

PRIOR KNOWLEDGE AND L1 AND L2 GRADE THREE READERS'
INTERACTING WITH TEXTS AND ANSWERING QUESTIONS ON TEXTS

by

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ABSTRACT

This case study explored how ten English as a First Language (L1) and ten English as a Second Language (L2) average Grade Three readers used Prior Knowledge and Non Prior Knowledge strategies to understand two Science texts and to answer three types of questions on the texts.

The questions were classified according to the Pearson and Johnson taxonomy (1978). Answers to Textually Explicit questions could be found in the text; answers to Textually Implicit questions invited inferences from the text and answers to Scriptally Implicit questions required readers to use their own resources.

Readers thought out loud or verbalized their thoughts after reading each sentence of the text, rated reading strategy statements, orally answered the three types of questions and then rated question-answering strategy statements.

Patterns of strategies emerged from the Text and Questions protocols. Frequency counts of strategies were tallied and percentages were calculated. Analyses of the bar graphs showed that there were apparent differences between L1 and L2 students in their use of Prior Knowledge and Non Prior Knowledge strategies when they read texts and answered questions on texts. It was felt that these differences

indicated that L1 readers seemed to be less "text-bound" or focussed on the text than L2 readers were.

There were also apparent differences between the three types of questions and L1 and L2 readers' use of Prior Knowledge and Non Prior Knowledge strategies, providing evidence that the three types of questions elicited use of different types of strategies, and lending support to Wixson's comment (1983) that the types of questions asked influenced the kinds of strategies used.

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CHAPTER I

THE PROBLEM

Chapter I includes a statement of the problem, the background of the problem, questions of the study, limitations of the study and definition of terms.

Statement of the Problem

The study explored the Prior Knowledge strategies and other strategies which do not involve the use of Prior Knowledge (Non Prior Knowledge strategies) that were employed by English as a First Language (L1) and English as a Second Language (L2) Grade Three average readers as they interacted with two Science texts and answered three types of questions on those texts.

Background of the Problem

Questions have long been used as a means of assessing reading comprehension in both formal and informal ways. Standardized reading tests typically consist of texts and questions that children respond to by selecting among multiple-choice answers; and teachers use questions to guide

and assess students' comprehension of classroom texts. Manuals of basal readers contain questions that teachers could ask their students before, during and after reading a selection. Moore (1983) has suggested, in fact, that questions form part of "naturalistic assessment" since teachers observe students as they answer questions, and teachers ask students questions during reading conferences in individualized reading programs.

This use of questioning in comprehension instruction has led to research in which researchers have investigated the types of questions asked by teachers (Bartolome, 1968; Guszak, 1967; O'Flahavan, Hartman and Pearson, 1988). Guszak (1967) noted that 70.4% of the questions asked by teachers in Grades Two, Four and Six were of a literal nature. Bartolome (1968) found that 47.54% of the questions posed by Saskatchewan teachers of the First, Second and Third Grades were of a similar memory (literal) type. O'Flahavan, Hartman and Pearson (1988) replicated Guszak's earlier study (1967). While the percentage of literal level questions asked by teachers of Grades Two, Four and Six had decreased over time to 42.8%, it was still very prevalent. They also found that readers had to use their Prior Knowledge to answer 25.3% of the questions asked.

Wixson (1983) studied the effect on children's recall of the types of questions they had been asked. She concluded that students who answered literal questions later remembered best the literal information that had been part

of their answers to those literal level questions. Similarly those students who answered inferential questions later mentioned in their re-telling the specific inferential elements in their answers to those questions.

Clearly, the bulk of research on questions has been devoted to the types of questions children were asked. However, some attention has been paid to theories that explain the processes of answering questions. Probably no one theory can be expected to fully explain the process readers go through while answering questions. Goldman and Duran (1988) attempted to describe the question-answering processes of readers, but omitted what some people see as the most basic step, which is the understanding of the questions by the responders. This basic step can, however, be found in the model of Lehnert (1978) who studied listeners, rather than readers, who were trying to understand questions. Any attempt to provide a full description of the various stages in the question-answering process of readers should probably combine the model proposed by Goldman and Duran (1988) for readers with the model for listeners described by Lehnert (1978).

If the two models are combined we find that the first stage in answering questions occurs when an attempt is made to understand a question, a step which requires both understanding the meaning of the individual words and of the concept implicit in the questions. Lehnert (1978) gave the example of a listener not comprehending the question,

"Pardon me, but do you kvonfid grodding slib?" (p. 2), because he/she failed to understand individual words and conceptualize their meaning. Another illustration, this time from reading research, is provided by Langer (1987) when she described four readers whose "uncertainty about the meaning of the question was an obvious impediment to their selection of the correct response" (p.233) in a multiple-choice test.

The second stage in question-answering is considered to be the mental categorization of the questions by the responder. A large part of Lehnert's model was devoted to listeners' categorization of questions. Goldman and Duran (1988) who were concerned with readers, also categorized the questions found in texts. They pointed out, for example, that "How" questions could be classified in two different ways:

"How many?.....quantitative response

"How are _____ similar?"...concept comparison (p. 378), and noted that categorization influenced possible answers.

The third stage in answering questions is considered to occur when readers search in their memory for an answer. Goldman and Duran described the ways in which responders examined their memory of the text for a response, and Lehnert (1978) also described how listeners used their memories for a reply.

The fourth hypothesized stage in question-answering takes place when readers feel that the likelihood of finding an answer in their memory is low. In their study, Goldman

and Duran described how their readers looked for alternate sources of information, such as the text, for an answer. Readers looked back in the text trying to find the relevant information to answer the question. Other researchers also believed that this "lookback" strategy was typically used by readers as they answered questions (Alessi, Anderson and Goetz, 1979; Alvermann, 1988; Davey, 1987, 1988; Garner, Macready and Wagner, 1984; Garner and Reis, 1981; Hahn and Smith, 1983).

Readers' search for answers either in the text or from their Prior Knowledge is the focus of the taxonomy of questions that Pearson and Johnson (1978) developed. Their taxonomy is, in fact, a classification of the probable sources of information that readers use to answer questions. Pearson and Johnson labelled these sources of information as Textually Explicit, Textually Implicit and "Scriptally" Implicit. They defined Textually Explicit questions as those that "have obvious answers right there on the page" (p. 157). They considered that Textually Implicit questions required "some sort of inferences" (p. 159) and that "both question and response are derived from the text" (p. 161). For the third type of questions, the "Scriptally" Implicit questions, they stated that "a reader needs to use his or her script...in order to come up with an answer" (p. 157). They coined the word "scriptally" to refer to readers' "scripts" or "fund of previous experiences" (p. 161). This

coined word is now common in the reading comprehension literature.

The fifth stage in the question-answering model remains to be described. It is proposed that readers construct an answer that is complete and matches the type of question asked. Goldman and Duran (1988) described how their readers tried to make their answers compatible with their categorization of the questions they had arrived at in stage two (see above). Previously Lehnert (1978) had also stressed that appropriateness was important in a good answer.

Goldman and Duran commented on their model of question-answering by mentioning briefly that readers may confirm an answer and may monitor the quality of their answers.

To recapitulate, a possible model of question-answering describes how readers try to understand the meaning of questions and then categorize those questions. Next, readers search their memory of the text for an answer. Failing this, they look back in the text or in their store of Prior Knowledge to help them come up with answers that match the type of question. Readers might also evaluate the quality of their answers and confirm that their answers are correct.

Of the five stages described the fourth stage is the one that has interested Pearson and Johnson (1978).

Clearly, many researchers who are interested in models of question-answering ignore the text itself as an

integral part of question-answering and concern themselves only with explaining the process of question-answering (Goldman and Duran, 1988; Lehnert, 1978). It is assumed in these models that readers have understood a text, and are ready at that point to answer questions. These models do not include consideration of readers' interactions with the text before the process of question-answering.

There is, however, an increasingly large literature on the role played by Prior Knowledge both in readers' initial interaction with texts and in their answering of questions afterwards. Many writers have commented on their belief that a reader brings meaning to the text and that meaning resides within the reader, and not necessarily in the text. Anderson and his colleagues (1977) described the knowledge readers brought to the text as the "interpretive framework for comprehending discourse" (p. 377). In their study they presented two texts to Education students who majored either in Music or in Physical Education. One of the texts began with the sentence, "Rocky slowly got up from the mat planning his escape" (p. 372). In the multiple-choice test of this passage, 64% of the Physical Education students chose answers that described a wrestling match, while only 25% of the Music students chose these same answers. The majority of the music students selected answers that described a prison escape.

It was concluded that the interpretive framework created by these students' Prior Knowledge was also evident

in their choice of answers to questions about the second passage. Most of the Physical Education students chose answers to questions about this second passage which described people playing cards while Music students chose answers that referred to a music-playing session. Anderson et al concluded that the knowledge readers brought to their reading influenced both their initial interaction with the text and answering of questions.

Anderson and Pearson (1984) and Rumelhart (1980) have also tried to explain how readers' Prior Knowledge enabled them to make inferences. These writers refer to a reader's Prior Knowledge structure as a schema. They describe a schema as containing "slots" for each element in the knowledge structure. For example, the schema for dining in a restaurant would include "slots" for making a reservation, arriving at the appointed time, being met by a host/hostess, ordering from a menu, eating and paying the bill. Readers' schema it was hypothesized enabled them to make inferences about information that is in a "slot" but not explicitly stated in the text. For instance, even though no mention is made in a text about a restaurant customer's paying the bill, readers could answer the inferential question, "Who paid the bill?" because they have a "slot" in their schema that the customer pays the bill.

Pearson and Johnson (1978) in exploring the notion that readers answer questions partly from the text and partly from their Prior Knowledge proposed a taxonomy of

questions that is a taxonomy of probable sources of information that readers use. Their taxonomy was used in a study by Pearson, Hansen and Gordon (1979). In this study a significant Prior Knowledge effect was discovered in average Grade Two readers' answering of "Scriptally" Implicit questions but not in their answering of Textually Explicit questions. Other schema researchers (Holmes, 1983; Johnston, 1984) have also reported on the part that Prior Knowledge plays in readers' answering of "Scriptally" Implicit questions.

Most of the literature on Prior Knowledge has emphasized the facilitative effect of Prior Knowledge on comprehension but Prior Knowledge is apparently not always facilitative. Apparently a "failure of script" can lead to inaccurate question answering. Rumelhart (1980) ascribed one cause of comprehension failure to readers' use of an inappropriate schema. When readers and the writer of the text possess incompatible schemata, readers seem to resort to distortions to make the text fit their schema. This theory of the distortion caused by readers' use of an inappropriate schema has a long history. In 1932 Bartlett found that readers in his study distorted a story to fit their schema. In 1979 Steffenson, Joag-dev and Anderson reported that Indian and American readers had distortions in their re-telling of a culturally unfamiliar wedding.

Recent work by Alvermann, Smith and Readance (1985) has reconfirmed this theory. They discovered that a

significant effect occurred in a passage about sunlight. In this passage the correct answers for six multiple-choice questions conflicted with their subjects' Prior Knowledge about sunlight. Some subjects were initially asked to write about their Prior Knowledge of sunlight while others were not asked to write about sunlight. Those who wrote about sunlight chose a significantly fewer number of correct answers to questions which conflicted with their Prior Knowledge than did students who had not written about sunlight. There was no significant effect in the other questions on which there was no disagreement between the correct answers and students' Prior Knowledge.

Other researchers, for example Holmes (1983) and Lipson (1981), have also investigated the relationship between students' accurate and inaccurate Prior Knowledge and their scores in answering questions. However, few researchers have studied the ways elementary students used their Prior Knowledge while they were actually reading texts and answering questions.

The bulk of the literature on Prior Knowledge has focussed on describing the effect of Prior Knowledge on the reading comprehension of readers who speak English as a First Language (L1). However, there are a few studies on the role of Prior Knowledge among readers who speak English as a Second Language (L2). Research on L2 readers has generally used texts that compared responses to familiar and unfamiliar cultural content. For example Vahid-Ekbatani

(1981) had her American and Iranian subjects read one text describing an evening with Mr. and Mrs. Nixon, and a second text about a rich Iranian merchant marrying a third wife. Iranian students reading in English found the unfamiliar text about Mr. and Mrs. Nixon more difficult than other Iranian students who read the same text in Farsi, their native language. Vahid-Ekbatani commented that there was some evidence that "when text contains unfamiliar culture content, language becomes an additional barrier for the bilingual reader" (p. 62).

Most of the research on L2 readers has used texts with a cultural component. Only a few researchers have compared L1 and L2 readers' use of Prior Knowledge when they read texts that did not specifically describe a particular culture (Carrell, 1983; Jenkins, 1987). One study by Carrell (1983) found that, unlike L1 students, L2 students were not able to use context clues to help them understand a text; that is, they apparently could not use the title and pictures to help them understand a text. And Jenkins (1987) reported that L2 students performed less well than L1 students in answering Textually Explicit and "Scriptally" Implicit questions on four texts about Science and Linguistics.

Overall, there is a paucity of research on how L2 readers use their Prior Knowledge in their interactions with texts that are culturally "neutral". And there are few studies that investigate how or if, L2 readers use their

Prior Knowledge to answer questions on those "neutral" texts.

There are other aspects of readers' interaction with text where there is a dearth of information available.

As readers interact with a text there are occasions when they experience confusion or lack of understanding. Brown (1980) has theorized that readers who encounter difficulties would use specific strategies to solve these problems. However, in two studies readers appeared to use fewer strategies when they read a more difficult text than when they read an easier one. For example, Hare (1981) found that the undergraduates she studied reported that they used fewer strategies when they read a text which she had designated as a low Prior Knowledge text than they did when they read another text designated as a high Prior Knowledge text. Pritchard (1990a) also discovered that his Eleventh Grade subjects verbalized more often their use of their Prior Knowledge when they read a culturally familiar passage than when they read an unfamiliar one. These studies have not been replicated with children younger than students in Grade Eleven.

Attempts to study readers' strategies as they read requires specific methodologies. Hare (1981) and Pritchard (1990a) were among a number of researchers who used a "Think-Out-Loud" (T-O-L) methodology to investigate the strategies students use while reading texts. Some of these studies have shown that a good proportion of their subjects'

verbalizations indicated that these students used Prior Knowledge to help them better understand a text.

A few researchers have investigated the question-answering strategies of readers (Anderson, 1989; Goldman and Duran, 1988; Kavale, 1977; Langer, 1987; McDonnell, 1989; Powell, 1988). With the exception of Langer (1987) whose subjects were Grade Three students, the majority of these researchers have studied children at or above the Grade Six level. Most of these investigations have been with students answering in the "closed system" of multiple-choice questions. There is a scarcity of research that investigates the strategies students use while responding to orally posed individually answered questions based on categories of the Pearson and Johnson taxonomy (1978).

In summary, studies investigating the role of Prior Knowledge in readers' comprehension of texts have produced different results depending on whether or not researchers believed the facilitative effects of Prior Knowledge. As well, most researchers have concentrated on the relationship between readers' Prior Knowledge and their scores in answering specific types of questions. There is a paucity of research in comparing L1 and L2 readers' use of Prior Knowledge as they read texts that are not specific to a particular culture. In fact, few researchers have studied just how young L1 and L2 readers use their Prior Knowledge as they read texts and answer questions on those texts.

The lack of research on the use of Prior Knowledge by young L1 and L2 readers led to the research questions following.

Questions of the Study

Two questions were concerned with readers' Prior Knowledge strategies as (a) they interacted with two texts and (b) as they answered questions on those texts:

- (1) What was the role played by Prior Knowledge strategies as average L1 and L2 Grade Three readers interacted with texts?
- (2) What was the role played by Prior Knowledge strategies as average L1 and L2 Grade Three readers answered (a) Textually Explicit questions, (b) Textually Implicit questions, and (c) "Scriptally" Implicit questions?

Two questions were concerned with Non Prior Knowledge strategies used by readers (a) as they interacted with two texts and (b) answered questions on those texts:

- (3) What was the role played by Non Prior Knowledge strategies as average L1 and L2 Grade Three readers interacted with texts?
- (4) What was the role played by Non Prior Knowledge strategies as average L1 and L2 Grade Three readers answered (a) Textually Explicit questions, (b) Textually Implicit questions, and (c) "Scriptally" Implicit questions?

It may be noted here that these initial broadly posed research questions were answered through both qualitative and quantitative analysis of the data, and were refined as data were analyzed.

Limitations of the Study

The limitations of the study are discussed under three sections:

- (1) Sample
- (2) Methodology, and
- (3) Texts.

Sample

The sample was limited to ten L1 and ten L2 average Grade Three readers. Although these numbers would be considered small in an experimental study, in an exploratory case study design the numbers were considered appropriate.

Methodology

To gather data about the extent to which Grade Three students used Prior Knowledge as they interacted with texts and answered questions on those texts the "Think-Out-Loud" (T-O-L) methodology was used. Block (1986) described T-O-L

as a kind of "window into those processes that are usually hidden" (p. 464). Students reported their thoughts as they interacted with texts and attempted to answer questions.

