The influence of prior knowledge of expository text structure on comprehension in young children

Zenda Johnson

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THE INFLUENCE OF PRIOR KNOWLEDGE OF EXPOSITORY TEXT STRUCTURE ON COMPREHENSION IN YOUNG CHILDREN

BY

Zenda Johnson, Dip. Tch.

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of Bachelor of Education with Honours at the School of Education, Western Australian College of Advanced Education

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Abstract

The effects of the instruction of report text structure on students' comprehension of expository material with familiar and unfamiliar topics was investigated in both the short and long term. Two comprehension measures were used (ability to restructure an unstructured report text through written composition, and written recall of facts). Forty two Year Three students were matched in comprehension ability based on initial general comprehension performance in a standardized test, and were assigned to either an Experimental Group which received text structure instruction, or a Control Group which received no special instruction. Results indicated that the instruction and practise in report text structure enhanced students' comprehension in terms of organizing and restructuring unstructured expository report texts using both familiar and unfamiliar topic material in both the short and long term. Similar results were not found in written recall of facts. Analyses revealed that text structure instruction did not enhance the number of facts recalled using either familiar or unfamiliar material, in either the short or long term.
DECLARATION

"I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text."
ACKNOWLEDGEMENT

I sincerely acknowledge the assistance given to me by Dr. Peter Sloan. His availability and patience made the preparation of this thesis possible, and his theoretical insights have enriched my own understandings greatly. I am truly thankful to him.
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CHAPTER 1

INTRODUCTION AND
STATEMENT OF THE PROBLEM

Introduction

This study sought to compare the comprehension of expository texts in children in Junior primary school, before and after they had been taught expository text structure. The following discussion provides a context for the research.

Background to the Problem

It is a widely accepted principle that children must be able to comprehend and produce expository writing if they are to be successful at school. Indeed, much of what children learn in school originates from textbooks which are generally written in expository form and cover informational material. The expository style of writing used in many textbooks, is often characterized by elements such as; unfamiliar areas of information, difficult concepts, technical vocabulary, long sentences, sophisticated syntax, and a hierarchical pattern of main and supporting ideas (Meyer, 1975; Taylor, 1982). This style of writing presents a stumbling block to comprehension in many children. Generally, children experience difficulty in understanding and remembering expository material.
This view is supported by a number of studies in the area of reading comprehension (Flood, 1986; Muth, 1987a; Taylor & Beach, 1984). Nelms and Newby (1985) report that, often the reading records of children who are considered effective readers decline considerably when exposition is introduced. This does not mean that children suddenly have difficulty decoding symbols to sounds—they have no difficulty doing that at all. What it does mean is that they encounter difficulty in attacking the text to construct meaning. Thus the material is not understood. Material which is not understood is less likely to be remembered than material that is understood.

The recognition of the text's structure by a reader facilitates the comprehension of expository material (Flood, 1986). Bartlett (1982, p. 75) agrees with this idea by stating, "thus, in exposition, text structure is a key to understanding a writer's message."

Perhaps one reason why children do not recognize expository text structure is that they are traditionally taught from narrative texts, which have a distinct structure and grammar of their own, and which differ
markedly from those of various expository texts. In fact, expository text structure can be described in terms of its contrast to narrative structure. The narrative structure comprises setting, initiating event, complication and resolution (Sloan & Latham, 1989). Expository text does not have the same structure. It is usual for the ideas in exposition to be hierarchically ordered with text characteristics which emphasize the important ideas and signal aspects of the structure to the reader (Armbruster, 1984).

Repetitious exposure to narratives in the early grades enables children to develop story schemata based on what they have come to know about narratives. These schemata are organized into a cognitive framework and are called upon by effective readers for meaningful interpretation of the text. If, however, reading material is confined to narratives, the transition to expository form can be fraught with problems. Flood (1986, p. 784) suggests that "subject matter textbooks pose the biggest challenge for young readers being weaned from a diet of stories." It is important then, that young children need to be similarly exposed to expository texts to enable them to develop appropriate schemata which they can bring to bear on different kinds of expository material.
The prior knowledge of expository text structure plays an important part in comprehension, by readily allowing children to organize input from the text. Thus the structure acts as a trigger for the reader to store information systematically as he reads (Meyer, 1975). However, in the transition from narratives to expository text, children need explicit comprehension instruction and not just repeated exposure to expository texts. A survey of the literature relating to this area suggests, however, that explicit instruction in comprehension rarely occurs (Tierney & Cunningham, 1984).

Knowledge of expository text structure should not be confused with knowledge of the content of the text. Calfee and Curley (1984, p.163) describe the structure as "analogous to the outline—the bare-bones of the passage." Content is the topic of the text. The two together provide a strong basis for ease of comprehension, because the reader who has both sources of stored information has more to bring to the text in order to construct meaning than the reader who has only one aspect of knowledge.

Kintsch (in Singer 1982, p.105) suggests three criteria for understanding expository prose,
namely, (a) knowledge of the specific topic, (b) knowing what and how to apply strategies for processing exposition, and (c) an ability to construct an overall framework or 'gist' specific to the exposition being read. In this study, it was hypothesized that the ability to detect text structure, without the benefit of topic familiarity, would affect comprehension. If comprehension was improved, then that improvement could decidedly be attributed to knowledge of structure, rather than to an ability to comprehend because of topic familiarity.

Children in Year Three were chosen for this study because research, to date, has mainly been done with older readers in upper grades. Researchers agree that young children's ability to comprehend expository text has been neglected (Muth, 1987b; Taylor, 1982). Reasons for this neglect are varied. Some researchers have asserted that young children are not cognitively ready for comprehending exposition (Enjelert & Liebert, 1984; Flood, 1986). Mason (1984) contended that many teachers do not see the need to introduce expository material to children in junior primary school—they prefer to work with narratives. Hence, the necessary skills
for dealing with expository texts are simply not taught in the early grades.

**Present Study**

This study was based on three theoretically driven assumptions, as follows:

1. Skills for recognizing and using expository text structure can be taught to Year Three children.

2. Text structure knowledge of readers will affect their comprehension of expository prose.

3. As a consequence of acquiring text structure knowledge, readers who are unfamiliar with the topic will be able to comprehend expository text better than readers without the knowledge of text structure.

**Statement of the Problem**

The problem central to this study was concerned with the resolution of some of the different reasons postulated for the difficulty children have in understanding expository texts. It is argued by some that it is a lack of ability, and by others a lack of knowledge (Flood, 1986; Mason, 1984). This study was directed at exploring the notion that it is a lack of knowledge and not ability that causes the difficulty that children have in understanding
expository texts.

**Purpose of the Study**

A reader's prior knowledge is deemed to include knowledge of text structure. Thus, the major purpose of this study was to investigate the effect of prior knowledge of expository text structure on reading comprehension in Year Three children. Two aspects of reading comprehension were investigated, namely, (a) transformational comprehension, which, in this study, was the restructuring of unstructured texts and (b) literal comprehension, which, in this study, was the recall of facts. The supporting general purpose of this study was to investigate the effect of prior knowledge of expository text structure on both of these aspects of comprehension, using familiar and unfamiliar topic material.

Therefore, this study sought, firstly, to expand on previous research, which has concentrated directly on older children. Secondly, the study tested the conclusion reached by Kintsch (1982) that content familiarity is a necessary component for expository text comprehension.
Definition of Terms

The following terms have special relevance to this study.

Expository Text

This term refers to written discourse about factual information, written in a formal style. It is also referred to as non-literary text, content-area material or informational readers.

Expository Text Structure

This refers to the way in which the text is organized. This study used the report text type, which is one form of exposition and which has an organizational pattern of: classification/description/place-time/dynamics/concluding statement (Sloan & Latham, 1989).

Reading Comprehension

This is the meaning made by a reader from processing written discourse. In this study, comprehension refers to the reader's ability to restructure unstructured texts (transformational comprehension) and the reader's ability to recall facts (literal comprehension). The two measures of comprehension used in this study were the
Progressive Achievement Test (P.A.T.) (Clark, 1973), and text-specific comprehension tests which were self-devised and trialled prior to the experiment.

**Familiar/Unfamiliar Texts**

**Familiar Text:** this term refers to texts with content material that is familiar to the reader.

**Unfamiliar Text:** this refers to texts with content material that is unfamiliar to the reader. In each case, the texts were report text types. In this study, content familiarity was measured by a self-devised questionnaire.

**Overview of Design**

The hypotheses for this study sought to establish cause and effect relationships between the instruction of text structure (independent variable) and reading comprehension (dependent variable). To attain the objectives of this study, the experimental method using a simple two-group design, consisting of an Experimental and a Control group, was used. The design’s strength lay in the clarity and weight of evidence which was used for predicting and generalizing. The design was a valid approach for this investigation, based on the assumption that the appropriate balance of
control over the variables was present.

Fifty two students were all initially subjected to a standardized reading comprehension test in order to match students on general reading comprehension performance. The matched students in each group were pre-tested on the dependent variable. The Experimental group received the treatment, whilst the other received traditional treatment. Immediate and delayed posttests were given to all students and all data were collected and analysed.

Population

The children involved in this study were two classes of randomly assigned homogeneous, mainstream children in Year Three, who attend different schools. The classes consisted of 52 children, that is, 27 girls and 25 boys, 42 of whom participated in this study.

Instruments

The Progressive Achievement Test, Level Three, Reading Comprehension A and Vocabulary B, was used to measure comprehension. This test has a reliability coefficient of .88 and teachers,
curriculum officers, psychologists, and reading advisors all agree that content validity is high (Clark, 1973). Thus, its selection was because of high reliability and validity.

A questionnaire was administered to all of the participating students to establish topic familiarity. The information derived from the questionnaire determined the material used for the pre and posttests.

The pre and posttest instruments on the dependent variable (specific reading comprehension) were experimenter-developed and included familiar and unfamiliar topic material. They were scrutinized by two independent reading experts to determine their content validity, and tested for reliability in a small scale pilot study with a group of similar subjects prior to the commencement of the experiment. The tests were scored by a reading expert as a further reliability check. The tests followed the format of an unstructured report, based on the Language Reconstruction activities devised by Sloan and Latham (1981).
Data Collection

Both the Experimental and Control groups used the same expository reading material for the sessions, but were required to complete different tasks based on the texts. The Control group was required to read the texts silently. No activities were given. The Experimental group was required to read the text data and complete activities, based on the direct teaching of the report structure. The four tests (P.A.T., pre- and two posttests) were administered by the researcher. No other party was involved in data collection.

Design

A diagrammatic representation of the design is given in the detailed section on Experimental Design (see p. 65).

Procedure

Two Year Three classes participated in this study. A coin was flipped to allocate the classes to the Experimental and Control conditions. This method of random sampling ensured that each class had the same probability of being selected to participate in the Experimental group.

In the second week of school in February, 1990,
the researcher administered the Progressive Achievement Test to all of the children in both classes, and, based on test results, children were matched for general reading performance. This ensured that the groups were comparable on reading performance at the outset.

The following day, both groups completed a questionnaire on topic familiarity (see Appendix marked A). One week later, both groups were pretested (using a self-developed test) on the dependent variable, that is, use of text structure in comprehending expository material. The content of the test included familiar and unfamiliar material. Details of this test are given in Chapter 4 under the heading Testing Instruments and Materials.

At weekly intervals, the Experimental group was given six instructional sessions, each of one hour, in which the report text structure (based on Sloan and Latham's (1989) format) was taught. Practise at identifying the text type and structure was done via the use of games, oral reports and activity worksheets (see Appendices II, I, and J).

The Control group was involved in silently
reading report texts. In order to control the material variable, the same reading material as that used by the Experimental group was used.

The day after the last instructional session, both groups were posttested on the dependent variable, using familiar and unfamiliar material. A similar posttest was administered to both groups two weeks later.

Data Analysis

The results were collected from the Experimental and Control groups on the pre and posttests and were compared using a t-test statistical method to determine the significant differences between the means. The hypotheses were accepted or rejected according to the results produced in the statistical analysis.

Significance of the Study

This study is significant because, if the previously stated assumptions are substantiated by evidence, then important educational implications arise for:

1. An earlier introduction of expository material to children at school.
2. Explicit teaching of text structure in Junior Primary school.

3. Increasing teaching of comprehension skills in early grades.

4. A closer examination of the types of expository material chosen for young children.

Educationally, any practice which might increase and enhance children's comprehension of expository material, and therefore equip them with an important learning skill, is worth investigating.

Plan of the Thesis

This study is detailed in the following Chapters:

Chapter Two deals with a review of current literature which related to the role of prior knowledge and context in reading, the nature and structure of expository material, and methods for instructing and comprehending expository material. The reviewed literature directs the research questions and hypotheses of this study, which are detailed in Chapter Three. Chapter Four describes Experimental design, including the testing instruments and materials, and procedures for data
collection. Chapter Five is concerned with the presentation and discussion of the findings of the investigation and Chapter Six discusses significant findings, draws conclusions, and suggests implications for future research.
CHAPTER II

REVIEW OF LITERATURE

Introduction

As already stated, this study seeks to investigate whether transformational and literal comprehension in children at junior primary level is influenced by prior knowledge of expository text structure. The influence of text structure on comprehension is noted by Muth (1987b):

One factor that appears to be important in the comprehension of expository text is the reader's ability to detect a distinctive organizational pattern or structure of the text. (p. 254)

Although, as Muth indicates there is a relationship between comprehension and knowledge of text structure, there is, however, according to Taylor (1982, p. 339) little "research on children's comprehension and memory for expository text."

