

5. Use Text Structure in Revising and Monitoring Text

High knowledge response (3) Able to recognize the writer had failed to provide comparisons or contrasts. Possibly suggest an organizational strategy for C/C. Able to use knowledge of a text structure to judge completeness. When asked to add information were able to add information that was germane to the piece.

Medium-knowledge response (2) Some knowledge that the writer did not provide comparisons and contrasts. May be able to add information that is suitable with assistance. Unable to use the knowledge of the text structure to judge completeness.

Low-knowledge response (1) Focus on the accuracy of facts rather than using a text structure to judge the quality of information. Use external criteria to judge completeness. For example, length of paper, factual accuracy rather than internal meaning constraints. When asked to add information to the piece, revisions tend to meander and lose focus of the purpose of the paper.

Appendix D

Criteria for Analysis of Explanation Text Structure

Analysis is based on 4 areas. Each area rated from 0 to 3 points for a total of 12 points. This analysis was taken from Englert et al (1991).

1. Introduction of the topic to be explained

(3) Clear statement made regarding the purpose or the structure of the paper.

(2) Topic and/or purpose of the paper not clearly stated, needs to be inferred by the reader.

(1) Topic and/or purpose of the paper is not stated, although can be inferred by the reader.

(0) No reference to the purpose or topic of the paper.

2. Provision for a comprehensive sequence of steps

(3) Steps presented clearly and sequentially. Includes sufficient details for the naive reader.

(2) Steps presented sequentially, but missing some details for the naive reader.

(1) May include some steps - however many details omitted and reader needs to infer.

(0) Lack of overall detail and a failure to provide

a step by step explanation.

3. Inclusion of key words

(3) Key words used systematically and accurately to convey the sequence.

(2) Key words used accurately but only occasionally and/or inconsistently.

(1) Presence of key words but used inaccurately.

(0) No key words were present.

4. Adherence to explanation organization

(3) Includes all characteristics of explanation text structure and conveys information accurately to the naive reader.

(2) May include characteristics of the explanation text structure but fails to convey the details necessary for the naive reader.

(1) Difficulty controlling the text structure, some characteristics omitted, specific details omitted.

(0) Lack of overall organization and detail.

Appendix E

Criteria for Analysis of Compare/Contrast Text Structure

Analysis is based on 5 areas. Each area rated from 0 to 3 points for a total of 15 points. This analysis was taken from Englert et al (1991).

1. Identification of the two things being compared and contrasted

(3) Clear statement regarding the two things being compared and contrasted.

(2) The 2 things being compared and contrasted are not clearly stated, reader must infer the purpose.

(1) The two things being compared and contrasted are mentioned but the reader does not get a clear sense of the text structure being used.

(0) No opening statement introducing the 2 items being compared and contrasted.

2. Description of how the 2 things are alike

(3) A clear description of how the 2 things are alike. Includes sufficient information about a few parallel traits.

(2) The description lacks sufficient detail to describe the comparisons and includes only one or two

parallel traits.

(1) Does not describe how the 2 things are alike in any detail, even on one trait.

(0) No attempt to compare 2 things, discussion centres around only 1 thing.

3. Description of how the 2 things are different

(3) A clear description of how the 2 things are different.

(2) The description lacks sufficient detail to describe the differences clearly to the reader.

(1) Does not describe how the 2 things are different in any detail, mentions only 1 difference.

(0) No attempt to contrast 2 things, no differences mentioned.

4. Use of key words

(3) Key words are used systematically and accurately to convey the similarities and differences.

(2) Key words are used accurately but only occasionally and/or inconsistently.

(1) Presence of key words but used inaccurately.

(0) No key words present.

5. Adherence to the Compare/Contrast Organization

(3) Includes all the characteristics of the compare/contrast text structure and conveys information accurately to the reader, includes an opening statement, similarities, differences and conclusions.

(2) May include some characteristics of the compare/contrast text structure but fails to include all of the characteristics.

(1) Difficulty controlling the text structure, some characteristics and details omitted.

(0) Lack of overall organization.

Appendix F

All of the think sheets were taken from Englert et al (1991).

Figure 1

Plan Think Sheet

Name_____

Date_____

Topic_____

WHO: Who am I writing this for?

_____

_____

WHY ? Why am I writing this?

_____

_____

WHAT ? What do I know ? (Brainstorm)

1._____

2._____

3._____

4._____

5._____

HOW ? How can I group my ideas?

_____

Figure 2

Explanation Organization Form

What is being explained ?

Materials/things you need

Setting ?

What are the steps ?

First

Next,

Third,

Then,

Last,

Figure 3

Compare/contrast Organization Form

What is being compared/contrasted ?

_____

_____

On what ?

_____

Alike ? Different ?

_____

_____

_____

_____

_____

On what ?

_____

Alike ? Different ?

_____

_____

On what ?

_____

Alike ? Different ?

_____

_____