T-O-L or verbal report methodology has been criticized by Nisbett and Wilson (1976) as "telling more than we can know" (p.231). Ericsson and Simon (1980) rejected this criticism and stated that:

verbal reports, elicited with care and interpreted with full understanding of the circumstances under which they were obtained, are a valuable and thoroughly reliable source of information about cognitive processes (p. 247).

That this opinion has been accepted by many researchers is evident in the fact that T-O-L's are increasingly being used in reading research to study the cognitive processes of readers as they verbalize their thoughts while reading texts (Block, 1986; Goldman and Duran, 1988; Olshavsky, 1976-1977; Pereira, 1991; Powell, 1988).

To improve the validity and reliability of the data from T-O-L's, Ericsson and Simon (1984) recommended that researchers have their subjects report their thoughts immediately following the task. In this study, Grade Three students *Thought-Out-Loud* immediately after reading a sentence or after being asked a question. Apparently the Think-Out-Loud procedure did not seem to affect the question-answering performance of subjects in a study by Anderson (1989). It did not result in a significant difference in the scores of subjects who took a standardized

reading test administered in the usual way, and their scores when they later took the alternate form of the same test and *Thought-Out-Loud* after each test passage.

Kail and Bisanz (1982) and Olson, Duffy and Mack (1984) recommended that T-O-L's be used with other methods to provide "converging evidence". Thus, in this study the subjects *Thought-Out-Loud* and later reacted to and rated researcher-designed Reading and Question-Answering strategy statements obtained from a review of the literature about strategies readers used while interacting with texts and answering questions on those texts.

Texts

The texts chosen for this study were limited to selections from Natural Science. They were thus different in content, vocabulary and text structure from typical school materials found in other content curricula. Students' strategies as they interacted with these Natural Science texts might be different from those they would use reading other curriculum subjects.

Definition of Terms

English as a First Language (L1) student is a student whose predominant home language is English.

English as a Second Language (L2) student is a student whose predominant home language is not English.

Prior Knowledge is information that a reader possesses as a result of experiences with the world and with texts. In the study, Prior Knowledge does not refer to knowledge about text structure. Prior Knowledge is assessed in this study with (a) Prior Knowledge Test (see Appendix 1) and (b) readers "free-telling" of their Prior Knowledge about whales and insects.

Rating is the process used when a student listens to a Reading or Question-Answering strategy statement and then points on the reaction sheet to one of the five faces which best describes the student's response on hearing that statement.

Schema/Script is a theoretical construct of a reader's Prior Knowledge about particular concepts and events. A schema/script includes a reader's knowledge of the different elements which make up the structure of that concept or event.

"Scriptally" Implicit questions is a phrase used by Pearson and Johnson to designate questions a reader answers by using prior knowledge. This phrase is used henceforward without quotation marks.

Strategies are cognitive actions that a reader uses to comprehend or answer questions in a text. Strategies are classified as:

(a) Prior Knowledge strategies because the researcher judged that readers used their Prior Knowledge. For example after reading Whales Sentence 1, "The biggest animal on land or sea is the whale", # 8 reported the fact he knew, "the biggest whale of all is the Blue Whale".

(b) Non Prior Knowledge strategies because the researcher judged that Prior Knowledge was not used. For example after reading Whales Sentence 1, "The biggest animal on land or sea is the whale", # 13 gave the reason, "because...um they keep on growing faster".

Textually Explicit questions are questions that a reader answers by referring to what is stated in a single sentence in a text.

Textually Implicit questions are questions for which the answer is implied in a single sentence, or for which a reader must combine information from different sentences in a text.

Think-Out-Loud (T-O-L) is a term used when a student verbalizes thoughts while reading a sentence or answering a question.

CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of the study was to investigate the role of Prior Knowledge in average English as a First Language (L1) and English as a Second Language (L2) Grade Three readers' interaction with texts and then answering of Textually Explicit, Textually Implicit and Scriptally Implicit questions. The study examined both the part played by Prior Knowledge strategies as readers attempted to understand a text and answer questions on it and the part played by Non Prior Knowledge strategies used to comprehend and to answer questions on that text.

The review of literature is divided into two main sections. The first section summarizes research on the role of Prior Knowledge in readers' comprehension of texts and their answering of questions. The second section discusses the strategies that readers use while reading and answering questions in texts.

Prior Knowledge

This section is divided into six subsections. These subsections are:

- (1) Historical background: Prior Knowledge as a concept
- (2) Schema theory and comprehension
- (3) Prior Knowledge and the answering of questions
- (4) Prior Knowledge and "incompatible" texts
- (5) Prior Knowledge and L2 readers
- (6) Summary on studies reporting the influence of Prior Knowledge on comprehension

Historical Background: Prior Knowledge as a Concept

Although schema theorists have been recently instrumental in directing attention to the role of Prior Knowledge in text comprehension, early writers about reading often mentioned the effect that a reader's experiences has on understanding what is read. A review of the literature illustrates writers' awareness over the years of the relationship between a reader's Prior Knowledge and comprehension of materials read.

One of the earliest authors on reading psychology was Edmund Huey, (1908). He described a practice that is still used today. Teachers recorded their students' experiences and used these "experience charts" as their students' early reading materials. He was therefore an early precursor to Sylvia Ashton-Warner's Key Vocabulary (1965), the Language Experience Approach to reading (Van Allen, 1978), and such contemporary "Whole Language" theorists as Kenneth Goodman

(1986). All have theorized that reading materials for which children already had background (prior) knowledge would help them better understand the text.

Some forty years after Huey, two eminent writers in the field of reading comprehension tests touched upon the important part played by Prior Knowledge in reading comprehension. The first writer was Arthur Gates (1947) who believed that "what each individual grasps depends upon his past experiences.." (p. 358). The second writer was William Gray (1941), eloquent in his description about Prior Knowledge as he stated that:

the chief resource (of the reader) is his background of related experiences. Only in so far as the reader's experiences relate in some form or other to the concepts or situation to which the author refers can the reader comprehend what is read (p. 901).

Seventy years after Huey discussed the thesis that Prior Knowledge and a reader's comprehension were inextricably bound, Pearson and Johnson (1978) stated that "comprehension is best understood by invoking the new to known principle. We understand what is new in the context of what is already known to us " (p.47).

Two well-known historians of reading instruction have added their support to those who believed in the strong and consequential relationship between Prior Knowledge and comprehension. Nila Banton Smith and Alan Robinson (1980) described how, "all individuals interpret, dependent upon the tasks, their backgrounds..." (p. 220).

Later contemporary writers have voiced their opinions about the close connection between Prior Knowledge and reading comprehension. In fact, one such writer, Frank Smith (1982), was emphatic that "Prior Knowledge ... is the source of *all* comprehension" (p. 68) (*italics added*).

Throughout this century, then, writers have commented on the importance of a reader's Prior Knowledge in comprehension processes. These have been developmental reading generalists, educators and reading psychologists. Schema theorists, however, have gone a step farther and attempted to explain how a reader's schema or knowledge structure specifically helps in one's comprehension of texts.

Schema Theory and Comprehension

Anderson is one of the best known proponents of schema theory. He suggests that a reader's schema represents one's organized knowledge of the world. For example, most readers have in their schema for dining out such elements or "slots" as making reservations, eating different types of food and even paying the bill.

Schema theory has been criticized for not giving an account of the large amount of detail in people's mental representation (Alba & Hasher, 1983). Anderson (1984) countered this criticism by creating what he termed "the concept of a weak schema" (p. 8) and how "much that passes

for general knowledge is actually produced as needed by retrieving specific cases" (p. 8).

Grabe (1991) refers to the criticisms of schema theory but acknowledges that schema theory provides "a useful metaphorical explanation for many experimental results" (p. 384). Schema theory, in the researcher's opinion, explains metaphorically the role played by Prior Knowledge in reading comprehension.

Anderson (1985) stated that, "a reader comprehends a message when he is able to bring to mind a schema that gives a good account of the objects and events described in the message" (p. 372). He illustrated this statement with the sentence, "The notes were sour because the seam split" a text in Bransford and McCarrell (1974). This sentence is incomprehensible unless a reader brings to mind a knowledge of bagpipes.

In an attempt to explain how a reader's schema aids in reading comprehension, Anderson proposed the following six functions of a reader's schema:

- (1) "A schema provides ideational scaffolding for assimilating text information" (p. 376).

Information in the text that fits an element or slot of a reader's schema is easily learned. For instance, a reader has in the schema of dining-in-a-fine-restaurant a slot or element about main entrees, and easily learns from a text the dish that is the main entree of the meal.

- (2) "A schema facilitates selective allocation of attention" (p. 376).

Anderson hypothesized that proficient readers pay close attention to what is important in a text. The structure of a schema provides these good readers with a tool for judging what is important.

- (3) "A schema facilitates editing and summarizing" (p. 377).

The structure of a schema gives a reader the criteria for selecting what is important from what is trivial when a text is summarized.

- (4) "A schema allows orderly searches of memory" (p. 376).

A reader uses a schema as a guide to remember the types of information that have to be recalled. For example, Anderson, Spiro and Anderson (1978) discovered that undergraduates who read a restaurant story significantly recalled more food and beverages than other undergraduates who read a supermarket story describing the same kinds of food and beverages in the restaurant story. Most readers have slots in their restaurant schema for the different kinds of food and beverages served in a meal. Most readers, however, do not have a well-defined schema with slots for the different kinds of food in a supermarket. Hence, specific food items in a restaurant are more easily remembered than food in a store.

- (5) "A schema permits inferential reconstruction of information" (p. 377).

A reader uses a schema and what *can* be remembered to make inference about the information which has been forgotten. Anderson provided the example of a person who could remember that the entree was a fish but had forgotten the wine that was served with it. This person's schema would help him/her to make the inference that the beverage served may have been white wine, since white wines are often served with fish.

- (6) "A schema enables inferential elaboration" (p. 376).

A reader's schema permits a reader to fill in gaps in a text. No text is completely explicit, and inferences are made with the help of a reader's schema. For example in the sentence, "Jane decided not to wear some metal jewellery because it could cause unnecessary delays" (Bransford, 1984, p. 385), a reader might infer that the "unnecessary delays" referred to problems caused by metal jewellery as it passed by metal detectors in airports. A reader uses a schema of metal detectors at airports to help infer and to elaborate information in texts.

Anderson (1984) thus proposed that a reader's repertoire of schema, or Prior Knowledge, helps a reader assimilate new information, pay attention to important facts, summarize essential points, infer, recall information in an orderly fashion, and remember forgotten facts. Two studies below provide illustrations of most of the six

functions of schema in comprehension listed above. However, these two studies do not necessarily demonstrate that persons with high knowledge of baseball make more inferences than those with low knowledge.

According to schema theory, among other functions Prior Knowledge enables people to assimilate new information, pay attention to important facts, summarize important points, and remember them in an orderly fashion. These hypothesized four functions of Prior Knowledge were illustrated in the study of Spilich, Vesonder, Chiesi and Voss (1979). Prior Knowledge of baseball was assessed by means of a test of forty-five items. All forty-six adult subjects listened to an account of a half inning of a baseball game. They summarized the account of the game and wrote down as much as they could remember. Finally they answered forty questions about the game. The group with low or little Prior Knowledge (LPK) recalled unimportant facts. The group of listeners with high Prior Knowledge (HPK) remembered information that was important to the goal of winning the baseball game. The HPK group re-told the sequence of the game in a more appropriate manner than the LPK group. As well the HPK group also remembered more information and answered more questions correctly than the LPK group. The results of this study indicated that Prior Knowledge helped listeners in this study assimilate new information, pay attention to important facts, summarize

essential points and re-tell information in an orderly fashion.

Subjects in the Spilich et al study described above had listened to an account of a half-inning baseball game, but in another study Grade Seven and Eight students read a text adapted from the Spilich study (Recht and Leslie, 1988). These sixty-four Grade Seven and Eight students were of either high or low reading ability as measured by the SRA Achievement Test. Prior Knowledge of baseball was assessed with a multiple-choice test that was read to the students. The baseball text was divided into five parts. After reading a part of the discourse (text) students re-enacted the actions of the baseball players by moving figurines on a board. They then verbally described what had happened in that part of the text. After reading the whole text, they wrote a summary of it, and then sorted twenty sentences according to their importance in the text. There were no significant differences between the two reading groups but there were significant differences between those students with high Prior Knowledge of baseball and those with low Prior Knowledge. Students with high Prior Knowledge re-enacted the actions, re-told the information, summarized the events and rated the importance of the sentences more like seven baseball experts who did the same tasks. Students with low Prior Knowledge did not perform as well as those students with high Prior Knowledge on these tasks.

In these two studies, persons who had little knowledge were less able than those with much knowledge of baseball to assimilate new information about the half-inning of a baseball game (Recht and Leslie, 1988; Spilich, Vesonder, Chiesi and Voss, 1979). Again, persons who were knowledgeable about baseball recalled information that was important to the goal of winning the baseball game. They also rated more accurately the importance of the sentences. They re-told the sequence of events in an orderly fashion.

Apparently Anderson's hypotheses about the role of schemata/ Prior Knowledge/ scripts were supported by the two studies previously described. They do not, however, support the idea that readers' Prior Knowledge enable them to make inferences from the text.

Some research does provide examples of students using their Prior Knowledge to answer inferential and other types of questions.

Prior Knowledge and the Answering of Questions

Four studies were found that demonstrated the role that Prior Knowledge plays a part when readers answer questions. Each study adds to our understanding of the relationship between what a reader knows (i.e. has as Prior Knowledge) and how different types of questions are answered.

Prior Knowledge affects a reader's answering of Textually Explicit, Textually Implicit and Scriptally Implicit questions independent of intelligence. Johnston (1984) pre-tested the intelligence of two hundred and seven Grade Eight students with the IPAT Culture-Fair Test. Prior Knowledge was measured with content-specific vocabulary tests. Students then read three texts and answered eighteen multiple-choice Textually Explicit, Textually Implicit and Scriptally Implicit questions either with the text available to them or unavailable. Prior Knowledge accounted for 3.5% of the within-subject variance. Johnston concluded that Prior Knowledge influenced a reader's comprehension of texts independent of the effects of intelligence and other between subject experimental variables to test the effect of the availability of texts. Johnston reported on the effect of the availability of texts while students were answering questions. When the text was unavailable for a reader to look back on, there was a pronounced drop in the performance on Textually Explicit questions about unimportant aspects of the text. With no text available for "lookbacks", performance on Scriptally Implicit Questions improved. Johnston surmised that this improvement was due to the students' reluctance to use their Prior Knowledge when text was available to be consulted while answering questions.

There is further evidence that the amount of a reader's Prior Knowledge affects a reader's answering of questions. Pearson, Hansen and Gordon (1979) studied twenty

Grade Two students who were pre-tested on their knowledge of spiders before they read a story relating to spiders. There was no significant difference in either reading ability or intelligence between the ten students with the highest and the ten students with the lowest Prior Knowledge scores. All twenty students read the text on spiders and orally answered six Textually Explicit and six Scriptally Implicit questions. The high-knowledge group out-performed the low-knowledge group; and the effect of Prior Knowledge was more pronounced for the Scriptally Implicit than for the Textually Explicit questions. Prior Knowledge was clearly demonstrated as being important in the answering of Scriptally Implicit questions. Apparently having an available script helps readers in answering questions.

The amount and the quality of a reader's Prior Knowledge influence the answering of questions. A reader's Prior Knowledge may be accurate, inaccurate or missing. A student's performance in question-answering depends, then, on whether the information a student already knows (his script) is correct, incorrect or missing. This interaction between the quality of a reader's Prior Knowledge and question-answering is well illustrated in a study by Lipson (1981). Fourteen pairs of average and poor Grade Three students were matched according to school, sex, age, intelligence and mathematics achievement. There was a Prior Knowledge pre-test consisting of pairs of sentences some of which were used later in the post-test after the subjects

had read the passages. No significant differences were found in the pre-test scores between the two reading groups. There were no significant differences in the performance of the two reading groups in their answering of inferential questions. There were, however, differences depending on whether the Prior Knowledge pre-test revealed that readers had correct, incorrect or missing information about the pre-test items. When a reader correctly answered a pre-test question the overall mean probability of a correct response on that same question at post-test was .85. When a reader responded to a pre-test question with the answer, "not known", the probability of a correct answer on that same question at post-test dropped to .75. When a reader inaccurately answered a pre-test question, the conditional probability of a correct answer to that same question at post-test fell to .65. Lipson felt that readers' inaccurate Prior Knowledge did affect their answering of questions. In a later article (1984), she commented on this "failure to resolve conflicts between existing knowledge and new information" (p. 763) and of its detrimental effect on a reader's ability to answer questions correctly.