The background literature relating to this study is reviewed under the following headings:
1. Overview of the Reading Process

Reading may be defined as "an ongoing thinking process for making meaning out of printed language" (Sloan & Latham, 1981, p. 55). The use of the word "making" implies that the reader must actively construct meaning, and that it is not just there in the text waiting to be stumbled upon. The notion that reading is an active process is supported by others (Huey, 1968; Smith, 1978; Tierney & Pearson, 1983). Reading is active in that the reader participates in the process. He does that by bringing his own background information to the information encoded within the print. Thus in reading, the reader's non-visual information (prior knowledge) interacts with the visual information available from the text. Reading is interactive by nature, and the success of the reader in constructing meaning depends heavily upon his own input. Many theories of the reading process emphasize the importance of non-visual information.
(or a reader's prior knowledge) (Cambourne, 1979; Goodman, 1976; Smith, 1978).

Non-visual information stored in a reader's permanent memory system is triggered by three cue systems within the discourse that are interdependently and simultaneously available. They are the semantic, syntactic and graphophonic cue systems. The non-visual information of a reader can also be classified in the same way, that is, the reader has three information stores—semantic, syntactic and letter sequence stores. (Latham & Sloan, 1979; Pearson & Johnson, 1978). The semantic information system is the store of knowledge of ideas, places and events—a reader's total life experiences. Syntactic information refers to the store of information a reader holds about language and how it works, and letter sequence information refers to not only the sequence of letters, but their meaning and sound relationships (Latham & Sloan, 1979).

Based on prior knowledge, the reader constantly predicts meaning; that is, he forms hypotheses about the information in the text. He then proceeds to search the text for matching information to confirm or correct these hypotheses (Smith, 1973).
Prior knowledge is stored in complex cognitive structures, called schemata, which have certain characteristics. Firstly, a schema describes a particular group of concepts and contains other hierarchically embedded schemata within it. Secondly, schemata represent all levels of abstraction and the embedded schemata have slots for new information. The role of schemata can be likened to a "template" against which incoming information can be matched so that it can be comprehended (Hacker, 1980, p. 867). The reader selects features of the print based on predictions which he is able to make from his in-head store of information about the topic, and his feel for language. Thus, using his prior knowledge, he is able to expect certain things about the text in order to generate meaning (Cambourne, 1979). This is reflected in the Interactive model of reading.

An Interactive Model of Reading

Rumelhart's (1977) interactive model of reading depicts two sets of information interacting, that is, the information from the text and the information from the reader's knowledge store. The model's emphasis lies in the fact that the reader draws upon either source as the task demands. In
this way, a reader is trying to construct meaning in the most efficient manner, by integrating understanding from the text with the reader's personal understanding of the world (Wilson, 1983, p. 383). In this model, the goal is always meaning, through the process of comprehension. Comprehension is influenced by the arousal of appropriate contexts. Context has many triggering elements, some found in the text, others in the reader, and others from the environment in which the reading takes place. Textual features such as connectives, anaphora, substitution, unity and organization of text, all contribute to the construction of meaning. The reader's knowledge store provides a context for the interpretation of texts. This store holds prior knowledge of the topic, the language form, pragmatics of language, culture and personal attitude towards the reading. The situation, or environmental contexts in which the reader reads frequently affects comprehension. Purpose alone for reading can determine the outcome (Morgan, 1983). The significant feature of context is that it equips the reader with a framework or structure which enables the reader to organize knowledge and interpret the written material more easily.
The outcome in reading is meaning. Thus, comprehension is the making of meaning. However, comprehension is both a product and a process. As a product, comprehension refers to the final result of any reading exercise—the reader's interpretation, which can be expressed in oral or written form and can be used for testing purposes. As a process, a reader must, guided by clues within the text, consistently interpret those clues to recreate a sensible interpretation. Pearson (1985, p. 726) states that the text is the "blueprint for meaning." However, no text is completely explicit. Authors rely on their readers using inference, analysis and synthesis to construct meaning actively based on prior knowledge and the clues given in the text. Accordingly, comprehension is an interactive process, which is influenced by many factors (Pearson, 1985).

Summary

This section provides a brief overview of the reading process in order to establish a framework of current reading theory within which this study fits. A significant point which emerges is that comprehension is influenced by many factors, the most important being the reader's prior knowledge.
Prior knowledge includes knowledge of text structure. This study is concerned with the structure of expository prose and its influence on comprehension, therefore it is appropriate to consider the nature of expository prose, so that a richer understanding of the topic can be achieved.

The Nature of Expository Prose

The expository form of writing is found in content or subject based textbooks. A considerable amount of the learning that is expected from children in school comes from such textbooks (Muth, 1987a). However printed matter in expository form does not end with the final school year. Discourse material used in specialized professions such as medicine, law and business, is inevitably in expository form. Indeed journals, newspaper reports, science articles and official documents are also in expository form (Korowitz, 1985). Therefore, readers are exposed to exposition throughout their lives.

Bartlett (1982, p. 71) describes expository text thus: "expository text is text which exposes factual information." Expository text is often
contrasted with narrative text, which helps to describe expository form. Expository material is unlike narrative material in the way ideas are organized. Narratives are organized into a sequential order of events, whereas expository text has an hierarchical organization of ideas which are text specific (Taylor, 1982). Bartlett (1982) suggests that two characteristics distinguish expository text from other discourse forms, that is, purpose and organizational structure. For this study, these headings have been adopted to describe expository text.

**Purpose of Expository Text**

Schallert (1982, p. 41) states that the main purpose of expository text is to "inform the reader, to cause a change in schemata and ways of looking at reality." Bartlett (1982, p. 72) describes the purpose of expository text as "to inform and to persuade." This suggests that, as the reader comprehends new information, that information will be assimilated and accommodated in the memory system for future retrieval. There is also the possibility that the reader may need to discard previously acquired knowledge in the light of new. In each case, the reader is changing the abstract structures, or schemata,
The author's purpose for writing in the expository form is to convey thoughts in an organized fashion. Therefore, the author chooses a structure that best fits the text's purpose. Thus, expository text is written to frame knowledge of a topic (Bartlett, 1982).

**Organization Structure of Expository Text**

The organizational structure of the text is called the text's framework (Sloan & Latham, 1989). In expository structure, the organization is determined largely by the content, and, according to Horowitz (1985), little is known about how writers choose a particular text organization. However, the text is often hierarchically ordered in terms of main and subsidiary ideas. Bartlett (1982, p. 78) referring to research by Meyer, described three levels of structure in expository text:

1. Microstructure - structure at sentence level. The interrelationships between textual components which explain important content.

2. Macrostructure - structure of larger sections, eg. paragraphs. The gist of the text.
3. Top Level structure - overall organizing backbone of the text.

Recognition of these structures enables readers to organize their ideas and thus remember the content. Meyer (1975) calls the structures which belong to the upper text levels 'rhetorical predicates' but they are also referred to as 'categories' (Calfee & Curley 1984, p. 175). Categories are relational. They indicate how ideas from within the text fit together and which ideas are more important than others. They provide a scaffolding for the reader to pick up important gist clues within the text (Bartlett, 1982). Five main categories of text are identified:

1. Description - specifies something about a topic, e.g. attributes, settings.

2. Causal - association of ideas, i.e. where one idea is cause and the other is effect.

3. Problem and Solution - causative relation between problem and causes and a solution.

4. Comparison - highlighting similarities and differences between topics.

5. Collection - number of descriptions, e.g. attributes, presented together.

(McGee & Richgels, 1985, pp. 741-2)
Each of these categories can be represented by different genres. The genre (or text-type) has characteristics of its own. Sloan and Latham (1989) assert that a text-type has a specific purpose, a special framework, is logically or chronologically sequenced, and influences the style of prose. Within each text-type (e.g. recount, report, procedure, explanation), internal characteristics also exist, which explicitly guide readers to cue in to the important information. These are discourse markers, reference, connectives and cohesive ties. As an example, the report text-type (which forms part of the 'Description' category by Meyer) has a framework consisting of a classification, a description, a location (place/time), a dynamics and a summarizing comment sequence (Sloan & Latham, 1989). This framework is often not obvious, therefore the reader needs to recognize the internal characteristics—such as clue words—within the text which point to important content information or idea relationships. In this case, assuming the report is about a spider, the reader would look for sentences which contain terms such as "is a" -- the wolf spider is an arachnid (classification), "has a" -- the wolf spider has a large hairy body (description), "where/when" words --
Wolf spiders can be found today in hot regions (place/time), and words to describe movement—the female spider carries her babies on her back (dynamics). A text such as this, accompanied by appropriate pictures, would be suitable exposition for Junior primary grades. The clue words within the microstructure of the text enable the reader to link ideas and organize the incoming information.

Summary

This section has reviewed literature which outlines the nature of expository texts. Expository texts are primarily texts for learning factual information. The content of the text often determines the text's structure. The three main levels of text structure are microstructure, macrostructure and top-level structure. The five common expository categories of writing which fit into the top-level structures are Description, Causal, Problem and Solution, Comparison and Collection. These categories are expressed by different genres which have their own characteristics. The specific purpose of the organization of the content in exposition is for ease of comprehending and remembering. The structural knowledge of texts, once learned, becomes part of a reader's prior
knowledge for processing information. Prior knowledge of expository text structure is discussed in the next section.

**Prior Knowledge of Expository Text Structure**

According to Lipson (1984, p. 760), "large stores of relevant prior knowledge facilitate comprehension, increasing readers' recall and recognition of text." This assertion is supported by others (Pearson, 1978; Smith, 1978; Taylor, 1982). The interactive or schema theory of reading (Rumelhart, 1977) explains how knowledge is acquired and represented and is used in comprehension. Working memory is the central thinking instrument of the brain, and through language, which is culturally, emotionally and conceptually characterized, it manipulates various textual elements for meaning making.

The organization of stored knowledge is unique to the individual and can be described in terms of schemata. Schemata represent all types of knowledge (Schallurt, 1982). This includes the typical presentation of certain information or material. Rumelhart (1977) purports that schemata develop, or become more specific with experience.
Young children demonstrate at a very early age that they have a general cognitive story format which develops and expands over time (Schank & Abelson, 1977). Thus, young children are aware of structures or formats for written discourse which are assimilated into their schemata (Armbruster, 1984). According to Schallert (1982, p. 41) "these schemata, guide expectations and influence comprehension and production." Although this does not deal specifically with the processing of expository text, it seems logical to assume, that if young children can and do amplify their knowledge by an ability to use narrative text structure, that they can do the same thing with the use of an expository text structure. Thus they would acquire new knowledge more effectively through an ability to use expository text structures. Bartlett (1982, p. 86) claims that knowledge of text structure and how to use it in reading for learning can be taught to students who do not have it."

Meyer, Brandt and Bluth (in Taylor, 1982, p. 324) conducted an experimental study which concluded that ninth grade students who adopted the organizational pattern of the text, (the experimental group), to guide their own writing organization, were able to
remember more than those students who did not adopt the text organization. This conscious use of a text's framework is an example of the activation of acquired schemata which order and shape the incoming information to aid comprehension (Neisser, 1976).

Taylor's investigations support the idea that a reader's sensitivity to expository text structure heightens comprehension and organization of ideas (Taylor, 1982). Nelms and Newby (1985) expand on that by claiming that text structure interacts with prior learning to affect comprehension. This can mean two things. Firstly, that text structure interacts with previously acquired knowledge of content to affect comprehension, and secondly, that text structure interacts with previously learned knowledge of that structure to affect comprehension. In the latter, the structure is the trigger which activates an appropriate schema to enable the reader to process the text more ably and to recall information.

Based on his research, Bartlett (1982) describes the benefits of knowing about text structure thus:

the advantage of knowing about text
structure and using that knowledge as an aid to comprehension is that appropriate background knowledge will be activated more systematically, allowing comprehension processes such as identification and inferencing to progress. (p.83)

Children often have a great deal of prior knowledge that enables them to handle new facts and unfamiliar concepts. It may not be topic-specific knowledge, but related knowledge. Children need to be taught ways of connecting prior knowledge to new information. Children who are explicitly taught expository text structure can apply that knowledge as a frame to any incoming expository material, thus having a strategy for acquiring, remembering and retrieving new information. (Flood, 1986).

Most of the research undertaken to date concerning children's knowledge of expository text structure involves children in middle/upper or secondary school (Moyer, Brandt & Bluth, 1980; Nuth, 1987a; Richgels et al., 1987; Taylor & Beach, 1984). The general conclusion that has been drawn is that children's knowledge of expository text structure develops over the primary school years. Data from experimental research done by Englert and
Hiebert, with Third and Sixth grade children, supports the notion that "effective expository comprehension ... increases as children reach the upper elementary levels" (Englert & Hiebert, 1984, p. 65). Flood (1986, p. 786) put forward the idea that "children's cognitive and linguistic development are frequent factors that inhibit understanding of expository texts." Freedle and Hale (1979) refer to early work by Piaget, which suggests that young children (seven or eight years old) do not do well comprehending and recalling expository texts. The idea that expository text is difficult for young children to comprehend and recall is shared by Taylor (1982, p. 323) who suggests reasons for that difficulty, namely:

1. little knowledge of content
2. lack of interest
3. too great a concept load.

However, Danner (1976) has had results from experimental research which indicate that second and third grade readers can identify the main idea in paragraphs in expository text, which is a critical skill in comprehension.