Students' reading ability does seem to interact with the amount and quality of their Prior Knowledge. This idea was the focus of a study by Holmes (1983) where fifty-eight proficient and less proficient Grade Five readers' Prior Knowledge was pre-tested. Based on their scores they were classified as readers with more (MK) or less (LK) Prior

Knowledge. Their answers to the pre-test also were recorded as correct, inaccurate and missing. The effect of reading ability was evident in the answering of Textually Implicit Questions when students' prior information about that question was accurate. Proficient MK readers did significantly better than less proficient MK readers. As well, even proficient LK readers scored significantly better than less proficient LK readers.

The results were different when students in Holmes' study had inaccurate information and had to answer Textually Implicit questions. The effect of Prior Knowledge was evident. Proficient MK readers out-performed proficient LK readers. Again less proficient MK readers did better than less proficient LK readers.

When students in Holmes' study lacked prior information for answering questions, the influence of reading ability was again evident. Proficient MK readers performed significantly better than less proficient LK readers on Textually Explicit and Textually Implicit questions.

Holmes (1983) thus maintained that when a student answers Textually Explicit and Textually Implicit Questions a complex interaction occurs between the amount and quality of Prior Knowledge on one hand and reading ability on the other hand. For instance, when Prior Knowledge is accurate, reading ability is influential in a student's performance in answering Textually Implicit questions. When Prior Knowledge

is lacking, general reading ability affects a student's performance in answering both Textually Explicit and Textually Implicit questions. When a reader's information is inaccurate Prior Knowledge appears to be more influential than reading ability in a reader's answering of Textually Implicit questions.

The four studies cited in the preceeding paragraphs demonstrate that readers' Prior Knowledge plays a significant part in their answering of Textually Explicit, Textually Implicit and Scriptally Implicit questions (Holmes, 1983; Johnston, 1984; Lipson, 1981; Pearson, Hansen and Gordon, 1979). Prior Knowledge affects a student's answering of questions independent of the effect of intelligence (Johnston, 1984). The amount of a reader's Prior Knowledge influences a reader's performance in question-answering (Pearson, Hansen and Gordon (1979). Another important factor to consider is whether Prior Knowledge might be accurate, inaccurate or missing (Lipson, 1981). Reading ability appears to interact with Prior Knowledge that is accurate or missing. When prior information to answer a question is accurate or lacking, proficient readers perform better than less proficient readers with equivalent Prior Knowledge pre-test scores. When information to answer a question is inaccurate, or conflicts with what is in the text, readers with higher pre-test knowledge scores perform better than those with lower pre-test scores (Holmes, 1983).

Prior Knowledge and "Incompatible" Texts

There is evidence from five studies that readers' comprehension suffers when their Prior Knowledge does not match that of the writer of the text. Mention has previously been made of inaccurate Prior Knowledge in Lipson's study (1981) and of the decreased probability of a reader answering a question correctly.

The first study is the often cited investigation by Bartlett (1932). He had his English subjects listen to and re-tell a Native Indian story called, "War of the Ghosts". Their re-telling included distortions of certain incidents which indicated that they were attempting to fit the story events into their own cultural schemata.

Bartlett's subjects did not include Native Indians listening to an English story. A study by Steffensen, Joagdev and Anderson (1979) did compare two groups reading about their own and another group's culture. Nineteen Indian and twenty American adults were matched in age, sex, educational standard and academic specialization. They read two letters describing typical Indian and American weddings. They wrote their recall of the materials read and answered five questions on each of the letters. The Americans and Indians recalled more ideas from the letter describing the native wedding from their own culture and remembered fewer ideas from the culturally foreign letter. They made more

elaboration of information about their own culture and more distortions of information about the foreign culture. For example in re-telling the sentence in the American letter, "Pam was going to wear her grandmother's wedding dress" (p. 20), an Indian subject wrote, "She was looking alright (sic) except the dress was too old and out of fashion". However, an American elaborated, "Pam's mother wants Pam's daughter to carry on the tradition of wearing the family wedding gown" (p.20). Apparently, Indians did not understand that it was an American tradition to wear one's grandmother's wedding gown.

That a reader's knowledge of the cultural content of texts helps or hinders a reader's performance in question-answering is also illustrated in a study by Johnson (1981). Forty-eight Iranian and nineteen American university students read an Iranian and an American folktale in either an adapted simplified version, or an unadapted version. They answered multiple-choice Textually Explicit and Textually Implicit questions. There was little variance in the Americans' answers to the different types of questions, but Iranian students did significantly better in answering the Textually Explicit questions on the Iranian folktale than on the American one. There was no difference between the Iranian students who read the adapted Iranian tale and the other students who read the unadapted version. However, on the Textually Implicit Questions the Iranian students did better on the American folktale than on the Iranian one.

Johnson explained this reversal of scores by surmising that lack of familiarity with the American folktale led the Iranian students to read the text carefully but they did not read the Iranian text as closely because they felt they were familiar with the cultural content. However, Johnson's explanation of the reversal to expectations could be explained in a different way. Johnson remarked that Iranians' answers to questions on the Iranian text contained "culture-based errors", that is that their answers were based on their culture which was different from hers.

In texts that are not specific to a culture, the effect of Prior Knowledge also seems to be evident (Alvermann, Smith and Readance, 1985). In their study, fifty-six Grade Six students of average reading ability were pre-tested on their Prior Knowledge of rattlesnakes and of sunlight. There was no difference in the subjects' pre-test scores. Half of the students were required to activate their knowledge about rattlesnakes and sunlight by writing what they knew about these two topics, while the other half activated their knowledge of topics unrelated to the two passages. After reading the texts they all answered the same multiple-choice questions. There was no significant difference in students' performance in the passage about rattlesnakes. However, subjects who did not write about their Prior Knowledge of sunlight recalled more ideas from the "sunlight" text than those who had activated their prior knowledge. They also chose more correct answers to questions

which tapped the information that was highly incompatible with most students' Prior Knowledge. Those who had activated their Prior Knowledge answered fewer of these questions correctly. The authors concluded that readers' Prior Knowledge which is incompatible with what is implied in the text may hinder readers in their answering of questions.

Peeck, vanden Bosch and Kreupeling (1982) produced results that do contradict the Alvermann study. In their study sixty-eight Dutch Grade Five students read a text about a fictional American fox. This text contained three statements that were incongruent with the children's Prior Knowledge about foxes. Half of the students were asked to write about their knowledge of foxes; the other half wrote their knowledge about an unrelated topic. After reading the text, they wrote their recall as accurately as possible and a week later took a multiple-choice test. The group which activated knowledge about foxes out-performed the group which did not activate this knowledge. The "activators" answered more questions correctly and remembered more information that was incongruent with their Prior Knowledge. The researchers concluded that children's incongruent Prior Knowledge did not hinder their comprehension of the text. A possible explanation for the differences in the results between these two studies may be found in the comments by Alvermann, Smith and Readance (1985). These researchers' instructions to the subjects in their study were "If you do not remember exactly, then write what you do remember".

Later these researchers stated that "Evidence from the post-session questionnaire suggested that at least five students did rely on previous knowledge when they had difficulty recalling textual information" (p. 434). On the other hand, Peeck, vanden Bosch and Kreupeling (1982) had asked the children to "reproduce the text as accurately as possible" (p. 773).

It was previously noted that in Johnson's study that students who read familiar information might have paid less attention to the text than when they read unfamiliar content. They did less well in answering Textually Implicit questions on familiar texts (Johnson, 1981). The order in which familiar and unfamiliar information was presented in a text also appears to affect a reader's recall of the unfamiliar information (Davey and Kapinus, 1985). In their study ninety-eight Grade Eight students of average or high reading ability were pre-tested on their knowledge of computers. They read a text in one of two versions. In one version the familiar information was presented first (FF) followed by the unfamiliar information. In the second version the order of presentation was reversed with the unfamiliar information presented first (UFF). All students took the immediate and the delayed multiple-choice question tests. With reading ability as a covariate, two significant interactions were discovered. High Prior Knowledge students obtained significantly better scores reading the (UFF) version of the text than other high knowledge students who

read the (FF) version. The second significant interaction was that the (UFF) version produced greater scores than the (FF) version only in the immediate test condition and not in the delayed test condition. Davey and Kapinus commented on:

the potentially inhibitory effects of high Prior Knowledge. These high Prior Knowledge readers may however over-rely on their Prior Knowledge when confronted with highly familiar material and therefore not continue to integrate new ideas with their well-developed Prior Knowledge systems. (p. 150).

The above comment made by Davey and Kapinus could have been applied to the Iranians reading the Iranian text in the Johnson study (1981).

With the exception of the Peeck study (1982) four studies have demonstrated that a reader uses Prior Knowledge which may not match the content of the text (Alvermann, Smith and Readance; Bartlett, 1932; Johnson, 1981; Steffensen, Joag-dev and Anderson, 1979); a reader appears to distort what is in the text to fit a schema; (Bartlett, 1932; Steffensen, Joag-dev and Anderson, 1979) a reader is unable to answer correctly questions which tap information that conflict with previously held beliefs or knowledge (Alvermann, Smith and Readance, 1985; Johnson, 1981); and a reader relying on Prior Knowledge may not pay attention to what is in the text (Davey and Kapinus, 1985).

Prior Knowledge and L2 readers

Some researchers believe that titles and pictures accompanying a text may help a reader activate Prior Knowledge of the content of the text. Two studies have investigated how L1 and L2 readers make use of the text and their Prior Knowledge when it is activated by titles and pictures, or what some authors call the practice of providing readers with a "context".

The first study, carried out by Carrell (1983), sampled one hundred and eight L1 and L2 university students. The L2 students were from classes at the advanced and intermediate level in English as a Second Language. All students read two texts, one about the familiar topic of washing clothes, the other text about a novel way of serenading a loved one. There were four experimental conditions to the study. One provided context in the form of a picture and a title and was written in language that was explicit with clues as to the content of the passage. For instance the word "clothes" was used instead of the more obscure word "things". A second condition used texts that had pictures and titles but the language provided few clues as to content. The third condition used texts without any context clues from pictures or titles but the language was explicit. The fourth condition used texts that provided neither pictures nor titles and was written in language that was obscure. All students wrote their recall of the texts.

L1 readers were affected by pictures and titles being more helpful than not having them provided. Familiar content was better recalled than unfamiliar content, and obvious language resulted in better comprehension than obscure language. However, with the L2 readers, only familiarity of content was a significant factor in the re-telling of a text by the advanced level L2 students. No effect was found for the intermediate L2 readers. Carrell commented that neither group of L2 readers appeared to:

utilize context or textual clues. They are not efficient top-down processors, making appropriate predictions based on context, nor are they efficient bottom-up processors, building up a mental representation of the text based on lexical information in the text (p. 199).

In the second study, Lee (1986) found slightly different results to Carrell (1983). In this study thirty-two Spanish as a Foreign Language students read in Spanish. Students were divided into four groups and each group read the same two texts as Carrell's (1983) in just one of the four conditions as described previously in Carrell's study. However, they wrote their recall in their native language, English. Unlike the L1 readers in the Carrell study, familiarity of content and obviousness of language did not have separate effects, but interacted with one another. A significant effect was found in the recall of those students who read the familiar text written in obvious language with context provided. Lee concluded that these students did not "interact with text in the same way that native readers do"

(p. 353). It was unfortunate that there were no Spanish readers reading the two texts in their first language, Spanish, to corroborate this statement.

Other researchers have discovered the facilitative effect of Prior Knowledge on those readers who are more able to process the language of the text. One such research was the study by Levine and Haus (1985). In this study ninety high school students taking Spanish as a Foreign Language Course received a pre-test in English on their Prior Knowledge of baseball. They then read in Spanish, a text about a Major League baseball game, and answered twelve multiple-choice questions. On the four Textually Explicit questions there was a significant difference between the high-knowledge group and the low-knowledge group. On the eight Scriptally Implicit questions there was a highly significant interaction with Prior Knowledge helping the more advanced Year Three students than the less advanced Year Two learners. Levine and Haus (1985) did not, however, compare L1 and L2 students and the effect of Prior Knowledge on their comprehension of texts.

Three studies which used L1 and L2 subjects in their investigations have been conducted. Vahid-Ekbatani (1981) had twenty American and forty Iranian students read three different texts, one about an evening with Mr. and Mrs. Nixon (American culture), a second describing a rich Iranian merchant marrying a third wife (Iranian culture), and a third about a person observing waves (Neutral). Twenty

Iranians read the three texts in English and twenty read them in their native language, Farsi. They all answered five literal and eight inferential multiple-choice questions on each text. On the neutral and American texts the American students did better than the Iranians who read in Farsi. On the Iranian text, the Iranians out-performed the Americans. There were no differences between the two Iranian groups in the neutral and the Iranian texts. However, in the American text, the Iranians who read in Farsi were superior to other Iranians who read this same text in English. Vahid-Ekbatani felt that "when concepts presented in a text are unfamiliar to the reader, language discrepancies become more vivid" (p. 57).

In Vahid-Ekbatani's study L2 students were able to comprehend familiar texts but seemed to be doubly handicapped when they read an unfamiliar passage. This result was also found in a study conducted by McCagg (1984). In this study students from two different cultures performed different reading tasks. One hundred and one American university students and two hundred and thirty-two Japanese university students took part in this study. The language ability of the Japanese students was assessed by a grammar test. All students read each of three texts. One text was about fears during Hallowe'en caused by poisoned Tylenol tablets (American text). The second was about the role of a well-known Japanese kindergarten in helping Japanese children enter Tokyo University (Japanese text). The neutral

text was about the death of a Korean boxer. There were three versions of the three texts. In the first version the main idea of the text was implicit and the connections between sentences were implicit. In the second version the main idea was implicit but the connection between sentences was explicit and Prior Knowledge, which was required to understand the text but which the Japanese students might not have, was provided. In the third version the main idea was explicit and the connections between sentences and Prior Knowledge were explicitly stated. After reading the three texts in one of the three versions, students wrote summaries in their native languages. Japanese students could make inferential connections in the Japanese text. In this text Japanese students with lower English proficiency matched the performance of other Japanese students with higher English proficiency. Adding explicit links and background knowledge to this familiar text did not significantly improve the comprehension of the L2 readers. However, in the unfamiliar American text, lower proficiency Japanese students were more able to identify important text information only in the explicit version of the text. A similar improvement in performance for all L2 readers occurred in the explicit version of the neutral text. On the other hand, there were no significant differences for L1 readers between the implicit and explicit versions of this neutral text, or in the American and Japanese texts.

The effect of L2 readers' Prior Knowledge on their comprehension of familiar texts is evident in the studies of McCagg (1984) and Vahid-Ekbatani (1981). It was also obvious in these two studies that unfamiliar texts hamper L2 readers more than they do L1 students. Both studies used culturally familiar and unfamiliar texts.

In a third study, Jenkins (1987) compared L1 and L2 readers using academic texts. Fifty-two native English (L1) readers and sixty non-native (L2) university students read two science texts and two linguistic texts. The students were majoring either in Science or in Linguistics. They all answered Textually Explicit, Textually Implicit and Scriptally Implicit questions on each text. There was a Prior Knowledge effect with scientists scoring higher than linguists on the science texts, and the reverse occurring with linguists scoring higher than scientists on the linguistic texts. L1 readers did not outscore L2 readers when the latter read texts in their familiar domain. Jenkins maintained that "Prior Knowledge is powerful enough to overcome language problems" (p. 93). Language proficiency was, however, a factor in the answering of Textually Explicit and Scriptally Implicit questions. In answering these two types of questions, L1 readers performed better than L2 readers. However, in the Textually Implicit questions the L2 science majors were equal to the L1 science and linguistic majors. Jenkins felt that with these subjects:

reading skills and strategies were implicated in the comprehension process. Furthermore if Prior Knowledge is high, the task of untangling the syntax in order to comprehend TI (Textually Implicit) questions would not be so difficult (p. 73).

In this same study, Jenkins described the interaction of reading ability and strategies used in answering questions. She analyzed the question-answering performance of ten proficient and ten less proficient readers. Among the ten proficient readers were eight L1 readers (six scientists and two linguists) and two L2 readers (both scientists). Among the ten less-proficient readers were nine L2 readers and one L1 reader. Eight of the ten less-proficient readers were linguists. Jenkins came to the conclusion that "good readers had high enough verbal ability to take advantage of the bottom-up input (of the text) regardless of the degree of familiarity of the material" (p.87). She also believed that:

it seems more likely that low Prior Knowledge inhibited the reading performance of the poor group in the first place, and that they did not have sufficiently high language proficiency to compensate (p. 91).

The studies summarized indicate that L2 readers are able to use Prior Knowledge to overcome language problems when the content of the text is familiar (Carrell, 1983; Lee, 1986; Levine and Haus, 1985; McCagg, 1984; Vahid-Ekbatani, 1981). If the text is unfamiliar L2 readers appear to be more handicapped than L1 readers (McCagg, 1984; Vahid-

Ekbatani, 1981). Jenkins (1987) believed that reading ability and strategies interact with L2 readers' Prior Knowledge in their comprehension of texts.