Perhaps one of the most important reasons why young children encounter difficulty with
expository texts is that, until middle primary level, they have limited exposure to them. Thus their knowledge of the vocabulary, concepts and writing style of exposition is limited. Nelms and Newby (1985) suggest that the transition from narrative to expository style is not an easy one, and that, often, teachers do little to help children bridge the gap. This is reflected in the studies by Guthrie (1982, p. 186) which show that, in California, 21 classrooms in Grades Two and Five were observed for evidence on the amount of teaching time spent on learning the reading skills for content area textbooks. Results showed that 4.9% of classroom time was devoted to teaching reading skills, whilst 15.5% was spent on spelling and 15.6% on narratives.

Measurement of the Use of Text Structure

Measurement of the use of text structure is of prime importance in this study. All of the studies cited herein conducted experimental instruction of text structure over several sessions, using pre and posttest measures. One study, done with Sixth grade students, by Richgels, McGee, Lomax and Shead (1987) coherently describes the measurement procedure. Written recall was used and "analysed,
not for the number of ideas recalled, but for the degree to which readers use the same organizational patterns as the author" and "how well students use a particular structure to organize their written compositions" (Richgels et al. 1987, p. 181).

After analysis, the conclusions reached were, that if students' organization of recall matched the text's organization, that it was probable that the reader was aware of and used the text organization or structure to recall information. Therefore, written compositions were measured according to how closely the organization of ideas matched a specified structure. The better writers' organization of their writing demonstrated an awareness of a specific organizational pattern.

Muth (1987b p. 255) argues that "asking students to identify the structure of a text will not ensure that they really understand how the ideas are related." Her method of measurement of text awareness lies in accuracy of answers to questions that connect ideas in the text with prior knowledge.

Pearson and Camperoll (1981) highlight the
connection between prior knowledge and text structure thus:

students who are familiar with the way texts are typically organized can use that knowledge to comprehend and remember by relating the organizational structure or schema of the text to their prior knowledge (stored schemata) about how texts are organized and what to expect from texts organized in certain ways. (p. 45).

Summary

This section reviewed research that establishes the importance of prior knowledge of text structure in reading comprehension. It can be summarized as follows:

1. Contextual knowledge, which includes text unity and organization of text, influences comprehension by organizing incoming information for later recall.

2. Young children demonstrate knowledge of a narrative format, that is, they have developed a narrative schema.

3. The interaction of expository text structure and prior learning heightens comprehension. However, little research has been done with Junior primary children.

4. Children have little exposure to expository
texts at Junior primary level, thus reducing their chances of accommodation and assimilation of text structure into their schemata.

5. Knowledge of text structure can be measured effectively.

Based on the notion that all understanding occurs in a context, the idea of context, (with particular attention to textual context) is discussed in the next section.

**Textual Context**

With reference to context, Morgan (1983, p. 305) states that "settings, purposes, and text form a dynamic context by which reading can be understood."

This statement is reinforced by Bransford and Johnson (1972) who conclude that:

> prior knowledge of a situation does not guarantee its usefulness for comprehension. In order for prior knowledge to aid comprehension, it must become an activated semantic context. (p. 724)

All texts (written and oral) are created in contexts, and contexts are many and varied. Some aspects of context are within the reader, some are
within the environment and some are within the text (Morgan, 1983, p. 306). To comprehend discourse, appropriate contexts need to be aroused. Comprehension is influenced by the information in the text being read, and also by the reader's expectations about the text. Armbruster (1984) asserts that context influences comprehension and elaborates thus:

structures of expectation help us process and comprehend stories by filtering and shaping perception. (p. 202)

These structures of expectation are part of an individual's background knowledge and they are influenced by the reader's skills and general attitude towards reading. Indeed, background knowledge, skills and attitudes all provide a context for reading, by modifying a "mental setting" for the reader (Bloom & Green, 1984, p. 443).

Understanding discourse can best be done in the context of the whole text. For example, consider the statement: the shooting of the hunters was terrible. As it stands, it can be interpreted two ways, that is, the hunters were inaccurate and did not shoot well, or that someone else shot the hunters.
The correct interpretation can be reached by prior context information only (Samuels & Kamil, 1984, p. 210).

Context information is constructed and stored as schema within the reader's long term memory. Therefore, the individual has a schema for contexts. As individuals read, the schema is the basis for their construction of meaning of the text. As further reading occurs, meaning is continuously fine-tuned into a single, connected interpretation (Armbruster, 1984).

Goodman (1984), discussing the role of context, suggests that the first factor for consideration is the text itself, which is, in this study, in expository form. There are several aspects of text construction which form a context for meaning making. However, it is important at the outset, to realize that the reader is not concentrating on text construction in itself. He is concentrating primarily on meaning, but the quality of the text, in terms of literary style and adherence to recognizable structures, will create a context for ease of meaning making. If the writer knows the audience, he will construct the text to suit that
audience, and hence make the text more predictable, and in turn, more comprehensible. The textual elements which form a context for meaning are: vocabulary, cohesion, structure, content, titles and pictures.

Vocabulary, or words, are learned by using them in context. Word identification does not automatically provide word meaning, for it is only in context that words have meaning. For example:

The man walked his dog on a lead.
The lead sinker went straight to the bottom of the pool.

Both syntax and semantics guide meaning making here. Lead in the first sentence is a noun, whilst in the second sentence, it is an adjective. The correct pronunciation is governed by the sense of the sentence. Research conducted by Johnson and Bauman (1934) concluded that syntactic context may be related to child development, but children of all ages take advantage of semantic clues.

In expository texts, where children encounter problems with vocabulary, they need to use contextual clues for word attack. Askov and Kass (in Johnson & Baumann, 1984, p. 601) gave specific instruction to Third, Fourth and Fifth grade readers in context
clues for two types of expository texts, namely, cause and effect and description. The children's ability to use the clues was measured by a specific criterion-referenced test. Results prompted the conclusion that children were more able to determine word meanings, and more likely to use context clues, when they were specifically taught about them.

In expository text, where perhaps much of the vocabulary is new, cohesive ties are very important for understanding to occur. Temporal order is one feature of text coherence. Children easily become confused if the events in the text do not match the order in which they actually occur. Linguistic elements such as connectives, anaphora and substitution contribute to text coherence. Armbruster (1984, p. 208) refers to these as "linguistic mortar to connect ideas in the text together." The way in which a text coheres provides information about the text's structure. Armbruster holds the view that an incohesive text hinders readers' comprehension, because they spend their energy trying to reconstruct cohesiveness. Readers do form an integrated model of text information which gives them a coherent cognitive framework, or a context, for remembering and understanding (Morgan, 1983).
Textual context also pertains to the content and organization of the text. The whole text, (assuming it has an appropriate concept level for the reader), is the best context for meaning, by virtue of its wholeness of content. A cohesive segment, or the entire exposition provides the reader with the necessary background for selecting and understanding the semantic information within it (Morgan, 1983). The more content is clarified by way of relevant elaboration, the easier it is to comprehend. For example, if the author promotes a meaningful context for the information, such as an advance organizer relating to the goal of the text, and proceeds to clarify the importance of the facts within the text by way of explicit phrases and appropriate text organization, the reader is more likely to build a coherent model.

Titles, subtitles, pictures, introductions and diagrams which are relevant and which capture the main and/or important ideas, are further clues which arouse the context of the reader's individual store of knowledge and experiences. All of these textual elements, when presented explicitly and logically in expository texts form what Armbruster (1984, p. 202) refers to as "considerate texts." In short, the
textual elements provide a context for learning.

Summary

All texts are created in contexts. The reader's expectations, based on generalized knowledge of language and experiences, create a context for comprehension. Contextual knowledge is stored within the schemata, and creates a 'mental setting' for reading. In expository texts, textual elements such as vocabulary, text cohesion and structure, clarification and suitability of content, all contribute to the reader's construction of an integrated cognitive model, which is a context for comprehending and remembering.

With comprehension at the heart of reading, it seemed appropriate to review literature on instructional methods which enhance the comprehension of exposition, so that the teaching methodology for the experimental treatment might reflect recent research findings. Comprehension instruction for expository material is discussed in the next section.

Comprehension Instruction for Expository Material

Dewey (in Mason, 1984, p. 26) defines comprehension as "an effort after meaning." This
A definition of comprehension has been added to somewhat as researchers have made substantial progress in understanding understanding. Pearson (1984) elaborates on the concept thus:

reading comprehension is a complex interactive process (Rumelhart 1977, Stanovich 1980), one in which a reader varies his or her focus along a continuum from primarily text-based processing ... to primarily reader-based processing. (p. 223).

The notion of 'text-based' and 'reader-based' stems from the interaction between two sources of knowledge, that is, information in the text, and hypotheses in the reader's mind. Current attitudes amongst researchers is that comprehension is the interaction between new information and old knowledge (Latham & Sloan, 1979; Mason, 1984; Pearson, 1985; Wilson, 1983). Comprehension depends on the reader's prior knowledge interacting efficiently with textual information. Mason (1984) takes the idea one step further by stating:

comprehension consists of representing or organizing information in terms of one's previously acquired knowledge. (p. 35)

The idea of organization of knowledge directly relates to the role of text structure in reading.
Comprehension is developmental. There are four hierarchical levels of comprehension, which are:

1. understanding what is stated (literal)
2. attending to what is important (content area reading)
3. inferring what is not stated
4. restructuring the language using the other three levels (transformational).

(Sloan, 1989)

To process information, a variety of comprehension skills are acquired as readers advance through the hierarchy of levels. When readers are aware of the skills and strategies they require for reading, and indeed, gain control over these skills and strategies, they reach a stage of metacognition—they become truly effective readers. However, research done by Tierney and Cunningham (1984) suggests that few teachers deliberately try to teach comprehension strategies.

At Junior primary level, the emphasis in reading instruction is on word recognition and decoding, not comprehension. Teachers' attitudes towards explicit comprehension instruction changes at Middle primary level (Pearson & Camporelli, 1981).
This notion was investigated by Mason (1984) whose research revealed that:

the belief that few text-level comprehension activities ought to be taught in the early grades is generally matched by little text-level comprehension instruction... (p. 47)

How then can young children, with immature expository power, limited content knowledge, and general inexperience in reading skills and strategies be taught to comprehend expository text? One solution is proposed by Pearson and Camperell (1981) who state that research seems to:

provide evidence that students learn new strategies for comprehending text when they are taught and practised systematically. The point is simple: when we identify a variable, including a text structure variable that looks like it might make a difference in comprehension, we ought to adopt a frontal assault strategy when considering its instructional power - teach about it systematically and make certain students have a chance to practise it. (p. 50)

Research by Hansen (in Pearson 1984, p. 227), although in the area of narrative, not expository text, reflects the significance of Pearson and Camperell's statement. In an effort to improve Year Two children's ability and predisposition to draw inferences, (a key comprehension skill), Hansen
changed the children's diet of literal questions to only inferential questions, and, using a pre-reading strategy, emphasized the importance of prior knowledge when children are confronted with new text information. The children were also given a "visual model of comprehension as a process of relating the new to the known." The data led Hansen to draw the conclusion that the ability to inference is tied to direct explicit instruction and monitoring.

Further support of explicit teaching of comprehension skills is given by Flood (1986) who emphasizes the need to teach children directly how to comprehend by showing them how to use appropriate strategies at appropriate times so they know about how to understand texts. Flood's comments relate specifically to expository texts, which he contends children find difficult because of a lack of preparation for both the topic and structure of the text.

A variety of methods exist for explicit instruction of the comprehension skills required to process expository texts. These methods use the text's structure as the lever, in order to develop comprehension skills aimed at recognizing and using
that structure as the key to comprehending and remembering.

Muth (1987b) believes that identifying text structure is not enough. She advocates the need for teachers to resolve reasons for the author's use of particular structures and to demonstrate how the ideas in the text hold together. Her method is to ask focus questions so that children can draw relationships among ideas. She labels her questions "internal and external connection" questions (p. 255). Internal connection questions help to connect ideas in the text, and hence highlight the text's structure, and external connection questions integrate text ideas with the children's prior knowledge. Muth claims her questioning techniques should be explained explicitly and modelled to children so as to give them the confidence they need to develop their own questioning ability. Muth claims that this is an effective strategy which can be applied to any expository text structure. The overall aim is to help children reach a stage where they will generate their own connection questions for meaningful learning.

In later research, Muth (1987a) discovered that
a hierarchical summary, based on expository text headings, teaches students to use the text structure to identify idea relationships. She also advocates the use of 'conceptual maps' which graphically represent the main and subordinate text ideas, as a means of recognizing and adopting the author's organization, and 'thematic organizers' which use top level text structures to identify specific topic information which is then related to prior knowledge (p. 69). Using these three strategies, Muth collected data from tests with Fourth, Fifth, Sixth and Seventh grade students, which showed that the experimental groups, that is, those who had received explicit text structure teaching, outperformed the control groups for meaningful learning. Although the instructional models have some drawbacks in terms of teacher time, the point to be made is that instruction of certain strategies based on text structure does enhance comprehension.

Taylor and Beach (1984, p. 136) claim that, based on their data, Fifth grade students who had been taught to summarize expository text following the text's hierarchical structure of headings and sub-headings, were able to remember more than students who did not follow the structure.
Freedle and Hale's (1979, p. 121) research on instructional methods for comprehension of expository text is more specifically geared to young children. Based on the premise that young children understand and are able to remember narrative discourse, that is, they have a narrative schema, Freedle and Hale assert that comprehension of expository discourse can be more ably achieved by means of "narrative schema transfer." Their study involved kindergarten and Fourth grade children. Each group was given narrative and expository forms of texts which were semantically identical. The children were able to recall considerably more from the expository text, even with unfamiliar content, when the similar narrative text was read to them first. In fact, the jump was from 23% to 59% correct recall information. Freedle and Hale suggest that this increase was brought about by the children transferring their knowledge of story structure to unfamiliar discourse, which, in this case, was expository prose.

Summary

The literature reviewed argues that comprehension is an interactive process between new information and prior knowledge, which is organized and stored within a reader's mental framework, or schemata.
There are four hierarchical levels of comprehension. Mastery and control over the four levels is developmental, through direct instruction. However, at Junior primary level, little explicit comprehension instruction occurs. Research shows that, as early as Kindergarten and Year Two level, children can be taught specific comprehension skills to help them more ably process texts. Various researchers suggest methods of instruction for comprehension of expository prose, centred around the text's structure, to enable children initially to develop a 'feel' for the text's framework, and, once a framework is comprehended, children adopt it into their own organized mental structures where it is called upon regularly and easily for content reading. The significance of this section is that research does show some success in comprehension instruction of expository prose, based on the text's structure, in some younger grades.

Summary of the Chapter

The literature that has been reviewed thus far is directly related to the research topic, namely, the influence of prior knowledge of expository text structure on comprehension in young children.
Initially, literature pertaining to the current theoretical position of the reading process was discussed. Two significant points emerged:

1. A reader's prior knowledge interacts with textual information for construction of meaning, and
2. Prior knowledge includes text structure information.

Section Two reviewed literature on the nature of expository text. Support for this topic lies in the discovery that expository text structure organizes information to facilitate comprehension.

Section Three provided insights into the role of a reader's prior knowledge of text structure in reading comprehension. Research indicates that a reader's knowledge of, and sensitivity to, text structure interacts with prior learning to affect comprehension. The significant points were:

1. Young children are given little exposure to expository material before middle primary school.
2. It is possible that expository power is linked to child development.
3. There is a dearth of research on the influence of knowledge of expository text structure on comprehension in young children.
Section Four established that expository text has certain textual elements which create a context in which the reader constructs meaning. The literature does confirm the idea that readers form a cognitive framework about texts—or a context—in order to understand and remember information.

Section Five confirmed an earlier observation that exposure to expository text gains impetus at the middle primary level; and again research in this area of comprehension has been done with older children. However, one study, which directly affects the feasibility of this research, achieved a significant degree of success in teaching expository structure and associated comprehension skills to young children.

Overall, it can be seen from the literature that the topic of this research is not new. However, the direction of previous research has predominately steered towards older children. The rationale for this study rests in the discovery in the literature that one reason children do not comprehend expository material is because it is not introduced until middle primary, and explicit teaching of appropriate comprehension skills and text formats
is rarely done. Reinforcement for this research comes from Bartlet (1982, p. 86) and Kintsch (in Singer 1982, p. 99) who assert that knowledge of "text structure can be taught to those who do not have it" and that organizational strategies should be taught to students to "help them become better comprehenders and organizers."

Research questions and hypotheses for this study which were formulated after an assessment of the literature are presented in the next Chapter.
CHAPTER III

THEORETICAL ASSERTIONS UNDERLYING THE STUDY AND DERIVATION OF HYPOTHESES

Introduction

The literature which was reviewed in the previous Chapter suggests several reasons why young children generally do not understand exposition. The researcher's theoretical position has been derived from an evaluation of those reasons. The theoretical assertions on which this study is based are:

1. Expository text structure knowledge allows readers more ably to comprehend exposition by the organization of information.

2. Skills for recognizing and using expository text structure can be taught to Year Three children.

3. Expository text structure knowledge, with or without topic familiarity, will enhance comprehension.

These three assertions generated the research questions and hypotheses for this study. This Chapter outlines the researcher's theoretical position and details the subsequent research questions and specific hypotheses.
Theoretical Position

In this study, the researcher's theoretical position is derived from the assertion that a reader's prior knowledge is a major factor in reading which affects reading comprehension. The knowledge of text structure which a reader brings to the reading task is one of the fundamental sets of information comprised in a reader's prior knowledge.

There are a number of varied reasons why many readers do not comprehend much of the expository texts used at Middle and Upper primary school levels. These reasons include the following:

1. unsuitability of material (Taylor, 1982)
2. texts not well organized (Armbruster, 1984)
3. necessary reading skills and strategies not taught (Nelms & Newby, 1985)
4. little or no exposure to expository text in early primary school grades (Mason, 1984).

The assumption which lies behind this research is that it is lack of exposure to and the lack of explicit comprehension instruction of expository material in Junior primary grades that contributes to the difficulties which children encounter when
confronted with informational texts in later years.

This study seeks to find evidence to support or challenge three ideas, which are:

1. Children in Junior grades, e.g., Year Three, who are taught text structure through the explicit instruction of particular knowledge and strategies, will, with practice, use the knowledge of that structure as an aid to the comprehension of other similar expository material.

2. Text structure knowledge is permanent, and children who have it will use it even after a time delay.

3. Prior knowledge of text structure will equip Year Three children with an effective strategy for comprehending expository texts that are both topically familiar and unfamiliar.

Research Questions

Essential study questions provide a starting point for generating specific hypotheses which relate to obtaining data and controlling variables. The research questions for this study are:

Major Research Question

How will the teaching of expository text structure affect comprehension, in terms of restructuring text data through writing, and recall
of facts, in children in Year Three?

This major research question resulted in the following specific research questions that provided the basis of the hypotheses of this study.

Specific Research Questions

1. How will the teaching of expository text structure affect comprehension in terms of restructuring text data through writing of familiar material in children in Year Three?

2. How will the teaching of expository text structure affect comprehension in terms of restructuring text data through writing of unfamiliar material in children in Year Three?

3. How will the teaching of expository text structure affect comprehension in terms of recall of facts of familiar material in children in Year Three?

4. How will the teaching of expository text structure affect comprehension in terms of recall of facts of unfamiliar material in children in Year Three?
Thus, there are four areas from which data were collected, and for which hypotheses were constructed. These areas can be diagrammatically represented thus:

```
          Main Question
         /        /
Four Specific Questions /        /
            Facts      Structure
               /        /
Familiar  Unfamiliar  Familiar  Unfamiliar
```

It is important to note that all the expository texts were report texts and each area for data collection related to the immediate and delayed response situations.

Objectives

This study was planned to achieve the following specific objectives:

1. To teach expository text (report) structure to Year Three children, following the framework by Sloan and Latham.

2. To determine and measure the effect of knowledge of expository text (report) structure on comprehension in Year Three children, in both the short and long term situations.

3. To investigate whether knowledge of expository
text (report) structure affects comprehension of texts with (a) familiar and (b) unfamiliar content.

Guided by the objectives of this study and the research questions, four hypotheses were formulated.

Hypothesis One

There will be a significant difference between the mean scores of the Experimental and Control groups on restructuring of expository text data with familiar material, in both the immediate and delayed response situations, as a result of text structure instruction.

Hypothesis Two

There will be a significant difference between the mean scores of the Experimental and Control groups on restructuring of expository text data with unfamiliar material, in both the immediate and delayed response situations, as a result of text structure instruction.

Hypothesis Three

There will be a significant difference between the mean scores of the Experimental and Control groups on recall of facts from familiar material, in both the immediate and delayed response situations,
as a result of text structure instruction.

**Hypothesis Four**

There will be a significant difference between the mean scores of the Experimental and Control groups on recall of facts from unfamiliar material, in both the immediate and delayed response situations, as a result of text structure instruction.

**Summary**

The research questions and subsequent hypotheses determined the design of the investigation. This investigation sought to establish a cause and effect relationship between text structure instruction and reading comprehension. Therefore, the Experimental design was the most appropriate design to use. The design is detailed in the following Chapter.
CHAPTER IV
EXPERIMENTAL DESIGN
PROCEDURES AND INSTRUMENTS

Introduction

The nature of this study is experimental in that one variable was systematically manipulated and controlled in order to determine the effects of this variation. This Chapter details all aspects of the design, and procedures and instruments which were used to complete the experiment.

Subjects

(a) Selection

Fifty two mainstream students enrolled in two Year Three classes at different Government primary schools were selected for the study. The schools were rated as homogeneous in terms of social and economic status. Both schools provided the same facilities for students and corresponding classes were similar.

The two classes consisted of 27 girls and 25 boys whose ages ranged from seven years two months to eight years three months. Ages were similarly spread in each of the populations. Age and sex differences were not deemed an important
influence on the outcome of this study. In both classes, children with reading difficulties diagnosed by school support teachers were excluded. Forty two children were matched in achievement/performance, based on the results of initial testing for general reading comprehension and vocabulary knowledge, and were retained for the study.

(b) **Subject Variables**

This study specifically looked at subjects, (hereinafter referred to as S's) both male and female in Year Three, and an average age variation of 12 months was predicted. In fact, the S's' ages varied by 13 months, which was not considered significant. Both ages and sex differences were not taken into account.

(c) **Comprehension Performance**

In order to remove any imbalance between the Experimental and Control groups in terms of reading performance, the Progressive Achievement Test (P.A.T.) was administered. It was asserted that the comprehension ability of the S's prior to the experiment would influence the experiment if there were significant differences between the groups. A comparison of the means of both populations was
tested to determine if there were any significant
differences. Table 5.1 (Chapter 5 p. 85) shows the
means and the standard deviation for both
populations.

**Design**

As the purpose of this study was to measure
the effect of teaching a top-level structure upon
comprehension, the experimental two-group design
of pretest-treatment-posttest-delayed posttest
(Gaye, 1979) was adopted. The design's strength
lies in the clarity and weight of evidence which
can be used for predicting and generalizing,
assuming the appropriate balance of control is
present. Figure 1 depicts the overall design of the
study and shows the major variables.

**Variables of the Study**

The Independent Variable in this study was
the instruction of expository (report) text
structure. This applied to material which was
both topically familiar and unfamiliar.

The Dependent Variable was comprehension.
Comprehension, in this study, was a measure of
S's ability to effect a text transformation of
Figure 1: Design of the Experiment

1. Pilot Study to trial Testing Instruments
2. Selection of Schools
   - Contact with Principals and Teachers
3. P.A.T. Reading Performance Measure
4. Random Allocation of Children to Experimental and Control Groups
5. Administration of Topic Questionnaire
6. Pretest on Dependent Variable
7. Treatment
   - Six sessions on Text Structure of Reports (Independent Variable)
8. Silent Reading of Reports (No instruction)
9. Posttest on Dependent Variable
10. Delayed Posttest on Dependent Variable
11. Results analysed for Significant Difference between Means \( p < 0.05 \)
12. Conclusions Drawn
unstructured text into a structured text, and recall facts. One measure of comprehension (that is, the Progressive Achievement Test) was already empirically validated. However, the tests and measures of comprehension relevant to this study were self devised, and were based on research done in this area by Richgels, McGee, Lomax and Shead (1987). Therefore, it is asserted that they are theoretically valid.

Extraneous variables in this study were recognised and controlled (see later in this Chapter).

A detailed discussion of the variables of this study follows.

**Independent Variable**

**Instruction of Expository Text Structure on Familiar and Unfamiliar Material.**

The top-level text structure of a report (Sloan and Latham, 1989) was used for all text structure instruction, that is, using both *topic familiar* and *topic unfamiliar* material. The five components of the report framework are:

**Classification:** What is it? What family does it belong to?

**Description:** What does it look like--size, colour, shape?
Place/Time: Where is it? Habitat? Extinct or living?

Dynamics: What does it do? How does it move or work?

Concluding Statement: Brief summary statement

(Sloan and Latham, 1989)

The treatment was designed to make the top-level structure explicit to the subjects by using various games and activities. One important activity in this treatment was Language Reconstruction (Sloan & Latham, 1981). The focus in the treatment was on the organization of ideas in the text and textual elements such as paragraphing, sentence length and key words were highlighted in order to reinforce the structure. In all cases, the texts were reports of living and non-living animals, and objects.

Kintsch (1982) asserted that content familiarity is necessary for comprehension of exposition. In this study, this notion was being tested, and comprehension was being measured with both familiar and unfamiliar content. The measure of the content's familiarity was a Prior Knowledge Questionnaire which was given to the S's prior to any specific comprehension testing (see Appendix marked A for copy of Questionnaire).
Dependent Variable - Comprehension

The Dependent Variable in this investigation was reading comprehension. In this study, comprehension was defined in two forms: (a) as the ability to transform text by restructuring and (b) recall of facts. These two aspects were applied to familiar and unfamiliar texts. As already stated, the reconstruction or transformation of text material is the highest level of comprehension (Littlemann, 1983). In this investigation, general comprehension was assessed using the Progressive Achievement Test which consisted of a multiple choice comprehension test based on short discourse selections, (a measure of inferential comprehension was also obtained), and a vocabulary test. Specific comprehension was assessed by tests on texts which took the form of unstructured reports on familiar and unfamiliar topics. This measure involved the reconstruction of text material in written form. The composing act of writing reflects the highest level of comprehension. At the same time, a second measure was taken on the number of facts recalled from both familiar and unfamiliar material.
Extraneous Variables

The extraneous variables of comparable numbers, range of abilities, testing times, rules of testing and materials for both groups were taken into account. These variables were controlled in the following ways:

(a) Comparable Numbers and Abilities.

Care was taken in the selection process to choose schools with numerically comparable class sizes in Year Three. Some S's were removed from the study due to severe reading limitations. Absence from general comprehension and pretest measures further excluded other S's. The Experimental group's final number was 21. These 21 S's were then matched in general reading performance with 21 students in the Control group, based on P.A.T. testing and a t-test for a significant difference between the means. This process achieved two things. Firstly, it equalled the group sizes, and secondly, it removed any imbalance of general reading ability prior to the experiment.