Summary Of Studies Reporting The Influence Of Prior Knowledge On Comprehension

As stated earlier, throughout history writers have acknowledged the part played by Prior Knowledge in reading comprehension. They stated their belief that a reader's comprehension of texts is dependent on what one knows (Huey, 1908; Gates, 1947; Gray, 1941; Pearson and Johnson, 1978; Smith, 1982).

According to schema theory, Prior Knowledge enables a reader to focus on and summarize what is important in the text. Schema helps a reader assimilate new information, infer and recall information in an orderly fashion (Anderson, 1984). These "notions" have been illustrated in the research conducted by Spilich et al (1979) and by Recht and Leslie (1988).

However, when a reader's Prior Knowledge conflicts with the Prior Knowledge that the writer of the text assumes the reader has, then comprehension suffers for that reader (Alvermann, Smith and Readance, 1985; Johnson, 1981). Furthermore, a reader may distort information in the text to fit an existing schema (Bartlett, 1932; Steffensen, Joagdev and Anderson, 1979).

Apparently, the accuracy of a reader's Prior Knowledge affects comprehension. The probability of correctly answering question decreases when a reader possesses incorrect prior information (Lipson, 1981).

First (L1) and Second Language (L2) readers do not differ in their performance on comprehension tasks when they read "familiar" texts for which they have high Prior Knowledge (Carrell, 1983; Lee, 1986; McCagg, 1984; Vahid-Ekbatani, 1981). L2 readers, though, are at a greater disadvantage than L1 readers when they read "unfamiliar" texts for which they have low Prior Knowledge (McCagg, 1984; Vahid-Ekbatani, 1981).

Proficient readers appear to make better use of their Prior Knowledge than less proficient readers even when both groups possess equivalent amount of prior information (Holmes, 1981). However, there is a scarcity of research about average readers' use of prior knowledge. Jenkins (1987) believed that reading ability and readers' strategies also play a part in their performance in comprehension tasks and readers' strategies in comprehending and answering questions on texts are the focus of the next section.

Strategies Used in Reading and Answering Questions on Texts

This section about strategies, or the actions that

a reader uses in comprehending and answering questions on texts, is divided into three subsections. They are:

- (1) Students' reading strategies
- (2) Students' question-answering strategies
- (3) A summary on studies about reading and question-answering strategies

Students' Reading Strategies

Strategies have been defined differently by various writers. van Dijk and Kintsch (1983) considered strategies to be working hypotheses which are derived from textual information received in the early stages of reading. These working hypotheses may be confirmed or rejected in the later stages of reading. Paris, Lipson and Wixson (1983) stated that strategies imply "intentionality and purpose on the part of the learner" (p. 294). In the present study strategies are cognitive actions used by the readers to help them understand or comprehend the text or to answer questions on the text.

Researchers have investigated students' reading strategies or actions to help them comprehend texts. Various methods have been employed in research studies to elicit the cognitive processes of students while reading texts. Students are sometimes questioned about their strategies or else a hypothetical case is put to them and they are asked what strategies they would use. Two sources

of data are used in this present study and these are described in the following two sections. One is the "Think Out Loud" (T-O-L) methodology, and the other is the use of a Rating Scale.

"Think-Out-Loud" (T-O-L) Methodology

The "Think-Out-Loud" (T-O-L) or verbal report methodology is a form of introspection where researchers ask their subjects to verbalize their thoughts. Students express their thoughts while they are performing a task, for instance, reading a sentence. Or perhaps students read a section of the text and then retrospectively report on the thoughts they had while they were reading. T-O-L is a methodology with a long history.

Pritchard (1990b) traced the origin of introspection, or the mind observing its own processes, to both Aristotle and Plato. However, concurrent verbal reports or verbalizing while doing a task began with "systematic experimental introspection" of classical psychology (Titchener, 1912. p. 432), and the belief that certain psychological processes were only accessible through self-observation. At that time trained subject-observers verbalized their thoughts in laboratory studies.

Ten years later the responsibility of commenting on their thoughts shifted from the subjects to the researcher, and naive untrained students were used. In Buswell's

pioneering study (1926) elementary school students gave verbal reports while solving arithmetic problems. Twenty years later Duncker (1946) used T-O-L's to investigate the problem solving processes of college students. T-O-L's were also used by Bloom and Broder (1950) with high and low achieving college students solving verbal problems.

With the decline of behaviorism, verbal reports or T-O-L's became an important part of research in cognitive psychology. There was criticism of this method (Nisbett and Wilson, 1977), but most writers (Afflerbach and Johnston, 1984; Meichenbaum et al, 1985; White, 1980) agree with Ericsson and Simon (1980) that:

verbal reports elicited with care and interpreted with full understanding of the circumstances under which they are obtained are a valuable and thoroughly reliable source of information about cognitive processes (p. 247).

Verbal reports or T-O-L's have been widely used in reading research. A number of studies relevant to students' use of Prior Knowledge are described in the following paragraphs.

T-O-L's have been used with children as young as those in Grade Two (Alvermann, 1984). Thirty Grade Two children in her study were given practice in T-O-L. They read aloud and verbalized their thoughts after each sentence. While they read the setting of the story, they reported making more inferences and identifying with the protagonist in the story. As they read more of the story, the frequency of these two strategies decreased. It is

interesting to note how Prior Knowledge forms part of Alvermann's definition of inferences as "an interpretation of story resulting from having pieced together information stated in the text but not necessarily free of one's prior knowledge" (p. 187).

The strategies that students use while reading narrative and expository texts may be different. Two studies have investigated this. The first study was by Hare and Smith (1982). The retrospective verbal reports of twenty-nine Grade Six students indicated that re-reading was the most common strategy used in both kinds of texts. The second most common strategy was imaging in the narrative and changing reading speed in the expository passage. A small percentage of the T-O-L's (6% in the narrative, and 17% in the expository) referred to students' trying to assimilate the text to their Prior Knowledge. In the second part of the study twenty-seven Grade Seven students talked about their thoughts after reading each of the five sections of the narrative and expository texts. Re-reading was again the most common strategy mentioned in both texts. Approximately the same percentage of the strategies reported (9% in the narrative, 11% in the expository) were of students' assimilating text with their personal experience.

A second study that investigated students' strategies while reading narrative and expository texts was carried out by Langer (1986). Her subjects were above-average readers. She used sixteen eight-year-olds, thirty-six eleven-year-

olds, and fifteen fourteen-year-olds. Half of the students reported retrospectively on their thoughts and the other half gave concurrent verbal reports while reading two stories and two expository texts. The highest percentage of their T-O-L"s referred to their use of their Prior Knowledge (45.9% for the eight-year-olds, 52.8% for the eleven-year-olds, and 40% for the fourteen-year-olds). Less frequently used strategies were questioning, hypothesizing, assuming, giving evidence and validating their interpretations. Hypothesizing was used more often in the narrative passages, and questioning was used more in the expository texts. Langer felt that the strategies described above are "all part of the thoughtful reasoning behaviors that take place when readers ... make sense" (p.75) of the text they are reading.

The two studies reported above which investigated students' strategies while reading narrative and expository passages yield quite different results. One reason may have been because the foci of the studies were different. Langer (1986) was interested in the "constructive meaning-making aspects of reading" (p. 9). Hare and Smith (1982), on the other hand, were investigating how students tried to remember the content of texts.

The task readers face while reading influences the strategies they might use. For example, in the study conducted by Hare and Smith (1982) students used the

strategies of re-reading, imaging and changing reading speed to help them remember the content of texts.

Three other studies have been found which illustrate how readers' strategies are affected by the task they have to perform. Garner and Alexander (1982) used thirty undergraduate students who read an article to prepare to answer a question. After each of the four sections of the text, they had to stop and verbalize their thoughts. The students reported using a number of strategies including tying their personal experiences to the text. But the strategy that was significantly related to their performance on the question was their formulation of questions in anticipation of the one they thought would be asked.

Powell (1988) investigated strategies used by students who faced different academic tasks. Nine proficient Grade Six students read twelve short texts. They had to perform four tasks and either report their thoughts concurrently or retrospectively. The four tasks were to answer multiple-choice questions, to re-tell the texts, to fill in the blanks (cloze) in the texts, or just read the texts. These four tasks produced differences in the frequency students reported that they used their Prior Knowledge. Use of Prior Knowledge ranged from 44% for the multiple-choice task, 30% for the reading task, 18% for the cloze task, to 17% for the re-telling task. In three of the four tasks, use of Prior Knowledge was the most frequently reported strategy. Other strategies less frequently used

were re-reading, paraphrasing, making predictions, visualizing, stating a failure to understand, changing reading rate, confirming or disconfirming predictions and speculating.

Anderson (1989) conducted the third study under review in this area. He investigated strategies which students used while they read to perform academic tasks. In his study, twenty-eight Spanish-speaking college students took a standardized test under normal conditions and a month later took the alternate form of the test under timed condition but stopped after each test passage to report retrospectively on their thoughts and test-taking strategies. They also read two textbook passages and gave retrospective T-O-L's on their reading strategies and the strategies they used in answering multiple-choice questions on those texts. Prior Knowledge was not a frequently used strategy (2% in the standardized test and 1% in the textbook passages). The most common strategy for the standardized reading test passages was relating a sentence to a previous portion of the text. In reading the textbook passages the more frequently used strategies were re-reading, reading ahead, and relating a sentence to personal experience (Prior Knowledge).

The three studies above investigated students' strategies while reading to perform different tasks (Anderson, 1989; Garner and Alexander, 1982; Powell, 1988) and showed that different tasks produce different

frequencies in students' reported use of the same strategy. For example, the frequency of reported use of Prior Knowledge varied according to the tasks students had to do (Powell, 1988). Students also were aware of the task they faced and their most significant strategy was closely related to that task; for instance, self-questioning to prepare for a question (Garner and Alexander, 1982). The emphasis on a timed test caused readers to simply match sentences and questions, while the more leisurely textbook reading task permitted readers to re-read, read ahead and relate to their personal experiences (Anderson, 1989).

As texts become more difficult, readers have reported different frequencies of the same strategies they might use while reading easier texts. Two studies demonstrated this change in frequency of strategies used. The first was by Hare (1981). Twelve proficient and twelve less proficient college readers read an article for which they all had high knowledge, and a second article for which they had low knowledge. In the high-knowledge article, 12.5% of proficient readers' T-O-L's were references to their personal experiences while less proficient readers mentioned their experiences in 10% of their verbal reports. In the low-knowledge article no references were made by either reading group to their personal experiences. As well, the total number of strategies reported decreased from the high-knowledge to the low-knowledge article.

The other study was conducted by Bednar (1987) who also investigated readers' strategies as they read texts of increasing difficulty. In her study, thirty average Grade Seven students read three passages, one at their independent level of reading, the second at their instructional, and the third at their frustrational level. They verbalized their thoughts after reading each passage, and they sorted thirty-nine strategies into six categories according to how often they used them. After reading at their independent level, 12% of their T-O-L's referred to their Prior Knowledge. The percentage dropped to 3% after they read at their instructional level. After reading at their frustrational level, the percentage of reference to Prior Knowledge was 0%. When they sorted statements about their use of Prior Knowledge the frequencies of reported use were similar to their T-O-L's after they read at their different reading levels.

These two studies investigating students' strategies while reading texts of variable difficulty are relatively similar in their results (Bednar, 1987; Hare, 1981). All the students investigated reported using the same strategy less frequently when a text was more difficult than when a text was easier.

Students with different reading abilities may use the same strategies as their superior peers, but they may use them with different frequencies or different rate of success. Two studies have compared proficient and less

proficient readers' strategies. The first one was by Olshavsky (1976-77), who was a pioneer in the use of concurrent T-O-L's in reading research. In her study, twenty four proficient and less proficient Grade Ten students read a story and verbalized after each sentence. Proficient readers were significantly different from less proficient readers in their use of Prior Knowledge although the percentage of students' reference to Prior Knowledge was low (1%). Proficient readers also made more use of context to define a word. Less proficient readers, on the other hand, stated more often that they failed to understand the text.

In a later study by Neuman (1990) no significant differences were found between proficient and less proficient Grade Five readers' inferencing strategies as they read two mystery stories. However, there were significant differences in the frequencies of errors made by less proficient readers. Analysis of errors made by less proficient readers revealed that these readers showed an "overreliance on background information to the detriment of considering all textual information" (p. 272).

There are a few studies investigating the strategies used by average readers in processing texts. A study by Pereira (1991) investigated strategies used by ten Grade Seven average-to-proficient readers. They gave concurrent verbal reports while reading each sentence. The most common "moves" or actions verbalized by her subjects were making hypotheses and inferences (35% of total "moves" reported)

and judgments on information in the passage (27% of total "moves" reported). Pereira classified inferences and hypotheses under the category of reasoning or "How can I figure this out?" (p.90). She classified making judgments under the category of evaluating or "How good/valid/true is this?" (p. 90). Some of her subjects used a different approach to the text. They defined, explained concepts or restated and paraphrased words in order to clarify the text (22% of total "moves" reported). Pereira classified defining, explaining and paraphrasing under the category of clarifying, or, "What does this mean?" (p. 90). Her subjects thus reported using reasoning, evaluating and clarifying "moves" or actions. The researcher in this study used Pereira's labels of "explaining" and "evaluating" as two of the categories of strategies employed by students in the present study.

Block (1986) found that Prior Knowledge was not used by less proficient readers with the same effect. She investigated the strategies used by nine non-proficient L1 and L2 college readers as these students read a first text and then gave concurrent verbal reports. Reading a second text, they retrospectively reported their thoughts. There were no differences between the types of strategies used by these L1 and L2 readers. However, Block noticed that some readers used their Prior Knowledge sparingly. These students did link their Prior Knowledge associations with the information they read in the texts, and they focussed on the

main ideas in the texts. These readers she labelled "integrators". The other type of readers relied more often on their personal knowledge to develop an interpretation of the text, and they focussed on details rather than on the main ideas. These readers Block labelled as "non-integrators".

The two studies cited above indicate that readers of different reading ability may use the same or different strategies (Neuman, 1990; Olshavsky, 1976-1977). Readers of the same reading ability may use different strategies (Pereira, 1991), or the same strategy with different effect (Block, 1986).

Two studies have specifically investigated the reading strategies of L1 and L2 readers. Padron, Knight and Waxman (1986) had thirty-eight Grade Three and Grade Five students read a text at their instructional reading level. Fifteen of these students were L1 readers and the rest were L2 readers. They gave concurrent verbal reports after stopping at regular intervals in the text. The T-O-L's of L1 students indicated that they were concentrating, noting details and generating questions more often than L2 readers were. No L2 readers described the strategies of imaging, searching for important details or predicting outcomes. L2 readers often expressed their concern about the questions their teachers might ask them. Both L1 and L2 readers did not frequently report that they were assimilating the

passage with their personal experiences (9% for L2 readers, 7% for L1 readers).

Pritchard (1990a) also compared the reading strategies of L1 and L2 readers. He used sixty proficient Grade Eleven readers, thirty students were from a small midwestern American town and thirty students were Palauans from a small Pacific island. All readers Thought-Out-Loud after reading individual sentences of two letters describing typical American and Palauan funerals. Their T-O-L's revealed that they were frequently attempting to understand individual sentences through re-reading, paraphrasing and use of context clues (46% for the Americans, 59% for the Palauans). Next in frequency came the strategy of using their Prior Knowledge. American students made more references (27%) to their Prior Knowledge than the Palauan students did (18%).

In summary, verbal report or T-O-L's have been used for a long time. They have been used with readers as young as those in Grade Two (Alvermann, 1984). In all the fourteen studies cited above readers have reported that they use their Prior Knowledge or refer to their personal experiences or make inferences based on Prior Knowledge to comprehend written texts. Readers attempt to make sense of the text and show evidence of thoughtful reasoning behaviors (Langer, 1986; Pereira, 1991).

Strategies that readers use while comprehending texts may differ according to the nature of the texts read (Hare and Smith, 1982; Langer, 1986). Strategies are less frequently reported when students read a more difficult text than an easier one (Hare, 1981; Bednar, 1987).

Students with different reading abilities may use the same or different strategies (Neuman, 1990; Olshavsky, 1976-1977). Students of the same reading ability may use different strategies (Pereira, 1991), or they may use the same strategy differently (Block, 1986).

Readers with L1 and L2 backgrounds do not typically use the same strategies (Padron, Knight and Waxman, 1986). Or they may report different frequencies of the same strategy (Pritchard, 1990).

The tasks that students face may cause them to employ different strategies. (Anderson, 1989; Garner and Alexander, 1982; Hare and Smith, 1982; Powell, 1988). Readers' strategies when they face questions are discussed immediately after the section on Rating Scales and Students' Reading Strategies.

Rating Scales and Students' Reading Strategies

The present study used a rating scale to collect supporting data on children's strategies as they read and answer questions on texts. The following paragraphs describe rating scales as they have been used with students.