(b) Testing Times and Rules of Testing.

Testing times and adherence to rules were consistent in that all tests were conducted in the morning and identical rules of testing applied.
for both groups (see Section headed Procedure p.75 for further details).

(c) Materials

S's in both groups received the same expository reading material, that is, unstructured reports. The Experimental group used this material for a variety of activities, whilst the Control group silently read the material. This was done to ensure that every S had exposure to the same reading material.

Testing Instruments and Materials

The following tests and materials were used for the collection of data in this investigation:

1. The Progressive Achievement Tests (P.A.T.)

   The main purpose of these tests has been described by Clark (1973) as:

   Materials (that) are intended primarily to assist teachers in determining the level of development attained by their pupils in the basic skills of reading comprehension and word knowledge .... It is expected that the test results will help teachers make decisions about the kind of teaching materials, methods and programs most suitable for their pupils. (p. 3)
Comprehension Component of P.A.T.

The comprehension section of the P.A.T. which is suitable for Year Three consists of eight passages which, once read, require the S's to answer 40 literal and inferential questions in multiple choice form. Therefore, they measure the S's ability to read for meaning. To do so, the reader must use non-visual information (or prior knowledge) in order to complete the test.

The test has a reliability coefficient of .83 and a high content validity. It was felt that this study benefited from the use of a reliable, valid, meaning-based test which would allow the experimenter to determine the S's level of meaning making on extracts of discourse from a variety of topics and writing styles which included exposition. The raw scores were used as data for matching overall reading performance between the Experimental and Control groups.

Vocabulary Component of P.A.T.

Vocabulary tests are an acceptable method of measuring certain aspects of reading performance. However, word identification does not automatically provide word meaning. Vocabulary is one of the textual elements which, together with syntax, guides
meaning making. Therefore, it was considered relevant to use a vocabulary measure to provide further insights into the S's ability to read for meaning. Although the vocabulary scores were not used, it was important to administer both parts of the P.A.T. in order to establish a sound reflection of the S's meaning making abilities, so that self devised ensuing tests could be more accurately gauged to the S's reading capabilities.

2. Prior Knowledge Questionnaire

In order to satisfy all four hypotheses, it was necessary to establish what the S's considered familiar and unfamiliar content material. This was achieved by using a questionnaire which listed a variety of topics for the S's to identify as knowing a lot, a reasonable amount, a little or nothing about. The pre and posttests then were devised according to the scores, that is, three tests were based on topics which almost all of the S's identified as familiar, and three tests were based on topics which were clearly identified as unfamiliar.

3. Pre and Posttests

Measuring instruments had to be constructed
for this study because a standardized text which dealt with text structure was not available. The tests were checked for content and structure validity by an independent reading expert. The data gathered from the pilot study early in the year showed that the tests reliably measured recall and structure. In addition, they provided data relevant to the length and type of materials, in terms of vocabulary and concepts, which could be used effectively in the reconstruction of text materials to be used in later testing (see Appendix K).

The tests used for pre, post and delayed posttests were all approximately the same length, that is, about 250 words. They each contained between 15 and 20 facts, and were unstructured reports, that is to say, the content of each text was organized, by paragraphs, in the report pattern or framework of classification/description/place-time/dynamics/concluding statement, and although whole paragraphs were not fragmented, they were re-arranged so that no structure was evident.

Each test included two unstructured reports. One report was written on a familiar topic and one was written on an unfamiliar topic. The topics were:

Pretest:   Bats - familiar
           Bighorns - unfamiliar
Posttest: Soil - familiar
Tuatara - unfamiliar

Delayed Posttest: Tools - familiar
One-Humped Camel - unfamiliar

A sample of each test is located in the Appendix marked E, G, D, N, F, and G.

S's were required to read each report text, and then write about it. This written composition served as a means of showing the two aspects of comprehension relevant to this study, namely, the restructuring of text data and the recall of facts. It was felt that evidence of structure would affect other areas of comprehension, that is, the quality of the written composition would improve if the S's could impose a structure or framework on their thinking. Therefore, it was asserted that prior knowledge of text structure would result in the S's reconstruction of the texts in a true report format, thereby transforming an unstructured written text into a well-structured composition. It was also asserted that structure knowledge would improve the number of recalled facts.

The scoring was as follows:

1. one point for each of five structure points in correct order
2. one point for each recalled fact.

These scores were all used for statistical processing.

4. Materials

The following materials were used for collecting data:

1. blank lined paper for each S
2. the Progressive Achievement Test Reading Comprehension and Vocabulary test booklets and answer sheets
3. prior knowledge questionnaire
4. pre and posttests on text structure (as discussed in this Chapter).

Procedure

The overall design of this study was experimental in order to measure and compare the effectiveness of one approach over another, between two groups. The procedure for conducting the experiment provided the basic structure of the study, and is now detailed.

1. Selection of schools (based on socio-economic equality).
2. Administration of the Progressive Achievement Test.
3. Based on results of the P.A.T., S's from each class population were matched and retained.
This process of matching produced two populations which were equated as equal in terms of reading, that is, general comprehension comprising vocabulary and understanding of discourse, literal and inferential.

4. Designation of Control and Experimental groups was done by flipping a coin.

5. A questionnaire (see Appendix A) was given to the S's as a broad means of determining what content was familiar or unfamiliar to the S's. This aspect of the procedure was done to provide guidelines for the selection of appropriate text materials for pre and posttests. It was found in the exploratory work that the S's prior knowledge of content would be a factor in the present study. As this study examines both familiar and unfamiliar material, it was considered important to find areas of content from which appropriate familiar and unfamiliar texts could be drawn.

6. Familiar and unfamiliar texts were prepared using the report text type (Sloan & Latham, 1989). An analysis of these texts is provided under the heading Testing Instruments and Materials.

7. A pretest (on the dependent variable) was administered.
Treatment Phase

8. Experimental Group

Twelve unstructured texts on familiar and unfamiliar topics were presented to the S's and activities relating to the structure were completed. None of the activities required the Experimental group to write a written text involving structure. The activities consisted of oral games such as What Am I? and Reporter (see Appendix II and I), and Language Reconstruction (Appendix J).

Control Group

Twelve unstructured texts (report text type) on familiar and unfamiliar content were given to the Control group for silent reading. No instruction regarding structure was undertaken. The Control group was given the same written material as the Experimental group in order to eliminate any advantage the Experimental group may have obtained from exposure to a quantity of written material, which although unstructured, were reports. It was asserted that unless this was done, the Experimental group may have derived some gain just by having contact with the type of materials which would be used in testing. Thus, in the pretest, treatment and posttest conditions, both groups had contact
with identical materials. Accordingly, the only
difference between the Experimental and Control
groups was in the presentation of structure enhancing
activities to the Experimental group. None of the
activities used in the treatment figured in any way
in the pre and posttest conditions.

9. A posttest was conducted on the day
following the last treatment. A further posttest
was conducted two weeks later. The first posttest
was given to measure the immediate effects of the
treatment upon the dependent variable and the
second posttest was designed to measure the delayed
effects of the treatment.

10. Responses were analysed according to
the criteria established for measuring performance
on the dependent variable (see under heading
Testing Instruments and Materials p. 74)

Timetable for Collecting Data

The sequence of data collection was as follows:

<table>
<thead>
<tr>
<th>Session</th>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P.A.T. comprehension</td>
<td>40mins</td>
</tr>
<tr>
<td>2</td>
<td>P.A.T. vocabulary</td>
<td>30mins</td>
</tr>
<tr>
<td>3</td>
<td>Prior Knowledge Questionnaire</td>
<td>20mins</td>
</tr>
<tr>
<td>4</td>
<td>Pretest</td>
<td>40mins</td>
</tr>
<tr>
<td>5</td>
<td>Instruction sessions</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>data collected only for</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>evaluation of programme</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Posttest</td>
<td>40mins</td>
</tr>
<tr>
<td>11</td>
<td>Delayed Posttest</td>
<td>40mins</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Instructions for the Administration of Tests

The Progressive Achievement Test

The same procedures for the administration of the comprehension and vocabulary components of this test applied to both groups, with the following considerations:

1. S's were advised that the test was to help teachers better understand how children read, and that no marks would be given or used at school. They were further advised that (a) no help would be given, (b) they must work independently and (c) make a best guess if necessary.

2. S's were given time to organize lead pencils and erasers.

3. The test booklet and answer sheets were distributed.

4. Relevant information (name, age, school) was recorded.

5. Test examples were completed and questions were invited. Answers were given and a final check was made to ensure that everyone knew the procedure.

6. S's were reminded of unknown word strategies in order to achieve an independent reading situation.

7. The test began.

8. No help was given throughout the testing time.

9. After precisely 40 minutes (comprehension) and 30 minutes (vocabulary) the test was concluded.
10. S's were asked to check their neighbour's personal information (as well as their own). The test sheets were collected and scored according to the master answer sheets for both sections.

The Prior Knowledge Questionnaire

The collection of these data was completed prior to any specific comprehension testing. It was done as follows:

1. S's were given a test sheet.
2. S's filled in name and school on the sheet.
3. S's were instructed that:
   (a) completion of this information would help the researcher establish how much knowledge the S's held about certain topics, so that lessons might include familiar and unfamiliar things.
   (b) it was definitely not a test looking for right or wrong answers.
4. The test began.
5. After eight minutes, a check was made to see if more time was needed.
6. After two more minutes, the test was concluded.
7. Test papers were collected and scored.
Topics for teaching sessions and testing materials were based on the scores.

**Pre, Post and Delayed Posttests**

Each student was given a sheet of lined paper on which to write name and school. Students were instructed as follows:

1. The purpose of the study was to help teachers find ways of understanding how students could more ably learn from textbooks.

2. They would receive two texts (one at a time) which the researcher would orally read as they followed.

3. They would then read the text at their normal reading speed.

4. The text should be re-read.

5. They should raise a hand when they had finished reading.

6. They must remain quiet until the time limit for reading (8 minutes) had elapsed.

7. When given the signal, they were to write down what they could remember from the text.

The texts were collected, then students were given the signal to start writing. After twelve minutes, a check was made to see if the S's
needed more time. All students had completed in the twelve minute time limit. This procedure was repeated for the second text, so that the requirement of a familiar and an unfamiliar topic could be met.
CHAPTER V

FINDINGS OF THE STUDY

Introduction

In Chapter Four, the experimental nature of this study was detailed. The data which this experiment generated are presented in this Chapter and are discussed in terms of each hypothesis.

The main research question asked:

How will the teaching of expository text structure effect comprehension, in terms of restructuring text data through writing, and recall of facts, in children in Year 3?

This question generated four specific research questions which focussed on four areas, namely:

1. restructuring of text data with familiar material
2. restructuring of text data with unfamiliar material
3. recall of facts with familiar material
4. recall of facts with unfamiliar material

Before undertaking specific comprehension testing, a broad measure of the S's general
comprehension was required to ensure that the groups were comparable. The Progressive Achievement Test was administered and scores for the comprehension component were analysed for any significant differences between the groups. Table 5.1 shows the total scores, means and standard deviations for the comprehension component of this test, on which a t-test for significance was completed.

Table 5.1 shows the data relating to the Progressive Achievement Test on the dependent variable, general comprehension. The means of the Experimental and Control groups were \( \bar{M} = 9.476 \) and \( \bar{M} = 11.000 \) respectively. t values were identical for both groups, that is, \( t = .966 \) (df 20,20) at a probability level of \( p = .339 \). Thus, the data show that there was no significant difference \( (p > .05) \) between the groups on general comprehension performance. Therefore, for this study, it was assumed that the two groups were comparably matched in terms of general comprehension.
Table 5.1
Comparison of Means for General Comprehension for Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Total Score</td>
<td>189</td>
<td>231</td>
</tr>
<tr>
<td>Mean</td>
<td>9.476</td>
<td>11.000</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.935</td>
<td>5.272</td>
</tr>
<tr>
<td>t-value</td>
<td></td>
<td>.966</td>
</tr>
<tr>
<td>Probability</td>
<td></td>
<td>.339*</td>
</tr>
</tbody>
</table>

*p > .05
Specific Comprehension Data

Data were collected for two specific aspects of comprehension, namely, (a) restructuring of text data, and (b) recall of facts, and two types of texts, namely, (c) report text on familiar topics and (d) report text on unfamiliar topics. These four areas generated four hypotheses (see Chapter Three, pp. 60-61).

It is important to note that the two groups were not being compared on their pretest scores on any of the four areas. The pretest scores, with particular attention to structure, were as might be expected. However, the research design was not structured around ensuring equal performance at the pretest, but rather to measure changes in performance from pre to post and pre to delayed posttests. Further research would be required where equivalent pretest performance is built into the research design. An alternative approach would be to apply the analysis of covariance where differences in pretest scores were evident. In this study, differences at the pretest stage were not an issue. Therefore, for analysis purposes, the differences between the pre and posttest and the pre and delayed posttest scores were used in order to establish a true comparison between the groups. An appropriate 'paired' t-test of significance was carried out, and procedures which determined equal or unequal variances were applied. Table 5.2 shows the score differences which were used for analysis purposes.
Table 5.2

Differences Between Raw Scores of Pre and Posttests for Experimental and Control Groups

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th></th>
<th>Control</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Restructure</td>
<td>Recall</td>
<td>Restructure</td>
<td>Recall</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>U</td>
<td>F</td>
<td>U</td>
</tr>
<tr>
<td>Pretest Total</td>
<td>8</td>
<td>0</td>
<td>85</td>
<td>77</td>
</tr>
<tr>
<td>Posttest Total</td>
<td>58</td>
<td>75</td>
<td>63</td>
<td>92</td>
</tr>
<tr>
<td>Difference</td>
<td>50</td>
<td>75</td>
<td>-22</td>
<td>15</td>
</tr>
<tr>
<td>(D₁)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delayed Post-</td>
<td>52</td>
<td>48</td>
<td>75</td>
<td>73</td>
</tr>
<tr>
<td>test Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>44</td>
<td>48</td>
<td>-10</td>
<td>-4</td>
</tr>
<tr>
<td>(D₂)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. F refers to Familiar texts
U refers to Unfamiliar texts
Introduction

Research questions 1 - 4 (see Chapter Three) provided the bases for the hypotheses for which data were collected in both the immediate and delayed response situations. Each hypotheses is stated, and the relevant data are then presented and analysed. Then the hypotheses' conclusions are drawn and discussed.

Effects of Text Structure Instruction on the Restructuring of Expository Text with Familiar Material

Hypothesis 1 stated:

There will be a significant difference between the mean scores of the Experimental and Control groups on restructuring of expository text data with familiar material, in both the immediate and delayed response situations, as a result of text structure instruction.

Table 5.3 presents data which indicate a significant difference ($p < .001$) between the mean
scores of the differences between the pre and posttest conditions for the Experimental group compared with the Control group on the restructuring of expository text data with familiar content in both the immediate and delayed response situations. The means of the Experimental group were $\bar{M} = 2.38$ and 2.10 and the means of the Control group were $\bar{M} = -0.28$ and -0.33, which depict a significantly higher level of comprehension performance in the Experimental group on this variable.

Conclusion

$H_1$ predicting a significant difference between the means of the two groups on the effect of text structure instruction on restructuring of text data with familiar material is supported in the immediate response ($t = -7.1$, (df 20,20), $p < .001$) and the delayed response ($t = -5.3$, (df 20,20), $p < .001$) conditions.

Discussion

The hypothesis stating that there would be a significant difference between the means of the two groups with respect to this comprehension variable was supported. The highly significant probability level, in support of the Experimental
Table 5.3

Score Differences, Means and t-test Differences Between Means for Restructuring of Expository Text Data, Familiar Text.

<table>
<thead>
<tr>
<th></th>
<th>Experimental N(21)</th>
<th>Control N(21)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Posttest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D₁</td>
<td>50</td>
<td>-6</td>
</tr>
<tr>
<td>Mean</td>
<td>2.38</td>
<td>-.28</td>
</tr>
<tr>
<td>t = -7.1 (df 20,20)</td>
<td>p &lt; .001</td>
<td></td>
</tr>
</tbody>
</table>

|                  |                   |               |
| **Delayed Posttest** |                 |               |
| D₂                | 44                | -7            |
| Mean              | 2.10              | -.33          |
| t = -5.3 (df 20,20) | p < .001          |

**Note.**

D₁ = difference between pre and posttest raw scores

D₂ = difference between pre and delayed posttest raw scores
group, that is $p < .001$, suggests that the Experimental treatment probably accounted for the difference in performance as measured by the mean scores. Therefore, in this case, chance can be discounted as an explanation of the difference. This level of significance held true for both the immediate and delayed response situations.

It was asserted previously in this study that transforming a text, that is, restructuring through writing, using familiar topic material, would indicate the highest level of comprehension. Table 5.3 shows that S's in the Experimental group were able to restructure an unstructured report text according to a true report format, thus demonstrating a superior degree of understanding of the text.

Given the constraints of the time frame, the capacity of children of this age to retain knowledge over a two week period without any reinforcement tends to indicate medium, if not long term, positive effects of the treatment on the S's comprehension, in terms of restructuring an unstructured text.
In this experiment, this finding supports the notion that the direct teaching of text structure, which was done using the activities marked H, I and J in the Appendix, and which involve oral games which concentrate on the report structure components, and language reconstruction, had an effect on comprehension, in both the short and long term, in terms of restructuring a text with topically familiar material.

**Effects of Text Structure Instruction on the Restructuring of Text Data with Unfamiliar Material**

Hypothesis 2 stated:

There will be a significant difference between the mean scores of the Experimental and Control groups on restructuring of expository text data with unfamiliar material, in both the immediate and delayed response situations, as a result of the instruction of text structure.
Table 5.4 presents data which indicate a significant difference ($p < .001$) between the mean scores of the differences between the pre and posttest conditions for the Experimental group compared with the Control group, on the restructuring of expository text data with unfamiliar content in both the immediate and delayed response situations. The means of the Experimental group were $M = 3.57$ and 2.29 and the means of the Control group were $M = .24$ and -.05, which depict a significantly higher level of comprehension performance in the Experimental group on this variable.

Conclusion

$H_2$ predicting a significant difference between the means of the two groups was supported for the immediate response ($t = -9.76$, (df 20,20) $p < .001$) and the delayed response ($t = -6.81$, (df 20,20) $p < .001$). In this study, lack of familiarity did not affect the restructuring of a text with regards to the measures used. However, these data do show that structure will be applied to material which has potentially less meaning.

Discussion

$H_2$ predicting a significant difference between the mean scores of the two groups on this variable
Table 5.4
Score Differences, Means and $t$-test Differences between Means for Restructuring of Expository Text Data, Unfamiliar Material.

<table>
<thead>
<tr>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N(21)</td>
<td>N(21)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Posttest</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$D_1$</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>Mean</td>
<td>3.57</td>
<td>.24</td>
</tr>
</tbody>
</table>

$t = -9.76 \ (df\ 20,20) \ p < .001$

<table>
<thead>
<tr>
<th>Delayed Posttest</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$D_2$</td>
<td>48</td>
<td>-1</td>
</tr>
<tr>
<td>Mean</td>
<td>2.29</td>
<td>-.05</td>
</tr>
</tbody>
</table>

$t = -6.81 \ (df\ 20,20) \ p < .001$

Note.

$D_1$ = difference between pre and posttest raw scores

$D_2$ = difference between pre and delayed posttest raw scores
is supported, based on the data presented in Table 5.4. Moreover, the magnitude of difference in the posttest mean differences resulted in a probability level of $p = .000$, which, in this case, discounts any likelihood of the difference occurring by chance. The delayed posttest score of the Experimental group confirms the long-term positive effect of the treatment on comprehension.

The Control group's scores barely changed, with very little movement in either direction, indicating no intentional use by the S's of structure as an aid to comprehension by the organization of facts.

Statistical analysis of the data suggests that topic familiarity was not necessarily a prerequisite for comprehension in terms of restructuring and reordering data, thereby reinforcing the fact that the difference between the means can be more decidedly attributed to the S's use of text structure, provided by the treatment. Comprehension involves structure and lexical knowledge. In this case, text structure knowledge enabled the S's to reorganize unfamiliar information in the text, which indicates meaningful reading.
It is concluded therefore, that instruction of text structure had a major enhancing effect on comprehension in the short and long term in terms of restructuring of text data with unfamiliar material.

Effects of Text Structure Instruction and Recall of Facts with Familiar Material

Hypothesis 3 stated:

There will be a significant difference between the mean scores of the Experimental and Control groups on recall of facts from familiar material, in both the immediate and delayed response situations, as a result of text structure instruction.

Table 5.5 shows that there were no significant differences (p > .05) between the mean scores of the differences between the pre and posttest conditions of the two groups on recall of facts from topically familiar material, in either the immediate or the delayed response situation. The data indicate that, in fact, there was a decline in both groups in the number of facts recalled.
Table 5.5
Score Differences, Means and t-test Differences
Between Means for Recall of Facts from Expository
Text Data, Familiar Material.

<table>
<thead>
<tr>
<th></th>
<th>Experimental N(21)</th>
<th>Control N(21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D_1$</td>
<td>$-22$</td>
<td>$-23$</td>
</tr>
<tr>
<td>Mean</td>
<td>$1.10$</td>
<td>$1.10$</td>
</tr>
<tr>
<td>$t$</td>
<td>$0.00$ (df $20,20$), $p &gt; .05$</td>
<td></td>
</tr>
<tr>
<td>Delayed Posttest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D_2$</td>
<td>$-10$</td>
<td>$-13$</td>
</tr>
<tr>
<td>Mean</td>
<td>$.48$</td>
<td>$.62$</td>
</tr>
<tr>
<td>$t$</td>
<td>$.25$ (df $20,20$), $p &gt; .05$</td>
<td></td>
</tr>
</tbody>
</table>

Note.
$D_1 = $ difference between pre and posttest raw scores
$D_2 = $ difference between pre and delayed posttest raw scores.
Conclusion

H₃ predicting a significant difference between the means of the two groups for this variable was rejected for the immediate response (t = .00, (df 20,20), p > .05) and for the delayed response (t = .25, (df 20,20), p > .05) situations.

Discussion

According to the data in Table 5.5, both groups showed a comparable decrease in the number of facts recalled, in both the post and delayed posttests. Differences in the means resulted in probability levels of p = .00 and p = .80, both of which were not statistically significant.

There are a number of reasons why text structure instruction in this study did not seem to influence the number of facts recalled in both groups. Firstly, the instruction sessions concentrated on the organization of ideas in the texts, and not on the number of ideas within the discourse. At all times, attention was drawn to the underlying concept of the framework of the text, within which the ideas fitted. Consequently, in the testing situation, the S's concentration seemed to be focused on to the main structure.
points and not on to details.

A further influence on the recall of facts (in terms of details) could be fairly attributed to the degree of knowledge readers hold about a specific topic. S's may have had pertinent knowledge of the topic, but were not able to use structure to bring that knowledge to bear on the texts. This study used a broad measure of topic familiarity in the form of a questionnaire which allowed the S's to rate their knowledge of certain topics. The S's' age and lack of experience in filling out questionnaires could have produced results which did not accurately reflect their knowledge. Subsequently, the testing texts may not have been good examples of familiar topic material, and therefore details would be less likely to be remembered.

Lastly, the short-term memory has a capacity for six or seven items. Those items can be chunks of information, or isolated letters or words (Smith, 1978). Perhaps young children, who are immature readers are not adept at storing chunks of meaningful information, which in turn influences the number of facts recalled.
Overall, it seems clear that, for whatever reason, text structure knowledge did not promote more detailed memorization of the information in the text. The structure appeared to be the lever for remembering main textual ideas only. The data clearly suggest then, that the experimental treatment had no effect on the S's literal comprehension.

**Effects of Text Structure Instruction and Recall of Facts - Unfamiliar Material**

Hypothesis 4 stated:

There will be a significant difference between the mean scores of the Experimental and Control groups on recall of facts from unfamiliar material, in both the immediate and delayed response situations, as a result of text structure instruction.

Table 5.6 shows that there were no significant differences between the mean scores of the differences between the pre and posttest conditions of the two groups on recall of facts using unfamiliar material in the immediate response situation ($p > .05$). However, in the delayed response, the data show that there was a significant difference ($p < .05$) in favour of the Control group.
Table 5.6
Score Differences, Means and t-test Differences Between Means for Recall of Facts from Expository Text Data, Unfamiliar Material.

<table>
<thead>
<tr>
<th></th>
<th>Experimental N(21)</th>
<th>Control N(21)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Posttest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D_1$</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Mean</td>
<td>.71</td>
<td>.95</td>
</tr>
<tr>
<td>$t = 0.54$ (df 20, 20), p &gt; .05</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Delayed Posttest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D_2$</td>
<td>-4</td>
<td>32</td>
</tr>
<tr>
<td>Mean</td>
<td>-.14</td>
<td>1.52</td>
</tr>
<tr>
<td>$t = 2.95$ (df 20, 20), p &lt; .05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.

$D_1$ = difference between pre and posttest raw scores

$D_2$ = difference between pre and delayed posttest raw scores
Conclusion

H₀ predicting a significant difference between the means of the two groups for this variable is rejected in the immediate response situation (t = .541 (df 20,20), p > .05), and supported in the delayed response situation (t = 2.95, (df 20,20) p < .05).

Discussion

The data in Table 5.6 show that both groups recalled a similar number of facts in the immediate posttest, as demonstrated by the means (Mₑ = .71 Mᶜ = .95) which were not significantly different. The recalled facts were organized by the Experimental group according to the report structure, whereas the recalled facts for the Control group showed no structure, but were random recalls. However, in the delayed posttest, the Experimental group showed a decrease in the number of facts recalled (Mₑ = .14) contrary to the Control group's significant increase (Mᶜ = 1.52).

The tests both dealt with material which the children had identified as unfamiliar on the topic questionnaire. The accuracy of the answers on the questionnaire, on which the testing materials were
based, is perhaps a factor warranting further investigation. The number of facts recalled by the Control group was not isolated to one or two students, but spread across the whole group, which seemed to suggest general topic familiarity. It was felt that this topic may have been treated in class by the teacher after the questionnaire had been given. The recalled facts were not only the main ideas. Many of the S's in the Control group recalled details in both of the texts. For example, in the text on the Tuatara, S's in the Control group recalled that:

1. The animal is a lizard.
2. It has a third eye on the top of its head.
3. It is 60cm long.
4. It is found in New Zealand.
5. The lizard moves slowly.
6. It uses its third eye like a thermostat to regulate the amount of sunlight it absorbs.
7. The creature is nearly extinct.