Besides using retrospective T-O-L's Paris and Myers (1981) also used a rating scale in their investigation of the reading strategies of fourteen proficient and fourteen less proficient Grade Four readers. These students rated twenty statements on a nine point rating scale. Ten of these statements could positively affect their memory of a story they read; for example, "Ask yourself questions about the ideas in the story" (p.14). Ten statements could have a negative effect, for example, "Think about something else while reading" (p. 14). On the center of the rating sheet was drawn a box with the words, "No differences" written under it. To the right of this box were four boxes above the axis line. These boxes increased in height and the first was labelled, "Helps a little", and the last, "Helps a lot". To the left of the center box were four boxes drawn below the axis line. They increased in height, and the first box was labelled, "Hurts a little", and the last, "Hurts a lot". Less proficient readers gave higher ratings to the statements which described negative strategies. They also displayed reversals of expected trends. For example, "Saying every word over and over" was rated very helpful by less proficient readers, but proficient readers rated this statement as neutral. A negative correlation was discovered between the items rated highly by less proficient readers and their performance in recalling the story. While a nine point rating scale seems very difficult for Grade Four

students to accommodate, this study is frequently quoted as authoritative.

A rating scale was also used in the study of Carrell (1989), who investigated seventy-five English-speaking college students studying Spanish (ES) and forty-five Spanish-speaking students studying English (SE) reading two texts, the first text in their native language and the second text in their second language. A five point scale that was employed ranged from strongly agree, agree, neutral, disagree to strongly disagree. The students then answered multiple-choice questions and rated thirty-six statements. These statements tapped students' confidence about their reading ability, the strategies they believed were effective, what they considered difficult, and the "repair" strategies they used when they faced problems. After reading in their first language both (ES) and (SE) students showed in their ratings that they were using what Carrell called a "global" approach to reading. They highly rated statements that showed that they made use of text organization, considered their Prior Knowledge and focussed on the gist of the text. They rated low what Carrell called "local" strategies like decoding. The performance of both groups in the multiple-choice questions was positively related to students' disagreeing that they gave up and stopped reading when they did not understand something that was written in their second language. However, there were differences between the two groups. The (SE) group performed

better the more they agreed with the statement that they could recognize the difference between main points and supporting details when they read in their second language. The (ES) group scored better the more they agreed with the statement that they questioned the author's truthfulness when they read in their second language. The (SE) readers did better if they disagreed with the statement that relating Prior Knowledge to the text caused them difficulty in their second language. There was a negative relationship between the performance in the multiple-choice test of the (ES) readers and their agreeing that it was an effective strategy to use letter-sound correspondence when they read in their second language. Carrell commented on the differences between the (ES) and the (SE) groups by stating that the latter were more advanced language learners and tended to use "global" strategies while the former who were less advanced were inclined to use "local" strategies.

The literature on the use of rating scales and reading strategies is, however, scarce. Most rating scales are used to assess readers' attitude towards reading. Nevertheless, these two studies by Carrell (1989) and Paris and Myers (1981) indicate that proficient and less proficient readers, more advanced and less advanced language learners, rate statements about strategies in different ways. There is also evidence in these two studies of correlations between students' ratings and their performance on post-reading comprehension tasks.

Question-Answering Strategies

In the following section the literature on question-answering strategies in general and one strategy in particular, the "lookback" strategy, is reviewed. A reader uses the "lookback" strategy to re-examine the whole text or portions of the text in order to find some information that had been forgotten. Or a reader re-reads a text to comprehend it better.

Question-answering strategies are discussed in the context of answering open-ended questions, and not multiple-choice questions. Multiple-choice questions in standardized tests have been widely used as a form of assessing students' comprehension of texts. Most researchers have investigated how students choose the correct answer and eliminate the other choices provided in the multiple-choice tests. Studies about students' strategies in answering open-ended questions are few in number.

Question-Answering Strategies (Excluding "Lookback" Strategy)

Most researchers who used the Pearson and Johnson taxonomy (1978) had an instructional purpose. Their aim was to teach students to improve their ability to search for the

answer either in the text or in their Prior Knowledge (Raphael and McKinney, 1983; Raphael and Winnacott, 1985).

Only one research did not have an instructional purpose. The researchers investigated children's classification of questions according to the Pearson and Johnson taxonomy (1978). Raphael, Winograd and Pearson (1980) used two hundred and forty Grade Four, Six, and Eight students who read definitions and examples of Textually Explicit, Textually Implicit and Scriptally Implicit questions. They then read a story and classified the questions about the story, or the order was reversed for some children. Students' answers were scored as to whether it was based on the text or on their Prior Knowledge. Children gave more text-based answers than knowledge-based answers to Textually Explicit questions. The reverse was true for the Scriptally Implicit questions. Proficient readers tended to be more consistent in their classification of the questions and their source of answers.

Two studies made use of T-O-L's in their investigation of students' question-answering strategies. Goldman and Duran (1988) investigated the strategies that seven university students used while answering questions on a text on oceanography. Four of these students were L1 readers, the rest were L2 readers. These students differed in their amount of Prior Knowledge about oceanography. They verbalized their thoughts as they answered questions on the text. Students indicated in their verbal reports that they

were searching their memory or the text or both memory and text for an answer. They also used reasoning and showed that they were monitoring their answers. Students who were more successful in answering questions demonstrated that they monitored the product of their answers. Less successful students seemed to rely on their memory and did not monitor their answers. Second Language (L2) readers, especially those with low knowledge, found questions which required paraphrases or conversions of vocabulary the hardest to answer. Second Language (L2) readers with high knowledge, however, were less dependent on the text. Those students with low knowledge tried to compensate this deficiency by means of lengthy processing of the text, and by monitoring and evaluating the process and the product of their actions.

The second study was carried out by McDonnell (1989) who investigated the test-taking strategies of thirteen proficient Grade Six students. They read texts and verbalized their strategies in answering questions, completing a cloze and re-telling the information in the texts. McDonnell noticed that these students used coping strategies to deal with questions they could not answer. For instance, one student said that he skipped difficult questions. Students reported that they used their knowledge of the format of questions. One student believed that questions were simply about the main idea in a text. They verbalized their use of Prior Knowledge. They also reported that they re-read the question to try to understand it and

they re-read the text to focus on details and to find forgotten facts. As well, they also had unique personal strategies. One student believed that he would gain extra marks if he elaborated his answer.

In conclusion, the studies by Goldman and Duran (1988), McDonnell (1989) and Raphael, Winograd and Pearson (1980) have investigated students' question-answering strategies. These studies do not seem to have yielded as rich findings as those numerous studies which investigated students' reading strategies.

The studies about students' question-answering strategies indicate that students use coping strategies when faced with difficult questions (McDonnell, 1989). Students monitor their answers and they process texts especially when they have low Prior Knowledge (Goldman and Duran, 1988). They do demonstrate their ability to classify the Textually Explicit, Textually Implicit and Scriptally Implicit questions. They show that they use their Prior Knowledge and the text to answer questions (Raphael, Winograd and Pearson, 1980). In the next section, students' strategies in looking back at texts is discussed.

"Lookback" Strategy

While answering a question about a text a reader uses the "lookback" strategy for a variety of purposes. A reader

re-examines the whole text or portions of a text in order to find information that has been forgotten. A reader may re-read a text in order to comprehend it better before answering questions on that text.

Most studies on the "lookback" strategy have compared proficient and less proficient readers' use of this strategy (Davey, 1988; Garner and Reis, 1981). Other studies used the "lookback" strategy as an instructional technique (Alvermann, 1988; Garner, Hare, Alexander and Winograd, 1984). One study used an experimental approach to test the hypothesis that lookbacks enhance comprehension when students fail to understand or forget information required to answer questions (Alessi, Anderson and Goetz, 1979).

Few researchers have investigated students actually using the "lookback" strategy. Two studies which did investigate the "lookback" strategy also used the T-O-L method in a tutoring context. Older students verbalized their "lookback" strategy as they tutored younger children.

In a study by Hahn and Smith (1983) Grade Five students tutored Grade Three children who had been trained to feign ignorance in a particular task. Each tutoring pair was observed as they answered questions on a text. Proficient tutors encouraged more "lookbacks", sampling of the text and reference to Prior Knowledge than less proficient tutors did.

Garner, Macready and Wagoner (1984) also had Grade Five students tutor Grade Three children trained to feign

strategy deficits. Each tutoring pair was also observed as they answered questions on a text. These students exhibited behavior which provided a good fit to the researchers' hypothesis that the "lookback" strategy was acquired in a specified sequence. The researchers' hypothesis was that less proficient readers re-read the whole text and were not able to scan it for the information required. As students developed their ability to re-read they were able to scan the text. More proficient readers were able to distinguish between text-based from knowledge-based questions. The last skill to be acquired in the use of the "lookback" strategy was the ability to combine ideas across sentences in the text.

The "lookback" strategy, thus, appears to be a skill that differentiates between proficient and less proficient readers (Hahn and Smith, 1983). It is acquired in a sequence of steps from undifferentiated re-reading of the whole passage, followed by the ability to scan the text, to distinguish between answers that are to be found in the text or in Prior Knowledge, and culminates in the skill of combining information from different parts of the text (Garner, Macready and Wagoner, 1984).

Summary on Studies about Reading and Question-Answering Strategies

From this review of literature it would appear that students do use strategies while reading to comprehend a text. Researchers using the T-O-L methodology and rating scales have found that readers use a variety of strategies to help them understand texts. From the studies reviewed in this section (Alvermann, 1984; Anderson, 1989; Bednar, 1987; Block, 1986; Garner and Alexander, 1982; Hare and Smith, 1982; Langer, 1986; Neuman, 1990; Olshavsky, 1976-1977; Powell, 1988; Pereira, 1991) a picture emerges of the strategies that readers report using. Readers verbalize that they use Prior Knowledge. They attempt to make sense of the texts they are reading and show thoughtful, reasoning behaviors. They report that they infer, predict, question, visualize, change reading speed, paraphrase, use context clues, and relate what they are reading to previous portions of the text. They also acknowledge their failure to comprehend a text.

The studies reviewed also indicate that not all students report using the same types of strategies (Olshavsky, 1976-1977; Padron, Knight and Waxman, 1986; Pereira, 1991). Sometimes when students verbalize the use of the same strategy, they may not be using it with the same frequency (Bednar, 1987; Langer, 1986; Padron, Knight and Waxman, 1986; Pritchard, 1990a). Students also seem to use

strategies with different rates of success (Neuman, 1990).

Most researchers would agree with Anderson (1989) that:

it is not simply a matter of knowing what strategy to use but the reader must also know how to use it successfully and orchestrate its use with other strategies (p. 135).

Researchers have also used T-O-L's to investigate students' question-answering strategies (Garner, Macready and Wagoner, 1984; Goldman and Duran, 1988; Hahn and Smith, 1983; Raphael, Winograd and Pearson, 1980). The findings from these studies provide a clue to the strategies readers use to answer questions. The strategies that students report using are that they re-read the question and monitor their answers. They re-read the text, looking at specific parts of it and they combine information from different portions of the text. They decide that the answer is not in the text but in their Prior Knowledge. They also indicate that they use their reasoning to obtain an answer.

With the exception of the studies by Langer (1986) and by Padron, Knight and Waxman (1986), most researchers have used students who were at or above the Grade Six level. Most of the readers were proficient or less proficient readers. Only a few studies specifically investigated average readers (Pereira, 1991). Some of these studies included L2 readers (Anderson, 1989; Padron, Knight and Waxman, 1986; Pritchard, 1990). This present study explored how average L1 and L2 Grade Three readers used their Prior Knowledge and Non Prior Knowledge strategies to interact

with texts and to answer questions on those texts.

CHAPTER III

MATERIALS AND METHODOLOGY

The purpose of the study was to investigate the role of Prior Knowledge and Non Prior Knowledge strategies in average L1 and L2 Grade Three readers' interactions with two texts as they read and later as they answered Textually Explicit, Textually Implicit and Scriptally Implicit questions.

Two research questions focussed on the readers' Prior Knowledge strategies as (a) they interacted with the two texts and (b) answered questions on those texts. They were:

- (1) What was the role played by Prior Knowledge strategies as average L1 and L2 Grade Three readers interacted with texts?
- (2) What was the role played by Prior Knowledge strategies as average L1 and L2 Grade Three readers answered: (a) Textually Explicit questions, (b) Textually Implicit questions, and (c) Scriptally Implicit questions?

Two other questions focussed on Non Prior Knowledge Strategies used by readers as (a) they interacted with two texts and (b) answered questions on those texts? They were:

- (3) What was the role played by Non Prior Knowledge strategies as average L1 and L2 Grade Three readers interacted with texts?

- (4) What was the role played by Non Prior Knowledge strategies as average L1 and L2 Grade Three readers answered: (a) Textually Explicit questions, (b) Textually Implicit questions, and (c) Scriptally Implicit questions?

This chapter describes the design of the study, the pilot studies undertaken, the selection of subjects, the setting of the study, the instruments used, the collection of data and preparation of the data base. Questions of validity and reliability are also discussed.

Design of the Study

The study was designed as an exploratory case study. According to Yin (1986), a case study seeks to answer "how" and "why" questions about contemporary events, and provides multiple sources of evidence. Although the four research questions stated above do not begin with the words "how" or "why" they could be paraphrased and summarized as:

How do average L1 and L2 Grade Three readers use Prior Knowledge and Non Prior Knowledge strategies to understand texts and to answer Textually Explicit, Textually Implicit and Scriptally Implicit questions?

The study thus sought to explore young students' comprehension of texts and their answering of questions. To obtain in-depth information about students' use of Prior Knowledge and Non Prior Knowledge strategies in their

interactions with texts and their answering of questions, two sources of evidence were used.

One source of evidence was the data generated by "Think-Out-Loud" (T-O-L) methodology described by Block (1986) as a "window into those processes that are usually hidden" (p.464).

The other source for the data was the readers' ratings of researcher-developed Reading and Question-Answering Strategy Rating Scales. The strategy statements in these rating scales were compiled from a survey of the literature on readers' strategies while reading and answering questions. Students' ratings of these statements served as data complementary to their Think-Out-Loud protocols.

Students were not randomly selected but were chosen according to certain criteria which will be described in a later section of this chapter.

Instruments

To gather the necessary data, seven instruments were used in this study. They are described in the subsections following.

Coloured Progressive Matrices (Raven, 1965)

Coloured Progressive Matrices (Raven, 1965) were administered to students to equate the two groups selected for the Sixth and Seventh Sessions. All students in the sample fell between the 50th and the 95th percentile.

It is a test of reasoning and reasoning was seen as an essential strategy used by readers as they attempt to make sense of the text they are reading (Langer, 1986; Pereira, 1991). Readers use their reasoning to obtain answers to questions on texts (Goldman and Duran, 1988). And it should be remembered, Thorndike (1917), who was considered the font of knowledge concerning thought processes involved in students' responding to text questions, described how the "act of answering simple questions ... includes all the features characteristic of typical reasonings" (p.323).

The Coloured Progressive Matrices (Raven, 1965) consists of three sets of twelve matrices each. Students were required to decide which of the six alternatives provided was the correct one to complete a design or matrix. Testing was untimed and took about thirty minutes per student.

According to the 1965 manual the test/ re-test reliability coefficient ranges from .65 for children under seven years of age to .80 for nine-year-old children.

Comprehension Subtest of the Gates-MacGinitie Reading Test,
Level C, Form 1 (1978)

The intent of giving the Comprehension subtest of the Gates-MacGinitie Reading Test, Level C, Form 1 (1978) was to ensure that the reading comprehension scores of the subjects selected fell between the 4th and 7th stanine to establish an objectively determined average sample of Grade Three readers.

The Reading Comprehension subtest consists of twenty-two short texts. Each text is followed by two questions which can be answered by choosing one of the four multiple-choice answers provided. The total time allowed a student to complete this test is thirty-five minutes. All students completed the test within the time limits allowed.

Canadian norms for the Gates-MacGinitie Reading Tests were based on approximately 4000 children. According to the manual for this test, the reliability coefficient for Level C of the Comprehension Subtest is .94. The designers of the test provided proof of content validity by referring to the variety of materials found in the tests. Out of the total number of twenty-two passages in Level C, 20% are from social science materials, 20% from natural sciences texts and 55% from narratives. It was felt, then, that the content of this Comprehension subtest reflected typical reading material found at a Grade Three level.

Researcher-Developed Prior Knowledge Test

The intent of giving the researcher-developed Prior Knowledge Test was to assess the Prior Knowledge of the students about the topics of the two texts used in the data collection. Topics other than those in the two texts were included in the Prior Knowledge Test to ensure that the subjects were not given clues as to the topics of the texts they would later read.

This test, a copy of which can be found in Appendix 1, was administered orally. It consisted finally (see Pilot Study) of forty items and tested children's Prior Knowledge of five different topics: Dinosaurs, Insects, Whales, Inuit people, and the people of New Guinea. The test was in a multiple-choice format and each item offered students three answers to choose from. An example is provided from an item about Whales.