These seven facts were typical of those recalled in the Control group S's in the delayed posttest. Some S's recalled as many as 10 or 11 facts.
Most importantly, it should be noted that the facts were randomly recalled, and did not represent any structure. Certainly then, no connection can be made in this case with text structure instruction, as the Control group had not been exposed to such instruction. Although the hypothesis for recall of facts is supported for the delayed posttest, it seems likely that this occurred for another reason and cannot be attributed to a text structure effect.

One further consideration is that, in trying to apply the structure which they had been taught, the Experimental group had more difficulty recalling the unfamiliar material than the Control group who were not trying to do two tasks at once, that is, (a) understand the unfamiliar material, and (b) restructure at the same time.

Overall, except for the delayed posttest with unfamiliar material, both groups recalled similar numbers of facts for familiar and unfamiliar material. Therefore, literal comprehension of the text was not guided by familiarity of the topic or
knowledge of text structure.

Summary of Findings

This Chapter has presented findings relevant to two aspects of comprehension. These findings relate to:

1. transformational comprehension, namely the restructuring of unstructured text through writing, and
2. literal comprehension, namely the recall of facts.

In both cases, data were collected using familiar and unfamiliar content material in the immediate and delayed testing situations.

The evidence provided by the data which tested the hypotheses of this study showed that text structure instruction had an important effect on comprehension by producing changes in the higher-order skills, but had no effect on the low-level comprehension skills. For example, the data indicated that S's who had been instructed in report text structure were able to use their knowledge of that structure to reorganize an unstructured text, thereby illustrating the organizational principles that are important in the construction of a report, and demonstrating competent reading.
It was apparent from the statistical evidence that conscious use of text structure knowledge occurred with both familiar and unfamiliar content material, and that it had staying power, as evidenced by scores in the delayed posttest.

There was, however, no evidence in this study, to suggest that knowledge and use of text structure improves the number of facts remembered. Indeed, the evidence of the data collected for recall of facts using unfamiliar material, in which the Control group significantly outperformed the Experimental group showed that text structure was not a contributing factor for memorization at all.

Overall, the findings provided the bases for the support or rejection of the hypotheses, as follows:

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variables</th>
<th>Results</th>
<th>Supported or Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$</td>
<td>Text Structure Instruction--restructuring of text, familiar text</td>
<td>$H_1 \ t = p &lt; .05$</td>
<td>Supported</td>
</tr>
<tr>
<td>$H_2$</td>
<td>Text Structure Instruction--restructuring of text, unfamiliar text</td>
<td>$H_2 \ t = p &lt; .05$</td>
<td>Supported</td>
</tr>
</tbody>
</table>
\( H_3 \)  
Text structure instruction--
recall of facts, familiar text

\( H_3 t = p > 0.05 \)  
Rejected

\( H_4 \)  
Text structure instruction--
recall of facts, unfamiliar text

\( H_4 t = p > 0.05 \)  
Rejected (for immediate response)

\( t = p < 0.05 \)  
Supported (for delayed response)
CHAPTER VI

DISCUSSION OF SIGNIFICANT FINDINGS, AND CONCLUSIONS, LIMITATIONS, IMPLICATIONS AND FUTURE RESEARCH

Introduction

The prime aim of this study was to investigate the influence of prior knowledge of expository text structure on comprehension in young children. The stimulus for the exploration into this area came from the idea that prior knowledge influences comprehension and that text structure is part of a reader's prior knowledge.

Accordingly, this study was based on the major hypothesis that conscious use of text structure would reflect in the reading performance of young children in terms of the higher order skills of comprehension and in recall of facts. The study focussed on S's in Year Three for two reasons:

1. Few previous studies dealing with expository text structure and comprehension involve children younger than Year Five.

2. Young children can learn and use text structure as a tool for comprehension.
Procedures were applied to effect internal and external validity of the experiment by controlling the relevant subject and task variables. In the scoring of the S's' responses, no variation in the scoring procedures was made, in order to increase the reliability of the testing instruments, which had been previously trialled.

**General Discussion of Findings and Conclusions**

**Restructuring of Text Data - Familiar Material**

The hypothesis concerning the restructuring of text data with familiar material was supported. Very significant differences in the means of the raw score differences of the two groups showed that the instruction of text structure made a difference to comprehension in terms of restructuring of text data. After the instruction, the S's in the Experimental group were able to restructure an unstructured report text by writing a report which followed the organizational principles of that text type. In doing so, the S's demonstrated that they had cognitively reworked and re-ordered the facts within the text, and were able to re-create a mental and tangible model of the passage which adhered to the elements of report structure.
The scores of the Experimental group from the post and the delayed posttests were substantially increased, indicating that, even with a time delay, the S's were able to bring an organizational report framework to bear on unstructured material. It seems likely then that the S's had acquired a mental framework which enabled them to hierarchically organize the information. They were able to do this on topics which were very dissimilar, that is, one text on the Tuatara and the other on Soils.

It was therefore concluded that text structure instruction was a main factor influencing comprehension at the transformational level, that is, restructuring and re-ordering of text. In addition, it was concluded that knowledge of text structure can be taught effectively to Year Three students and that they are able to retain and use that knowledge over time.

Restructuring of Text Data - Unfamiliar Material

An analysis of the data obtained in this study relating to this aspect of comprehension would suggest that knowledge of a text's structure has a major influence on comprehension whether the topic is familiar or not. In this study, the test on
this aspect of comprehension resulted in a probability level of $P = .000$ (at posttest stage). These data show that S's who retain the structure format within their network of prior knowledge, can and do use that structure to more competently comprehend unfamiliar material. These S's were able to restructure unstructured material through writing, which reflects the highest form of comprehension.

The delayed posttest results gave further support to the idea that text structure knowledge is lasting, and that, once it is assimilated into the readers' schemata, it equips readers with an effective strategy for comprehending material which is not topically part of their cognitive domains. These data give some support to the idea that knowledge of text structure may aid comprehension without the benefit of topic familiarity. This finding runs counter to the conclusion reached by Kintsch (1982) that content familiarity is a necessary component for expository text comprehension. Certainly the two factors, that is text structure knowledge and topic familiarity, together provide readers with a solid foundation for effective reading. However, structure knowledge alone does
allow the reader to attack an unfamiliar text and re-shape it, even if lexical limitations inhibit total understanding.

The conclusion reached from this study then, is that text structure knowledge enhances comprehension whether the content is familiar or not.

Recall of Facts - Familiar Material

This study rejected the hypothesis that text structure instruction would improve the S's literal comprehension, as demonstrated by the recall of facts, using topically familiar material. Some suggested reasons for this finding have been stated previously (see Chapter Five). The results of this study showed that, although S's were able to convincingly demonstrate knowledge of text structure, (which acted as a framework for the recall of main ideas of the texts), they were not able to use those main ideas as a retrieval aid for connected ideas, and hence recall any detail. One explanation of the lack of detailed recall is that, as immature readers, perhaps not adept in the skills of chunking, rehearsing and "in-head" organization of information, it is possible that the cognitive demands of restructuring and recall of anything
more than the main ideas were too great for S's at this age level. This is discussed in previous research by Moyer (1975) which shows that structure-sensitive readers recall more main ideas than details. Similarly, Taylor (1982) found that S's who are sensitive to text structure form a macrostructure for texts, which in this study, were all reports. Thus, it would seem likely that the S's who had developed a schema for report text structure had a goal to remember only the important information of the text in correct sequence.

Despite the fact that, in this study, the S's were on topically familiar ground, it was evident that topic familiarity and structure knowledge together did not provide the basis for greater literal comprehension. This is reflected in the differences between the mean scores of the Experimental and Control groups, which were not significant, at either the post or delayed recall times. Indeed, it was felt that concentration on the structure may have lessened the S's ability to recall facts.

Thus, it was concluded from the data, that instruction of report structure does not enhance
literal comprehension with familiar content material in Year Three children.

Recall of Facts - Unfamiliar Material

Students in both the Experimental and Control groups were not able to recall more facts in the immediate posttest on unfamiliar text. It was hypothesized that there would be a significant difference between the means of the two groups on recall of facts. As shown previously, this hypothesis was rejected for the immediate response situation, based on the lack of significance between the means of the raw score differences.

However, in the delayed posttest situation, S's in the Control group demonstrated a significant increase in the number of facts recalled. The Control group was not part of the experimental treatment in any way, therefore any improvement in the number of facts recalled from unfamiliar material cannot be attributed to text structure instruction. The increase in the number of facts was spread amongst the whole group, which could suggest that the topic was likely to have been treated in detail shortly before the delayed posttesting. Had this been known to be the case,
a different reading selection would have been used.

The S's who had been exposed to the treatment, that is, the Experimental group, recalled correctly structured main ideas, as they had done with familiar topic material. In fact, the Experimental group recalled more facts from unfamiliar text at the immediate posttest stage than it had done from familiar material. Also, their delayed posttest scores for unfamiliar and familiar material were almost identical.

The Control group scored higher on unfamiliar texts in both posttests. However, their facts were randomly recalled. It is possible that a lack of text structure knowledge allowed for a high number of facts to be remembered. Consideration must be given to the idea that one task, that is, recalling facts, was easier for the Control group than the two tasks, namely restructuring text and recalling facts, set for the Experimental group. The Experimental group demonstrated an adherence to structure at the expense of literal comprehension, which suggests that text structure instruction may have got in the way of fact recall. This aspect
would need further clarification through subsequent experiments. Overall, topic familiarity made no difference to the number of facts recalled.

**Summary of Conclusions**

**Restructuring of Text**

An analysis of the data in this study would suggest that Year Three children can be taught expository text structure by explicit instruction. Once the structure is assimilated into their schemata, they then have a useful text processing strategy which provides for more meaningful interpretation of texts through the higher order levels of comprehension. This was demonstrated by the S's in the Experimental group of this study in the short and long term using both topically familiar and unfamiliar material. The results of testing S's on restructuring unstructured texts through writing were very significant. The levels of significance which were attained imply a cause and effect relationship between text structure instruction and comprehension. Indeed, it was the knowledge of the structure of report texts which enabled S's to transform their gist of ideas into well structured coherent compositions, thus taking them far beyond comprehension at the literal level.
It is concluded therefore, that knowledge and use of expository text structure does enhance comprehension in young children by enabling them to restructure unstructured material through writing, and that this applies to familiar and unfamiliar topic material.

Recall of Facts

The data pertaining to this aspect of comprehension revealed that, in this study, text structure awareness did not generate more recalled facts from texts using both familiar and unfamiliar material. This held true for the immediate post-testing situation and for the delayed posttest using familiar material. However, it was not the case in the delayed posttest with unfamiliar material. Reasons for this result have been discussed previously.

In all cases, structure aware students recalled the main ideas of the texts in correct report format, whereas students who were not aware of structure employed random retrieval of ideas. However, use of text structure did not enhance S's memory for the subordinate text ideas.
The data do not show a cause and effect relationship between text structure instruction and recall of facts. The structure, in this case, was possibly an inhibiting factor for fact recall. It was concluded therefore, that text structure instruction did not enhance literal comprehension in young children and that topic familiarity was not connected to the number of facts recalled.

Limitations of the Study

This study sought to confirm three assertions:

1. That expository text structure could be effectively taught to children in Year Three.

2. That instruction of text structure would enhance transformational and literal comprehension by the organization of facts.

3. That text structure instruction would equip children in Year Three with a permanent strategy for comprehending material that is topically familiar or not.

The investigation of these assertions required an experimental design which required control over certain variables. As far as possible, these controls were exercised, but this study must be seen as the basis for further investigations into the instruction of text structure with young children. In the following sections, various limitations are discussed.
**Population**

A major problem in the data collection was to ensure that class teachers did not interfere and thus influence the S's awareness of text factors. There is a potential in this type of design for this to have occurred, therefore more rigorous control in a further study would be an enhancing requirement. Also, in an effort to match an economically and socially homogeneous population, fewer students were available. The numbers were further reduced by matching the S's comprehension performance. This resulted in a smaller sample population than was desirable for more sophisticated analyses.

**Reading Comprehension Performance**

Reading comprehension performance was based entirely on the results of the Progressive Achievement Test. Although this test is theoretically suitable for Year Three level, it was felt that the S's were too young to handle the complicated format of the booklet and answer sheet which was in multiple choice form. Overall, the scores were low, and it was believed that the format of the test hindered many S's. A different comprehension test would be used in further studies with children of this age level.
Topic Familiarity

Topic familiarity was assessed using a questionnaire. It was a broad means of establishing topic familiarity, and as the study progressed, it was felt that more attention should have been given to this instrument, in order to establish accurate results. Future research concerning topic familiarity would need a finely-tuned instrument which would appropriately assess this area.

Testing Instruments

In this study, the children who were the S's were required to compose a structured report. There were some children who clearly were agitated by the task, based on their own inhibitions about writing. Perhaps the testing procedure should have involved two methods, for example, composition and question-answer or interview. Different results may have been achieved had the testing allowed for language expression in more ways than just composition.

Implications

Introduction

This study sought to answer specific questions about children and comprehension. The
findings have implications regarding:

1. reading theory

2. the teaching of reading comprehension in classrooms

3. further research

It is believed that this study can contribute to the above areas by providing a direction for more conclusive future research.

**Implications for Reading Theory**

Many studies concerning children's comprehension of expository material support the idea that exposition is less likely to be understood and remembered than narratives (Muth, 1987; Neims & Newby, 1985; Taylor, 1982). Children develop a schema for stories at an early age because they are constantly exposed to narratives. This study focussed on the idea that young children could also be exposed to exposition in order to develop a schema for specific text types. However, it was asserted that repeated exposure was not enough. Young children should also be taught the comprehension skills and strategies for meaningful interpretation of exposition. Research by Mason (1984) and Tierney and Cunningham (1984) supports this idea. It was shown in this study that this was achievable,
and that text structure instruction provided a lever for children to organize incoming textual information, thereby demonstrating a high level of comprehension. It was found that text structure knowledge had staying power, and that is could be used equally effectively with unfamiliar as well as familiar material.

The implication for reading theory then is that young children can acquire knowledge and sensitivity to expository structure despite their immature processing skills and limited knowledge base. They can, with appropriate instruction, attain levels of comprehension which bring about richer meaning from texts. This is a necessity for comprehension of exposition, and foundations which are laid early may eliminate reading difficulties in later years, and produce truly effective readers.

This study would suggest that a positive direction to take would be to explore the structures of various expository text types and comprehension, in order to establish which structures can be acquired and used by young children for meaningful learning.
Implications for Teaching Reading Comprehension in Classrooms

The findings of this study suggest that teaching methods which focus on the organization of information are relevant in the development of higher order comprehension skills. Certainly the organizational patterns of texts need to be taught by explicit instruction. Consistent attention to the development of skills which aim at recognizing and using structure is the key to the higher levels of comprehension which are required for exposition.

Wider use of strategies such as Language Reconstruction (Sloan & Latham, 1981), where sequencing of the text emphasizes key words, connectives and discourse markers should be made so that readers get a 'feel' for the text's framework. Teaching hierarchical summaries and generating questions that connect ideas serve to highlight the text's structure, and should be part of the teaching programme. Most importantly, teachers should deliberately arouse a context for learning, so that prior knowledge of content and text structure may relate to new material. One strategy, that is Predicted Substantiated Silent Discourse Reading (Sloan & Latham, 1981) is one form of connecting the new to the known by generating readers'
predictions about the text. This strategy can, of course, be manipulated to highlight the structure of the text, which then provides a framework in which the incoming information fits.

Language games such as Who Am I? in which a number of facts which are organized into structure components of a particular text are given as clues, with children filling in the missing slot (and hence the structure component) are fun and meaningful to young children. Having children generate their own structure games is a positive way of reinforcing organizational skills.

Underlying the notion of teaching structure to young children is the important need for the availability of expository material in Junior Primary classrooms. Teachers should familiarize young children with content area textbooks just as much as they are known to do with narratives.

This study supports the idea that the development of the higher order comprehension skills necessary for understanding expository material should be taught to children in Junior Primary classrooms.
and exposure to exposition should occur from the beginning of primary school. Given the importance of expository text to children's successful learning throughout school, Pearson's (1984, p. 50) "frontal assault" strategy in which text structure is systematically taught and practised may be the most promising solution yet.

**Implications for Further Research**

This study was concerned with two aspects of comprehension, namely, restructuring of texts and recall of facts. The purpose of this study was to investigate the effect of teaching expository text structure on comprehension in Year Three children.

In extending this particular study, it is suggested that a larger population be used. Alternatives to the P.A.T. Comprehension test should be considered as a means of establishing general comprehension performance. The problem of familiar and unfamiliar texts would need to be tackled; perhaps the use of a less clear structure than report, for example, procedure, might get over the problem of topic familiarity.

This study was considered the basis for further
research into the effects on comprehension of teaching different types of expository text structures to young children. Through the study, another area which represents worthwhile consideration has emerged, that is, an exploration of instructional methods for improving the comprehension skills necessary for exposition, in young children.

It is believed that the study of comprehension of exposition and young children has barely been tapped. One thing is clear, however. Expository text difficulty needs to be broken down into manageable pieces if young children are to learn and master the skills and strategies which enable them meaningfully to comprehend exposition. Teaching text structure may be viewed as one such manageable piece. Further studies which explore ways of developing strategic skills for the comprehension of exposition represent a promising area of research.
Concluding Summary

The general purpose of this study was to determine whether teaching of expository text structure to selected Year Three children would enhance comprehension, that is, written text restructuring and recall of facts. It is asserted that this was achieved for the restructuring of texts, but not achieved for recall of facts.

Exposition presents a challenge to young readers. Young children need to be taught how to meet that challenge in order to deal with any expository printed matter which they may encounter throughout their lives. A most important discovery in this study was that children as young as seven demonstrated cognitive readiness for learning and using the skills needed for the comprehension of exposition. The worth of this study lies in its value as a preliminary step towards breaking down the barriers which exist between children and their comprehension of textbooks.
Appendix A - Topic Questionnaire
Put a circle around how much you know about these things:

I know about:

Bears
Bats
Tuataras
Soil
Bees
Tools
The moon
Bread
Dinosaurs
Sharks

A LOT  A FAIR BIT  NOT MUCH  NOTHING
Colours

Bighorns

One-humped Camels

Eagles

Elephants

Crocodiles

Dunnarts

Snakes

Electricity

Aeroplanes

Chickens

Cars

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

A LOT  A FAIR BIT  NOT MUCH  NOTHING

Name:  School:
APPENDICES

Testing Instruments

Appendix B - Bats (Familiar)
C - Bighorns (Unfamiliar)
D - Soil (Familiar)
E - Tuatara (Unfamiliar)
F - Tools (Familiar)
G - One-humped Camel (Unfamiliar)
LITTLE MASTIFF-BAT

This tiny mammal is found all over the southern half of Australia. It roosts in small tree-hollows and rock crevices.

The little mastiff-bat is an Australian animal. It is an insectivorous flying mammal. (Bats are the only mammals that fly).

The little mastiff-bat is a nocturnal hunter. It can fly fast, and skims above the treetops catching insects for food. Sometimes it scurries along the ground to catch other insects. Although it is not blind, this bat, like all bats, has small weak eyes. It makes high-pitched squeaks and uses echolocation to find its way and to catch its prey.

In spite of its appearance, this little bat is gentle to handle. It is only savage towards other bats.

This bat looks rather ugly and savage. It has long, narrow wings. These wings are formed by a thin skin stretched between its long forearms and its hind legs and tail. The little mastiff-bat is tiny: about the size of a mouse. Its fur is dark grey on top and much lighter grey underneath. It has large triangular ears and a very flat head and body.

Bighorns feed on grasses in the high mountain pastures. They graze in large flocks. Each flock has a leader who must always prove his strength. Other males challenge him to head crashing contests. For hours, sometimes days, two bighorns, with heads lowered, charge each other again and again, banging their hard heads together with loud cracks that echo from the mountainsides. The contests are over only when one of the bighorns gives in.

Bighorn sheep are mountain sheep. The female bighorn is a mammal – this means that the female suckles her young.

Bighorns are bred by farmers for meat and wool. They are highly valued by their owners.

These sheep live in the mountains of western North America.

The male bighorn is large and strong. He has thick curving horns with deep ridges. The female also has horns, but they are not as long or as tightly curled as the male's. Bighorns have special pads on their feet that grip the smooth rock. This means they can keep their balance on the steep slopes and narrow ledges. These special pads enable a bighorn to leap from one side of a deep gorge to the other and never lose its footing.

SOIL

Soil feeds and houses a variety of animals, such as earthworms, ants, beetles, slugs and centipedes. It protects animals such as rabbits, foxes and moles, who burrow deep into the layers to hide and give birth to their young. Soil also promotes growth in plants.

Soil contains sand, clay, stones, mineral salts, humus (decayed plant and animal material), bacteria, water and air. Sub-soil has very little humus. Top-soil is darker because of the humus in it.

Soil is important for plant and animal growth and its fertility effects us all.

Soil is not a living material. It is bits of rock broken down by the action of water, heat and plant growth.

Soils of different kinds are found all over the countries of the world. Soil is all around us - beneath our feet, in valleys and hills, and high in the mountains.

Written by Z. Johnson.
(adapted from a leaflet distributed by the Dept. of Agriculture - no details given).
The tuatara is found only in New Zealand. Even there, it is rare.

This remarkable reptile has remained practically unchanged for 180 million years.

The tuatara is a lizard-like reptile. It is one of the most interesting of what is known as living fossils, and it is also an endangered species.

The tuatara moves slowly. It lives to 100 or more. Some tuataras have lived for 300 years. It feeds on insects such as moths and beetles which it chews slowly, sometimes falling asleep while eating. A tuatara breathes once every 7 seconds which is slower than a hibernating lizard.

The tuatara is about 60cm long, and although it looks like a lizard, it is very different in the details of its body. This reptile has the remains of a 3rd eye on top of its head. This eye possibly registers solar radiation and controls the amount of time the tuatara can spend in the sunlight.

Adapted from Cold Blooded Animals by M. Burton. (1985)
TOOLS

Tools are all around us. They are used everywhere, everyday. Tools are found at home, in the garage, at school, at building sites, at road works - everywhere. They can be as simple as a needle or as complicated as a computer.

Man has used tools since prehistoric times. Tools can be made in many ways. They are instruments for making a particular job easier. They are things like spoons, pencils, wheels, hammers and scissors.

Tools make work easier. They carry, lift, dig, cut, mix, stir, hammer, drill, stitch, draw and paint. Weapons are tools - they were made so man could defend himself.

The history of tools is an interesting study, starting from the Stone Age and ending with the present day. Even though thousands of tools have been invented, the one which is thought to be the most important is the wheel.

Tools are made out of natural materials such as stone, bone, stick, leather and metals, or man-made material such as plastics and fibre-glass. They are shaped to suit the job to be done. Some are round, others long and flat, whilst others are pointed and sharp.

Written by Z. Johnson
ONE-HUMPED CAMEL

The one-humped camel is found in the sandy ridge dunes of central Australia.

Camels can cover many kilometres across hot dry deserts with only a little food and water. They are able to walk easily in sand because of the soft pads on their feet. The camel's hump holds a store of fat. This is a reserve supply of food and can last up to six months. After a long trip with little food, the camel's hump almost disappears. With plenty of food, it soon grows again. Camels can drink 100 litres at a time.

The one-humped camel is a large desert animal. It is a herbivorous mammal.

The camel is not a native of Australia. It was brought here from the 1850s onwards because it was ideal for Australia's desert areas. There are now up to 25,000 one-humped camels in Australia.

This mammal is tall and has long legs. It has one hump on its back and a short, hairy coat that is brown to grey in colour. The one-humped camel has thick, heavy eyelids which it uses to keep the sand out of its eyes. It can close its nostrils to protect them during sandstorms.

Adapted from Animal Reports by Sloan and Latham, 1989
Treatment Activities

Appendix H - What Am I?
I - Reporter
J - Language Reconstruction
ORAL GAMES

What Am I?

Clues are given orally to children. The teacher usually starts this game off, but very quickly the children generate their own clues (and hence mentally compose a report). Clues match the structure components of the report text type, with one structure component, namely the classification, missing. Children not only have to listen for the clues to determine the object, but also to monitor the speaker, so that he/she gives the correct structure clues in the right order. The child forfeits his turn if he gives a clue out of correct order, and does not follow the report framework.

For example:

Description: I have two large black ears, a high voice and a thin tail.

Place/Time: I live in America and you often see me on television.

Dynamics: I sing, dance, and do all kinds of magical things to entertain children.

Concluding statement: Children and grown-ups all over the world love me.

What/Who am I?
Children form groups of five. The teacher gives each group a topic. In their groups, children must orally generate a report about the topic. To do so, each child gives a sentence about the topic, following the structure components of a report. Each group presents its report orally, while the rest of the class listens that the information is given following the correct framework. Children vote on the best report at the end, based on both the information and the correct structure.

This game can involve writing. Children write their reports in groups and one group member presents the report on behalf of the rest.
In the Language Reconstruction activities in the treatment sessions, children were required to cut and paste an unstructured text (as in the one on Sharks) in the correct framework of a report, thus organizing the information into the five components of:

Classification
Description
Place/Time
Dynamics
Concluding statement.
Sharks feed mainly on fish (both alive and dead) and other sea creatures. However, the huge whale shark feeds on very small plants and animals, called plankton.

Sharks can attack humans who are bathing in the water.

These fish swim in oceans and warm seas.

The shark is a cold blooded fish with a backbone. Because of its backbone, it is called a vertebrate. Their relatives are stingrays.

Sharks have a reputation of being the most ferocious of the sea animals.

Sharks have smooth skin, unlike most fish which have scales. The shark has several rows of teeth. These fish can be as small as 30cm or as large as 13.5 metres.

*from Cold Blooded Animals* by Burton
PILOT STUDY WORK SAMPLE

This passage on the Honey Bee (Sloan & Latham, 1989), in unstructured report form, was given to six Year Three children to read. They were asked to write down whatever they could remember from the passage. The exercise served to demonstrate whether the passage's length, vocabulary and concepts were appropriate for the children, and whether they would impose a structure in order to recall facts.

The example of one child's work showed some structure in report form and indicated that the language and ideas from the passage were literally comprehended and recalled.

THE HONEY BEE

Most people like the honey that the honey bees work so hard to make.

The honey bee is bright yellow and orange. It is 12mm long and has six legs. The honey bee has three separate body parts.

The honey bee is an insect.

These bees collect nectar for honey. They dance on the honeycomb to show the other bees where the best flowers for nectar are. Honey bees may fly 20,000 km to collect enough nectar for 500g of honey.

This insect lives in all parts of Australia.
Rebecca

The honey bee is yellow and orange. They collect nectar. People like honey.

Bees are insects that make honey. Bees fly a long way. They have three body parts.

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