2. A Whale is

- a. a fish
- b. a mammal
- c. a reptile

Researcher-Developed Question-Markers Matching Test

The intent of the Question-Markers Matching Test

was to assess students' understanding of the question markers, "why", "when", "which", "how many" and "where" words that often form important indicators to a question. Langer (1987) had described how four subjects' misunderstanding of the meaning of questions impeded their selection of the correct response in a multiple-choice test.

Appendix 2 contains a copy of the Question-Markers Matching Test.

Although the test was administered (see Fourth Session) the researcher concluded that the metalinguistic nature of the test inhibited the responses of the students. It was decided, therefore, that no use should be made of the results of this test and it did not form part of the data base of the study.

Free-Telling of Prior Knowledge

The intent of using a free-telling of Prior Knowledge situation was to assess students' Prior Knowledge in a format that allowed them to express their knowledge in their own words, unlike the Prior Knowledge Test in which students were tested on specific items designed by the researcher.

Students were asked individually to provide a free-telling of their knowledge about Whales, Insects, Dinosaurs and Inuit people.

Researcher Developed

Reading and Question-Answering Strategy Rating Scales

The intent of the Reading Strategy Rating Scale and the Question-Answering Strategy Scale was to obtain subjects' reactions to strategy statements, and to provide supporting data to the Think-Out-Loud protocols.

Statements about reading and question-answering strategies were obtained from a review of the literature and thirty-two statements were developed.

The Reading Strategy Rating Scale consisted of eighteen statements illustrating reading strategies. These strategies included use of Prior Knowledge, re-reading, inference-making, prediction, making judgments, questioning, use of context, changing reading speed, and stating failure to understand. An example of a reading strategy statement would be: "I used what I already knew to help me understand the passage".

Fourteen statements were developed for the Question-Answering Strategy Scale reflecting such question-answering strategies as a student's making sense of the question, searching for answers in memory, text or Prior Knowledge. An example of a question-answering strategy statement would be: "I got the answers by remembering what I had just read".

Appendix 3 contains the full text of the Researcher-developed Reading and Question-Answering Strategy Rating Scales.

Students were asked to listen to the statements as they were read to them. They rated the statements on a five point Likert-type rating scale. These five points were labelled as: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. A visual aid for these Grade Three readers in the form of five faces was used. The face for "Strongly Disagree" had a marked downward curve to a mouth. The downward curve on the "Disagree" face was less marked than that of the "Strongly Disagree" face. The "Neutral" face had a straight line for a mouth. The smile on the "Agree" face was less broad than that of the "Strongly Agree" face.

Reading Texts (Adapted from Lipson, 1981)

The three texts on Dinosaurs, Whales and Insects, which were used in this study were adapted with permission from Lipson (1981). These three texts were intended to provide reading materials that were interesting to Grade Three students. Dinosaurs, a subject, which usually attracts elementary school students, was the topic of the text used for the practice in Thinking-Out-Loud. The other two texts, on Whales and Insects, were used as it was expected that students would have different levels of interest and Prior

Knowledge for them as was indicated later in the Second and Third pilot studies.

The texts consisted of four paragraphs. Each text contained eighteen sentences and was about 170-178 words in length. The mean number of words per T-unit or independent clause was 8.05-8.60.

There has been a paucity of research on the mean number of words per T-unit in the texts typically read by students at any specific grade level. However, there has been research on the mean number of words per T-unit in the oral and written sample of Grade Three students. O'Donnell, Griffin and Norris (1967) had their sample of thirty Grade Three students retell orally and write about two animated cartoons of Aesop's fables. The mean number of words per T-units in their oral re-telling was 8.73, with a range of 7.4 to 10.8. The mean number of words per T-unit of their written sample was 7.67, with a range of 5.7 to 11.6. Hunt (1965) reported that Grade Four students' written samples were 8.51 words per T-unit. The three texts chosen for this study would, then, be more like Grade Four students' written samples. It is likely, however, a student's written and oral samples would contain less words per T-unit than a text which a student is able to read comfortably.

A mean Standard Word Frequency Index on the texts used as calculated according to Carroll, Davies and Richman (1971) was 66.08-66.87. In Freebody and Anderson's study (1983) the mean Standard Word Frequency Index of common

words was 62.19, which is similar to the mean Standard Word Frequency Index of the two texts.

The readability level of these three texts as calculated according to the Fry formula (1977) was a high Grade Three level.

Both texts were informative in nature and described the characteristics or attributes of the topic.

Appendix 4 contains a copy of the three texts and the questions which are described in the section following.

Researcher-Developed Questions on Reading Texts

Each text was followed by three Textually Explicit, three Textually Implicit and three Scriptally Implicit questions. All questions were created by the researcher, and a copy of the nine questions for each text can be found in Appendix 4.

These three types of questions were classified according to Pearson and Johnson's taxonomy (1978). According to this taxonomy students might use the text to answer Textually Explicit questions. They would infer the answers to Textually Implicit questions from the text, and they would use their Prior Knowledge to answer Scriptally Implicit questions. Three doctoral students in Reading Education independently classified the questions, and inter-rater reliability was 90%-96%.

Pilot Studies

Three pilot studies were carried out in three different elementary Catholic schools in Burnaby, a neighboring city of Vancouver, British Columbia, Canada. The three pilot studies are described in detail in the sections following.

First Pilot Study

The purpose of the first pilot study was to field test the researcher-developed Prior Knowledge Test, with the aim of shortening the number of items on this multiple-choice test, which consisted of sixty-three items around seven topics.

The Prior Knowledge Test was read in two sessions to twenty Grade Three students (ten L1 and ten L2 students) at one Catholic elementary school.

Analyses of the scores obtained included item difficulty and item discrimination, resulting in the elimination of the items on two topics, the Viking, and the Venus Flytrap, and the shortening of the test to forty items.

Second Pilot Study

The purpose of the second pilot study was to field test the revised Prior Knowledge Test, the two texts (Whales and Insects) adapted with permission from Lipson (1981), nine researcher-developed questions on each text (three Textually Explicit, three Textually Implicit and three Scriptally Implicit questions) and the researcher-developed Reading and Question-Answering Strategy Rating Scales.

Ten Grade Three students (five L1 and five L2 students) from a second elementary Catholic school participated in this second pilot study.

The Comprehension subtest of Gates-MacGinitie Reading Level C, Form 1, was administered in the first session to determine the reading comprehension level of the participating students.

On the next day the Prior Knowledge Test was read orally to the students and they responded by circling the best answer on the test paper.

Before the third session, students were divided into two groups so that the groups were roughly equal in their scores on the Gates-MacGinitie Reading Comprehension subtest and on the Prior Knowledge Test.

During the third session, the students had individual practice in rating statements on a five point scale pointing to one of five faces to indicate whether they disagreed strongly, disagreed, were neutral, agreed or agreed strongly

with the statements. Then half of the students each read orally the Whales text to the researcher, listened to and rated the Reading strategy statements, answered orally into two tape-recorders the nine questions read to them, and finally listened to and rated the Question-Answering strategy statements. The other half of the students followed the same procedure except that they read the Insects text. Two tape-recorders were used in case there were mechanical problems with either of them.

In the fourth session the students read the text not read in the third session and followed the same procedure as in the third session.

As a result of further item discrimination and item difficulty analyses on the Prior Knowledge Test, changes were made to a few items. Also, some items on the researcher-developed Reading and Question-Answering Strategy Rating Scales were omitted or revised as a result of discrimination index analyses. Two questions on the Insects text were revised to enhance their clarity. The two texts were found to pose no decoding (word recognition) problems to the participating students.

Third Pilot Study

The purpose of the third pilot study was to field test all materials of the seven sessions which were to be used in the main study, and to determine the length of each session.

Six Grade Three students (four L1 and two L2 students) from a third elementary Catholic school participated.

In the first session the researcher and individual students became acquainted and languages spoken at home were ascertained. In this session the Coloured Progressive Matrices was administered.

In the second session the Comprehension subtest of Gates-MacGinitie Reading, Level C, Form 1, was given.

In the third session the revised Prior Knowledge Test was read to the students.

In the fourth session the students were given individual practice in rating statements on a five point scale, pointing to one of five faces to indicate whether they disagreed strongly, disagreed, were neutral, agreed or agreed strongly with the statements. They were then asked to speak into a tape-recorder and tell the researcher, who pretended to be a Martian to put the children in a frame of mind that called for inclusive description, of what they knew about Whales, Insects, Dinosaurs and Inuit people. Instructions for this free-telling of their Prior Knowledge about the four topics was adapted with permission from Lipson (1981).

In the fifth session the students practised Thinking-Out-Loud into a tape recorder while reading silently, or aloud, each sentence of the Dinosaurs text. Sentences of this text were numbered just as sentences in the passages of Lytle's dissertation (1982) had been numbered. They then

orally answered nine questions (three Textually Explicit, three Textually Implicit and three Scriptally Implicit questions) on the text, and their answers were taped.

Before the sixth session, students were divided into two groups so that the groups were roughly equal in their scores on the Coloured Progressive Matrices, Gates-MacGinitie Reading Comprehension subtest, and the Prior Knowledge Test.

In the sixth session one group individually read the Whales text first, Thinking-Out-Loud after each numbered sentence. Each student then listened to and rated the revised Reading Strategy Rating Scale, answered orally nine questions which were read by the researcher, and then finally listened to and rated the revised Question-Answering Strategy Rating Scales. The other half of the students followed the same procedure except that they individually read the Insects text first.

In the seventh session the students read the text not read in the sixth session, rated the Reading strategy statements, answered questions on the text, and finally rated the Question-Answering strategy statements.

The third pilot study demonstrated that each session could be accomplished within reasonable time limits of about forty minutes each session, was not tiring to the students, and that students were able to engage readily in the Think-Out-Loud activity.

Further item discrimination and item difficulty analyses resulted in the revision of two items in the Prior Knowledge Test.

Three reading strategy statements were re-written, using actual words that the students had used in their Think-Out-Loud. A number of question-answering strategy statements were eliminated as a result of item discrimination analysis, others were revised; and it was decided that another test should be developed to assess students' understanding of such question-markers such as "why", "when", "which", "how many" and "where". As noted this test was unsuccessful.

Subjects

Twenty average Grade Three readers from students not in the pilot studies were selected according to the following criteria:

- (1) Ten subjects were L1. These were students whose predominant home language was English (Information about predominant home languages was ascertained from the students and from their teachers).
- (2) Ten subjects were L2. These were students whose predominant home language was not English. (Again, information regarding predominant home languages was ascertained from the students and from their teachers.)
- (3) Of these subjects, approximately half were male students

and half were female students. (In the study there were nine male and eleven female students.)

- (4) All twenty readers had scored in the 4th, 5th, 6th and 7th stanines on the Comprehension subtest of the Gates-MacGinitie Reading Test, Level C, Form 1 (1978). This criterion eliminated students in the top two and bottom three stanines and ensured an average sample.
- (5) All twenty readers scored at or above the 50th percentile level on the Coloured Progressive Matrices (Raven, 1965).
- (6) All twenty students had been judged by their teachers to be verbal and comfortable expressing their thoughts.

Appendix 6 contains a description of these subjects, including their age, first language spoken and schools attended.

Setting of the Study

The research sample of twenty students was chosen from two schools in School District 39, Vancouver, British Columbia, Canada. One school had a population of approximately 600 students from Kindergarten to Grade Seven. In this school there were five Grade Three classes. The second school was smaller with 180 students from Kindergarten to Grade Four, and there were three Grade Three classes. The two schools were approximately 7.5 kilometers

apart, and students in one school had no contact with students in the other school. Both schools were in the east side of the city where the neighbourhood would be designated as having low to middle income families.

The two schools from which the sample was taken reflected the findings of the Vancouver school district survey of English as a Second Language students (Reid, 1988). According to this survey, L2 students comprised 46.9% of the total school district population. At the elementary level L2 students constituted 51.3% of the total number of elementary students. At the secondary level L2 students were 40.4% of the total number of students. Percentages varied also at each grade level. For example at the Grade Three level L2 students were 49.4% of the total Grade Three population.

According to Vancouver School Board data (Reid, 1988), L2 students spoke forty-two different first languages in their home culture. Of these forty-two languages, the most commonly spoken first language were Chinese dialects which were spoken by 47.6% of the L2 students. Other first languages which were commonly spoken were East Indian languages which were the first languages of 15.1% of the L2 students. Vietnamese was spoken by 5.7% of the L2 student population, and Spanish was the first language of 4.1% of the L2 students.

Ten of the subjects in the study spoke English as a First Language (L1). Of the ten who spoke English as a

Second Language (L2), Cantonese was the first language of three students (33.3%), Punjabi of another three students (33.3%), Vietnamese of two students (20%), and Croatian of one student (10%).

All twenty subjects were born in Canada with the exception of one L2 student (#23) who immigrated to Canada with his family when he was a year and a half.

Collection of Data

Permission to conduct this study was obtained from both the Vancouver School District and from the Behavioural Sciences Screening Committee for Research and other Studies involving Human Subjects at the University of British Columbia, Canada.

Once permissions were obtained, the staff of the two schools that had expressed willingness to participate were contacted. The researcher met with the school administrators and the teachers who taught Grade Three in the two schools in order to describe the study, to answer any questions that they might have, and to determine convenient times for each of the seven sessions. Teachers then assisted in selecting students according to the criteria in the section which described the subjects of the study.

After teachers had selected potential subjects, letters were sent to their parents, describing the study and requesting their permission to allow their children to

participate in the study. Twenty-seven letters of permission were obtained from parents. All twenty-seven students were given all tests of the battery. However, after the second session when the Gates-MacGinitie Reading Test, Level C was administered the researcher designated twenty children to form the sample. The twenty selected students met the criterion of having scores within stanines 4 to 7 on the Comprehension subtest of the Gates-MacGinitie Reading Test, Level C. The seven students not chosen scored either in the top two stanines or the bottom three stanines of the Gates-MacGinitie Reading Test Comprehension subtest. All twenty students scored at or above the 50th percentile level on the Coloured Progressive Matrices (Raven, 1965).

There were seven data collecting sessions:

- (1) Individual testing on Coloured Progressive Matrices
- (2) Group testing on Gates-MacGinitie Comprehension subtest
- (3) Group testing on Prior Knowledge Test
- (4) Individual session in:
 - (a) practising rating statements
 - (b) taking the Question-Markers Matching Test
 - (c) free-telling of Prior Knowledge
- (5) Individual practice in Thinking-Out-Loud (T-O-L) on Dinosaurs text
- (6) Each student:
 - (a) read the Whales or Insects Text, using T-O-L procedure after each sentence
 - (b) rated the Reading strategy statements

- (c) answered questions on the Whales or Insects text
 - (d) rated the Question-Answering strategy statements.
- (7) Each student:
- (a) read the Insects or Whales Text, using T-O-L procedure after each sentence
 - (b) rated the Reading strategy statements
 - (c) answered questions on the Insects or Whales text
 - (d) rated the Question-Answering strategy statements.

Each session was held in a small enclosed room or classroom assigned by the administrator of the school. The seven sessions are described in detail in the sections following.

First Session

Administering the Coloured Progressive Matrices

(Raven, 1965)

During the first session the researcher met with individual students and became acquainted with them. Information about their age and languages spoken at home was obtained. (Prior to this session, teachers of these students had been contacted to obtain information about the languages which these students spoke at home). Every attempt was made to ensure that the student felt comfortable in the presence of the researcher who had twenty-one years' experience as a Primary school teacher.

At this first session students were individually given the Coloured Progressive Matrices (Raven, 1965), according to the directions in the manual. They were shown one matrix or design at a time and were asked to choose one among the six alternatives provided to complete the matrix. There was no time limit, but testing time varied from sixteen to thirty-eight minutes. Testing with the Coloured Progressive Matrices was completed within three school days.

Second Session

Administering the Comprehension Subtest of the Gates-MacGinitie Reading Test, Level C, Form 1 (1978)

The Comprehension subtest of the Gates-MacGinitie Reading Test, Level C, Form 1 (1978) was administered according to the directions in the manual to a group of students from the same school. As students came from five different classrooms in the larger school, and there was scheduling of periods such as those for Physical Education, it was decided to test students in two groups on the same day. Students in the smaller school were tested as a group five days later.

According to the directions, students were first given practice with the multiple-choice format. All students were able to complete the test within thirty-five minutes which was the time limit stated in the manual.

Third Session

Administering the Researcher-Developed Prior Knowledge Test

The researcher-developed Prior Knowledge Test was read to students. Fourteen out of sixteen students from the larger school were tested in two groups on the same day in classrooms which were not in use. Two students were absent and were tested individually a day or so later. It was believed that these two students had been not told by the other students about the items in the test. The four students from the smaller school were tested as a group three days after testing was done in the larger school.

All students were first introduced to the multiple-choice format. When students had demonstrated their understanding of the multiple-choice format, the forty items of the Prior Knowledge Test were read by the researcher with the students following on their test paper. All students were given sufficient time to think and circle their answer. Requests to re-read a certain item were seldom made, and when they were made, the items were re-read.

Appendix 1 contains a copy of the researcher-developed Prior Knowledge Test.

Fourth Session

- (a) Practice with Rating Scales,
- (b) Administration of the Researcher-Developed Question-Markers Matching Test, and
- (c) Students' Free-Telling of their Prior Knowledge of four topics.

During the fourth session a five point rating scale was demonstrated to individual students. Each student was given practice to rate statements about favorite activities, T.V. shows, arithmetic problems and short sentences by pointing on the reaction sheet to one of the faces that best described the student's response to each statement.

The second part of this session was used to administer the Question-Markers Matching Test. Each student was first given practice in the matching format, matching additions such as $2+3$ on one side of the page with the answers on the other side. Then the researcher orally asked the student five questions about two pencils which were placed in front of them, using five question-markers: "why", "when", "which", "where" and "how many". All students understood the five questions and answered them correctly. Then the researcher read the Question-Markers Matching Test with the student following it on the test paper. The student matched one part of the statement about a question-marker to the remaining part of the statement which completed it. For

example, "to answer "how many" questions" would have been matched with, "you tell the number of things". Appendix 2 contains a copy of the Question-Markers Matching Test.

At this session students were also individually asked to provide a free-telling account of their Prior Knowledge of Dinosaurs, Insects, Whales and the Inuit people. The researcher read the instructions for the free-telling which were adapted with permission from Lipson (1981). An example is given of the instructions for the free-telling about Dinosaurs.

"Pretend that I am from Mars. I don't know anything about Dinosaurs. I've never heard of Dinosaurs. I don't know anything about Dinosaurs. Tell me everything I would need to know about Dinosaurs to understand Dinosaurs."

All students were allowed to prepare for the free-telling by either thinking about or writing down their thoughts. Students chose one of the two modes of preparing. When a student stated that he/she was ready to speak, the record button on each of the two tape-recorders was pressed. When the student finished, the researcher then said,

"Is there anything else you know that you could tell me about Dinosaurs? Remember I don't know anything about Dinosaurs".

Sometimes the student had something to add, sometimes there was nothing to add. Whatever the answer the researcher then said, "Is there anything else I should know about Dinosaurs". Occasionally a student who had nothing to say

after the first prompt, had something to add after this second prompt.

The same instructions and procedures were followed for the free-telling about Insects, Whales and the Inuit people.

All students went along with the pretence that the researcher was from Mars and could not help them with any information, and seemed interested in providing an account of their knowledge.

This session lasted from about thirty to forty-five minutes depending on the individual student's rate of responses. This fourth session was administered to all twenty students within a week.

Fifth Session

Practice in Thinking-Out-Loud while reading a text

During the fifth session each student was given individual practice with the "Think-Out-Loud" (T-O-L) methodology using the Dinosaurs text which was not used for the formal data collection in the Sixth and Seventh Sessions. The Dinosaurs text was chosen as it was decided from the third pilot study that students were interested in Dinosaurs and would be willing to Think-Out-Loud about it.

The session began with the researcher asking the student to tell what came to his/her mind when the researcher said some words, such as "recess, drawing,

Nintendo, hockey etc". Then the researcher reminded the student about how one could write down the thoughts one had while one was drawing, a practice which early Primary teachers frequently do with their students. Then the researcher said that when one read one also had thoughts which one could talk about.

When the researcher felt that the student understood what Thinking-Out-Loud meant the instructions for the Dinosaur Think-Out-Loud was given. The instructions were: "Today you will be reading about Dinosaurs. The passage has been typed one sentence at a time with a number at the beginning of each sentence. All eighteen sentences are from the same passage. I would like you to tell me the number of the sentence (researcher pointed to number 1 sentence which was exposed), and then read the sentence to yourself or out loud. Please tell me what you are thinking about as you read that sentence. When you have finished talking about that sentence move the paper (researcher demonstrated moving the coloured paper which covered the rest of the passage down so sentence number 2 was exposed). Tell me the number of that sentence, and read it to yourself or out loud. Then talk about your thoughts as you read that sentence and any other thoughts you have about the passage".

The student was asked if he/she understood the instructions. Most students replied that they did understand, and the researcher told each student that he/she would be asked some questions and that he/she should Think-

Out-Loud the answer and how the answer was obtained. A student's Think-Out-Loud responses were tape-recorded.

Powell (1988) from her experience suggested that if a student were silent for more than approximately 30-45 seconds the researcher should remind the student to Think-Out-Loud. The researcher thus asked the student, "What are you thinking about?" when the student was silent for about 30 seconds. Powell also stated that if what a subject was describing was unclear to the researcher the student was asked to explain more clearly. The researcher did ask some students questions when she was not clear about what had been said.

It had been decided before the fifth session to have the student read the text silently or out loud, and if a student had problems decoding a word, the researcher would provide assistance. As students gained familiarity with Thinking-Out-Loud they would be asked in the sixth and seventh sessions to read the text out loud, and would be given no assistance in the decoding of words.

This fifth session lasted from about thirty-five to forty-five minutes depending on the individual student. All twenty students received this practice within five school days.

Appendix 4 contains a copy of the Dinosaurs text and the Textually Explicit, Textually Implicit and Scriptally Implicit questions which were asked after students had read the text.

Sixth Session

- (a) Reading a text and Thinking-Out-Loud about it,
- (b) Rating Reading strategy statements,
- (c) Answering questions on the text, and
- (d) Rating Question-Answering strategy statements.

Prior to the sixth session the researcher divided into two groups the twenty students who had been selected based on their scores on the Comprehension subtest of the Gates-MacGinitie Reading Test, Level C, Form 1. The criteria for allocating students to one of the two groups were that each group should have an equal number of L1 and L2 students, an approximately equal number of Male and Female readers, and the groups should not differ significantly in their scores on the Comprehension subtest of the Gates-MacGinitie Reading Test, the Coloured Progressive Matrices, the researcher-developed Prior Knowledge Test, the free-telling Prior Knowledge scores and the researcher-developed Question-Markers Matching Test.

Each group was comprised of ten L1 and ten L2 students, with four Males and five Females in one group, and five Males and six Females in the other group. The scores of the groups on the above mentioned tests can be found in Appendix 7. The two groups selected were not significantly different when their scores on the previously mentioned tests were compared using non-parametric Kruskal-Wallis

tests. The level of significance was set at .001 to avoid a Type I error that might have occurred because of a number of tests that were performed. Figure 1 presents the results of these tests.

Fig. 1

Results of Kruskal-Wallis (KW) tests
comparing the two groups
selected for the Sixth and Seventh Sessions

Scores on	Results of KW tests
<u>Coloured Progressive Matrices</u>	$\chi^2=0.0514$, N=20, p=.8197
<u>Gates MacGinitie</u> (Comprehension subtest)	$\chi^2=0.0700$, N=20, p=.7904
<u>Question-Markers</u> <u>Matching Test</u>	$\chi^2=4.0775$, N=20, p=.0435
<u>Prior Knowledge (Whales) Test</u>	$\chi^2=0.0514$, N=20, p=.8136
<u>Prior Knowledge (Insects) Test</u>	$\chi^2=0.5714$, N=20, p=.4366
Free-Telling (Whales)	$\chi^2=0.0914$, N=20, p=.7444
Free-Telling (Insects)	$\chi^2=0.3214$, N=20, p=.5376

Fig. 1 indicated that the two groups did not differ significantly on any of the six measures to equate them. The two groups differed on the Question-Markers Matching Test at the .04 level which was above the .001 level that had been set as the level of significance.

During the sixth session a student in one group read the Whales text, and another student from the other group read the Insects text. During the seventh session the student read the text which had not been read in the sixth session. The purpose of having two groups read two different texts first was to ensure that the results would not be attributed to the effect of practice.

At the beginning of the sixth session the researcher reminded each student about the Think-Out-Loud practice in the fifth session and the student practised again Thinking-Out-Loud about one sentence from the Dinosaurs text. Then the researcher read the following instructions for the Think-Out-Loud activity about sentences which closely resembled the instructions given in the fifth session. "Today you will be reading about (Whales or Insects). The passage has been typed one sentence at a time with a number at the beginning of each sentence. All eighteen sentences are from the same passage. I would like you to tell me the number of the sentence (the researcher pointed at number 1 sentence which had been exposed), and then read the sentence out loud. I am sorry I cannot help you with the words. Please tell me what you are thinking about as you read that sentence. When you have finished talking about that sentence, move the paper on to the next sentence (the researcher demonstrated by moving the coloured paper and exposing sentence number 2). Tell me the number of that sentence, and read it out loud. Then talk about your

thoughts as you read that sentence and any other thoughts you have about that passage".

The student was told that he/she would be asked to rate some statements about what had been read on a five point scale. The researcher then showed the paper with the five faces, and most students seemed to remember the rating practice they had received.

The student was told that there would then be a short rest period and then he/she would re-read the text typed in the paragraph format but did not have to Think-Out-Loud. The student was informed that nine questions would be asked on the text and that the researcher was very interested in how the answers were obtained and would like to hear thoughts about the answers and how the student got the answer. Finally the student was asked to listen to and rate the Question-Answering Strategy Statements.

The student was asked if he/she understood the instructions and procedures, or if there any questions. Only a few students asked questions, and it was about the Thinking-Out-Loud about the sentences. The students seemed to understand when the researcher explained what Think-Out-Loud was by showing the sentence about Dinosaurs and referring to the thoughts which the student had verbalized.

The student then read one sentence at a time, moving the coloured paper onto the next sentence, and Thought-Out-Loud after each sentence. The Think-Out-Loud responses were recorded. There were a few occasions when the student lost

the place while reading the numbered sentences, but this posed no major problem as the appropriate sentence was soon found.

When all eighteen sentences had been read, a warm-up practice with rating some statements not related to reading or question-answering then took place.

Later a student was asked to rate on the five point scale the statements of the Reading Strategy Rating Scale. Each reading strategy statement was read to the student who then pointed to one of the faces to indicate his/her reaction to that statement and the researcher recorded the response.

The student was given a short rest. Then the passage in the paragraph format was given and the student was asked to re-read it without having to Think-Out-Loud. The purpose of the re-reading was to allow the student to see the passage once more before answering questions on it.

Following the re-reading the student was informed that he/she could look back at the text if desired while answering questions and the researcher showed the papers on which the text had been typed in the numbered sentence format and in the paragraph format. The researcher read the Textually Explicit, Textually Implicit and Scriptally Implicit questions, one question at a time with the student following it on the question paper. The student's Think-Out-Loud was tape-recorded. If students did not tell how the answer was obtained the researcher asked them how they got

the answer. If they said they did not know the answer to one of the questions on the text, the researcher asked if they would like to try. Sometimes they did try, sometimes they did not. If there was no attempt to answer the question the researcher asked them where they thought the answer could be obtained. If the reply was, "the paper", they were asked if they would like to re-read the text. Students were willing to re-read the text to look for the answer, but they had no success in their search for an answer to Textually Implicit questions on Insects.

After the nine questions had been completed, the researcher read one statement at a time of the Question-Answering Strategy Rating Scale. The student was asked to point on the rating scale to one of the faces which best described the student's reaction to that statement.

This session lasted from thirty-five to forty-five minutes depending on the individual student. Eighteen students were seen within five days. Two students were absent and had their sixth session four to seven days later.

Appendix 4 contains a copy of the two texts and the Textually Explicit, Textually Implicit and Scriptally Implicit questions which were asked on each text. Appendix 3 provides a copy of the Reading and Question-Answering Strategy Rating Scales.

Seventh Session

- (a) Reading a text and Thinking-Out-Loud about it,
- (b) Rating Reading strategy statements,
- (c) Answering questions on the text, and
- (d) Rating Question-Answering strategy statements.

The procedure in the seventh session was similar to the procedure described in the sixth session. The only difference was that each student read the text not read in the sixth session. In other words, the order of texts read was reversed for the two groups of students in the sixth and seventh sessions.

The interval between the sixth and the seventh sessions varied depending on the scheduling of the timetable and the attendance of the students. Generally the interval was about a week. The seventh session usually lasted for about forty minutes.

Preparation of the Data Base

The data base was derived from both test results and the analysis of T-O-L protocols, (Text) and (Questions). Both quantitative and qualitative analyses were required.

Quantitative Analysis of the Tests

Each test was scored and the performance of each student was recorded.

Coloured Progressive Matrices (Raven, 1965)

Students' responses were scored according to the answers provided in the manual. Each correct score was given a point and the scores of the twenty students can be found in Appendix 7.

There were no significant differences between the scores of the L1 and L2 students on the Coloured Progressive Matrices ($\chi^2=2.4014$, $N=20$, $p=.1212$).

Gates-MacGinitie Comprehension Subtest, Level C, Form 1, (1978)

The Comprehension subtest was scored according to the key provided by the publishers of the Gates-MacGinitie Reading Tests. The tables in the Teacher's Manual were used to convert students' raw scores into stanine scores.

Appendix 7 provides the scores of the twenty students on the Gates-MacGinitie Comprehension subtest.

L1 and L2 students did not differ significantly in their scores on the Gates-MacGinitie Comprehension subtest

when a Kruskal-Wallis test was performed ($\chi^2=.0914$, $N=20$, $p=.7624$).

Researcher-Developed Prior Knowledge Test

The test was scored according to a key developed by the researcher. Each item was scored as correct or incorrect. A correct answer received one point. Scores of the twenty students on the Whales and Insects items of the Prior Knowledge Test can be found in Appendix 7.

Kruskal-Wallis tests showed no significant differences at the .001 level between L1 and L2 students for the Whales items ($\chi^2=3.8629$, $N=20$, $p=.0494$); and for the Insects items ($\chi^2=1.4629$, $N=20$, $p=.2265$).

Researcher-Developed Question-Markers Matching Test

Students received a point for each correct match. Students' scores on this test could be found in Appendix 7.

Free-Telling of Prior Knowledge about Whales and Insects

Students' responses were taped, transcribed and scored using categories adapted from Langer and Nicolich (1981). Langer and Nicolich had used three categories: (i) Much Prior Knowledge Free-Telling, which received three points if it was an account that gave super-ordinate

concepts, definitions or linked one concept with another, (ii) Some Prior Knowledge Free-Telling, which received two points and was an account that provided examples, attributes or defining characteristics and (iii) Little Prior Knowledge Free-Telling, which received one point if it was an account that had associations or first-hand experiences.

The categories described by Langer and Nicolich (1981) were adapted so that an account which contained factual error, for example stating that spiders were insects, was categorized as showing Little Prior Knowledge Free-Telling. Examples of each category of free-telling are given for the topic of Insects.

(i) Much Prior Knowledge Free-Telling Account

Student #5 gave an account that was categorized as showing much Prior Knowledge. She said, "Insects are small, small bugs. Insects have six legs and more than two eyes. Their legs and their body have special names. They have small antennas. And ...um...they...they can die from coldness. And all insects have six legs and if they don't have six legs they are not an insect".

(ii) Some Prior Knowledge Free-Telling Account

The free-telling account given by Student #21 was classified as showing some Prior Knowledge. Her account was, "Insects are small. They eat other insects. Some are very tiny. Some have antennas. Some have spots on their back. The praying mantis eats grasshoppers".

(iii) Little Prior Knowledge Free-Telling Account

An example of a free-telling account that was scored as showing little Prior Knowledge was made by Student #15. He said, "Insects are small. Insects have no teeth. Insects have no tails. Insects don't have nails. Insects don't have six legs. Insects are brown and black".

Inter-rater reliability was established in the scoring of free-telling accounts. Twenty percent of the free-telling protocols were randomly selected and two doctoral students in the Reading Education area of the Language Education Department, Faculty of Education at University of British Columbia, independently scored them using a guide describing the scoring of the Prior Knowledge categories. Inter-rater reliability between the researcher and Rater A was 100%, and between the researcher and rater B was 96.77%.

Scores of the twenty students' free-telling of their Prior Knowledge about Whales and Insects can be found in Appendix 7.

There were no significant differences between the scores of the L1 and L2 students on the free-telling about Whales ($\chi^2=.0914$, $N=20$, $p=.7624$) and about Insects ($\chi^2=1.2857$, $N=20$, $p=.2568$).

Researcher-Developed Reading and Question-Answering Strategy
Rating Scales

A student received a score for rating each strategy statement based on the following criteria:

a strongly disagree rating	1 point
a disagree rating	2 points
a neutral rating	3 points
an agree rating	4 points
a strongly agree rating	5 points

Appendix 9 provides the scores of the twenty students derived from their rating of the Reading strategy statements after reading the Whales text; and students' rating scores after reading the Insects text can be found in Appendix 10. Appendix 11 provides the scores of the twenty students based on their rating of the Question-Answering strategy statements after answering questions on the Whales text; and students' rating scores after answering questions on the Insects text can be found in Appendix 12

Answers to Textually Explicit, Textually Implicit, and
Scriptally Implicit Questions

Textually Explicit questions were scored as correct or incorrect according to information found in the text. Each correct answer received one point.

Textually Implicit questions were scored according to a guide designed by the researcher. Each question received a maximum of two points since the answer was not directly expressed in the text.

Scriptally Implicit questions were scored according to a guide designed by the researcher. Each question received a maximum of three points since the answer was not stated in the text, and students had to use their Prior Knowledge.

Appendix 5 provides a copy of the guide for scoring Textually Explicit, Textually Implicit and Scriptally Implicit questions.

Inter-rater reliability was established in the scoring of the three types of questions. Two doctoral students in the Reading Education area of the Language Education Department, Faculty of Education at the University of British Columbia, independently scored a randomly selected twenty percent of the answers. They used a key provided by the researcher. Inter-rater reliability between Rater A and the researcher for the Textually Explicit questions was 100%, and between Rater B and the researcher was also 100%.

The same two doctoral students scored twenty percent of the Textually Implicit questions. For the Textually Implicit questions the inter-rater reliability was 95.65% between the researcher and Rater A, and between Rater B and the researcher it was also 95.65%.

For the Scriptally Implicit questions, twenty percent of which was scored by the same two doctoral students, the inter-rater reliability between Rater A and the researcher was 90.90%, and between Rater B and the researcher it was 88.37%, making a mean of 89.63%. Given the degree of ambiguity associated with Scriptally Implicit questions, this reliability quotient was thought to be reasonable and to a point where confidence could be put on the results.

When all three types of questions were combined the inter-rater reliability between Rater A and the researcher was 95.65%, and between Rater B and the researcher it was 94.89%, with a mean inter-rater reliability of 95.27%.

Appendix 8 provides a copy of the scores of the twenty students when they answered Textually Explicit, Textually Implicit and Scriptally Implicit questions in the Whales and Insects text.

Qualitative Analysis of the T-O-L (Text) and T-O-L (Questions) Protocols

Students' Think-Out-Loud responses were tape-recorded and transcribed by the researcher. An independent rater checked twenty percent of randomly selected Think-Out-Loud tape-recordings and protocols and reached an agreement of 99.62% with the researcher. It was considered that a reasonable level of confidence had been established that the

students' Think-Out-Loud responses were accurately transposed to script.

The Think-Out-Loud protocols were then divided into what Powell (1988) called "idea units" which she based on the work of Pritchard (1987). According to Powell an idea unit is a "group of related words that contains both a subject (stated or understood) and a verb phrase which, with its modifiers, forms a single idea" (p. 72). For example Student #2 read Whales Sentence 1 and then said, "I think that/ because they eat a lot."/ (The slashes (/) mark the boundary between the idea units.)

All idea units were read and re-read until patterns of similarities emerged. Idea units which were similar were grouped and labelled as a reading or question-answering strategy. To capture the nuances of readers' interactions with texts and questions, it was decided not to condense the list but to retain all the strategies the readers in this study exhibited in their Think-Out-Loud protocols.

Strategies which were similar were classified together under the same category. There were eight categories of strategies which readers used to understand texts and to answer questions. These categories are:

- A. Explanation of Text or Question
- B. Interpretation of Text or Question
- C. Evaluation of Text or Question
- D. Monitoring of One's Understanding
- E. Attempts to Understand Text or to Answer Questions
- F. Comments on Strategies
- G. Comments on Sources of Knowledge or of Answers
- H. Miscellaneous

Appendix 13 provides a list of these eight categories and of the seventy-seven strategies classified under these eight categories. Each strategy is defined and provided with an example from readers' Think-Out-Loud protocols.

Inter-rater reliability was established in the labelling of idea units. Two doctoral students in the Reading Education area of the Language Education Department, Faculty of Education at the University of British Columbia, independently rated twenty percent of randomly selected Think-Out-Loud responses. This took place after having an introductory session with the researcher who explained the definitions and provided a brief training session on a think-out-protocol which was not used in the independent rating.

Inter-rater reliability in categorizing idea units in Think-Out-Loud (Text) protocols was 70.65% between Rater A and the researcher, and 74.84% between Rater B and the researcher, and between the researcher and one other rater, either Rater A or B, the reliability was 83.08%.

Inter-rater reliability in categorizing idea units in the Think-Out-Loud (Questions) protocols was 75.83% between Rater A and the researcher, and 75.83% between Rater B and the researcher, and between the researcher and one other rater, either Rater A or B, the reliability was 82.32%.

Pritchard (1987) has stated that within his study inter-rater reliability of three raters was 84%. It was 82% for three raters in Powell's study (1988). Anderson (1989) had an inter-rater reliability of 74% for three raters and 80% for any two raters. In comparison to these studies, the inter-rater reliability coefficients in the present study were thought to be acceptable.

Quantifying T-O-L (Text) and T-O-L (Questions) Responses by Category and by Strategy

When inter-rater reliability in the labelling of idea units had been established, frequency counts were calculated for each category of strategies and for each specific strategy used by readers while reading and answering questions. These frequency counts are shown in Appendices 14 to 21.

L1 and L2 readers formed the collective units of analyses. In addition to the frequency counts, percentages were also calculated, and the tables in Chapter IV provide the frequency counts and the percentages of the categories of strategy and specific strategies used by L1 and by L2

readers while reading the two texts and while answering the three types of questions on those texts.

Validity

A study is valid in so far as it measures what it purports to measure. Three types of validity are discussed. These are:

- (1) Construct Validity
- (2) Internal Validity, and
- (3) External Validity.

Construct Validity

Construct validity specifically considers the extent to which a study measures the hypothetical construct of interest in the study. Yin (1986, p. 36) suggested the following three tactics to provide construct validity in a case study:

- (1) Using multiple sources of evidence
- (2) Establishing a chain of evidence, and
- (3) Having key informants review draft case study report.

This study has attempted to use all three tactics suggested by Yin.

Using Multiple Sources of Evidence

Two sources of evidence were employed in the study to collect data about the construct of interest, which were the students' use of Prior Knowledge and Non Prior Knowledge strategies in comprehension of a text and answering questions on that text. These two sources of evidence were: students' Think-Out-Loud responses and students' ratings of the researcher-developed Reading and Question-Answering Strategy Rating Scales.

Establishing a Chain of Evidence

Another method to establish construct validity is when the researcher seeks to establish a chain of evidence linking the research questions and the data base. An attempt was made to link the research questions presented at the beginning of this chapter with the data collected from the Think-Out-Loud method and from the Reading and Question-Answering Strategy Rating Scales. As well, the research questions and the data collected were linked with the findings and conclusions of the study.

Having Key Informants Review the Draft Case Study Report

Another process employed to establish construct validity used the Reading and Question-Answering Strategy

Rating Scales. This reading and question-answering rating scale was used with key informants who were young children in Grade Three and who might find it difficult to review draft reports about their strategies. In rating a researcher-developed reading or question-answering strategy statement soon after reading the text or answering questions, these Grade Three students were expressing their reaction to that statement. The reactions of these students would form an important part of the case study report.

Internal Validity

In an experiment, internal validity refers to the extent to which extraneous variables have been controlled by the researcher. Yin (1986) felt that internal validity is essential to maintain in causal case studies where a researcher is trying to determine whether event x led to event y. However, Yin stated that internal validity is, "inapplicable to descriptive or exploratory case studies" (p. 38). This present study is an exploratory case study design, and the need for internal validity is inapplicable to the study.

External Validity

External validity refers to the extent to which a study's findings are generalizable beyond the immediate case

study. According to Yin (1986) there are two kinds of generalizations that research relies on. One type is statistical generalization, such as when the results of surveys with correctly selected samples can be generalized to a larger population. The other type of generalization is an analytic generalization which case studies rely on. In analytic generalizations a researcher seeks to generalize a particular set of results to some broader theory.

The aim of this present case study was to investigate how average Grade Three L1 and L2 readers use their Prior Knowledge and Non Prior Knowledge strategies to comprehend and answer questions on texts. The findings of this case study, it is believed, would contribute to a broader theory of the role of Prior Knowledge and Non Prior Knowledge strategies in reading comprehension.

Yin (1986) also felt that analytic generalization requires replication of the findings to other cases. He stated that, "This replication logic is the same that underlies the use of experiments (and allows scientists to generalize from one experiment to another)" (p. 40). The results of this study invites replications to other cases.

Reliability

Reliability refers to the extent to which the results of the study could be reproduced by another researcher using the same procedures with the same type of subjects. To

ensure reliability, Yin (1986) suggested that the researcher provides a protocol of the case study and keeps a case study data base. This chapter was intended to serve as a protocol of the procedures followed in this study.

A data base is the researcher's detailed and organized records of interviews and documents. The researcher itemized the audio-tapes of the Think-Out-Loud sessions and the transcripts of those tapes. The data base also contains other documents such as students' work on the Comprehension subtest of the Gates-MacGinitie Reading Test, Level C, Form 1 (1978), students' test sheets of Coloured Progressive Matrices (Raven, 1965), students' work on the researcher-developed Prior Knowledge Test, and students' ratings of the statements on the Reading and Question-Answering Strategy Rating Scales.

This chapter has described the design of the case study, the instruments used, the pilot studies, the selection of subjects, the setting of the study, and the collection and preparation of the data base. As well, questions of validity and reliability of this case study have been discussed.

CHAPTER IV

ANALYSIS OF DATA

Since the study was designed as an exploratory one, the focus of the original questions was left deliberately broad at first. As objective tests were corrected and protocols analyzed, decisions were made about the specific questions that could appropriately be asked. These are listed below (See Questions of the Study).

As an additional note, it should be stated that a decision had to be made about whether or not between-text analyses should be added to the between-group analyses that were the focus of the study. It was concluded that it was the between-group analyses that served best the purposes of the study. Between-text analyses would, the researcher considered, shift the focus away from the students to the texts, with the concomitant questions about whether more "equivalent" texts might have produced more similar responses from text to text, as if that were a desirable result; and other questions might have arisen to produce more interest in the texts than in the students' differential responses to them. The conclusion was reached that with the purpose of the study being to explore differences between student groups, using common-interest material, between-text differences should not be included in

this report. Further study of between-text differences may be useful, but, for the moment, the researcher believed this should not be a focus of the study.

Questions of the Study

The questions of the study fell into two classifications: those related to Prior Knowledge strategies and those related to Non-Prior Knowledge strategies.

Two major questions and a number of related questions concerned the use of Prior Knowledge strategies as students interacted with text and answered three types of questions on the texts.

Classification One: Questions Related to Prior Knowledge Strategies

- 1 (a) Are there differences between L1 and L2 average Grade Three readers in their use of Prior Knowledge strategies when they interact with two texts (Whales and Insects) in a T-O-L (Text) procedure?
- (b) Do L1 and L2 average Grade Three readers give significantly different ratings on a Likert-type scale to statements about their use of Prior Knowledge strategies while reading?

- 2 (a) Are there differences between L1 and L2 Grade Three readers in their use of Prior Knowledge strategies when they answer each of the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two texts (Whales and Insects) in a T-O-L (Questions) procedure?
- (b) Are there differences between the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two texts (Whales and Insects) and use of Prior Knowledge strategies by (i) L1 average Grade Three readers and by (ii) L2 average Grade Three readers?
- (c) Do L1 and L2 average Grade Three readers give significantly different ratings to statements about their use of Prior Knowledge strategies while answering questions?
- (d) Are there statistically significant correlations between the scores of L1 and L2 average readers on the Prior Knowledge Test and their scores on the Textually Explicit, Textually Implicit and Scriptally Implicit questions on the Whales and Insects texts?
- (e) Are there statistically significant correlations between the scores of L1 and L2 average readers from their rating of Prior Knowledge strategy statements and their scores on the Textually Explicit, Textually Implicit and Scriptally Implicit questions on the Whales and Insects texts?

Two major questions and a number of related questions concerned the use of Non-Prior Knowledge strategies as students interacted with text and answered three types of questions on the texts.

Classification Two: Questions Related to Non Prior Knowledge
Strategies

- 3 (a) Are there differences between L1 and L2 average Grade Three readers in their use of the categories of Non Prior Knowledge strategies when they interact with two texts (Whales and Insects) in a T-O-L (Text)
- (b) Are there differences between L1 and L2 average Grade Three readers in their use of Non Prior Knowledge strategies when they interact with two texts (Whales and Insects) in a T-O-L (Text) procedure?
- (c) Do L1 and L2 average Grade Three readers give significantly different ratings to statements about their use of Non-Prior Knowledge strategies while reading?
- 4 (a) Are there differences between L1 and L2 average Grade Three readers in their use of the Non Prior Knowledge categories of strategies when they answer each of the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two

texts (Whales and Insects) in a T-O-L (Questions) procedure?

- (b) Are there differences between the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two texts (Whales and Insects) and the use of the categories of Non Prior Knowledge strategies by (i) L1 average Grade Three readers and (ii) L2 average Grade Three readers?
- (c) Are there differences between L1 and L2 average Grade Three readers in their use of Non Prior Knowledge strategies when they answer each of the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two texts (Whales and Insects) in a T-O-L (Questions) procedure?
- (d) Are there differences between the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) on two texts (Whales and Insects) and the use of Non Prior Knowledge strategies by (i) L1 average Grade Three readers and by (ii) L2 average Grade Three readers?
- (e) Do L1 and L2 average Grade Three readers give significantly different ratings to statements about their use of Non-Prior Knowledge strategies while answering questions?
- (f) Are there statistically significant correlations between the scores of L1 and L2 average readers from their rating of Non-Prior Knowledge strategy

statements and their scores on the Textually Explicit, Textually Implicit and Scriptally Implicit Questions on the Whales and Insects texts?

The results, which follow, are reported according to the questions described at the beginning of this chapter. These questions have been abbreviated in the title of each section for the sake of conciseness and readability.

Results Obtained From
Classification One: Prior Knowledge Strategies

Question One: Role of Prior Knowledge Strategies
in Readers' Interacting with Texts

Conclusions about the role of Prior Knowledge in L1 and L2 students' interactions with texts were drawn from two sources:

- (1) a qualitative analysis already described, followed by quantitative and graphic analyses, and finally intuitive analyses of the readers' Think-Out-Loud (Text) responses as they read aloud the sentences of two texts and commented on each sentence.
- (2) the readers' ratings, after reading, of statements about their use of Prior Knowledge while they were reading two texts.

Question 1 (a) Differences between L1 and L2 students in their use of Prior Knowledge strategies while reading two texts

In total, 26.7% of the responses of L1 students and 25.1% of the L2 students were considered to reflect use of the Prior Knowledge strategies as they read the Whales text (see Table 1).

For the Insects text 38.9% of the responses of L1 students showed a use of the Prior Knowledge strategies while the results of L2 students showed that 36% of their responses used the Prior Knowledge strategies.

All specific strategies considered to be Prior Knowledge based had been classified within the Interpretation Category although not every item on the Interpretation category was judged to be Prior Knowledge based. Therefore those strategies were selected from the list that were considered to reflect the use of Prior Knowledge during reading. These were listed in Table 1 as B (I) Interpretation Prior Knowledge. These strategies were: changing of mind, comparing, elaborating, expressing misconceptions, generalizing, giving examples, providing facts, providing measurement, stating probable ideas and visualizing. Table 1 provide the data of L1 and L2 readers' use of these specific Prior Knowledge strategies.

TABLE 1

L1 AND 12 READERS' USE
OF PRIOR KNOWLEDGE READING STRATEGIES
WHILE READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (I) Interpretation				
Prior Knowledge Category				
B 3 Changing of mind	3 (0.3%)	1 (0.1%)	6 (0.6%)	8 (0.7%)
B 4 Comparing	28 (2.7%)	26 (2.6%)	18 (1.7%)	28 (2.5%)
B 7 Elaborating	62 (6.1%)	91 (9.2%)	162 (14.9%)	170 (15.0%)
B 8 Expressing misconceptions	60 (5.9%)	48 (4.9%)	66 (6.0%)	64 (5.7%)
B10 Generalizing	3 (0.3%)	0 (0.0%)	1 (0.1%)	3 (0.3%)
B12 Giving examples	30 (3.0%)	7 (0.7%)	45 (4.1%)	17 (1.5%)
B14 Providing facts	47 (4.6%)	56 (5.7%)	90 (8.2%)	82 (7.2%)
B15 Providing measurement	6 (0.6%)	6 (0.6%)	5 (0.5%)	9 (0.8%)
B18 Stating probable ideas	13 (1.3%)	11 (1.1%)	20 (1.8%)	27 (2.3%)
B20 Visualizing	20 (1.9%)	2 (0.2%)	11 (1.0%)	0 (0.0%)
Total	272 (26.7%)	248 (25.1%)	424 (38.9%)	408 (36.0%)

Fig 2 is based on the data from Table 1. It shows that in this study both L1 and L2 students appeared to use the same Prior Knowledge strategies, but that there were apparent differences in the percentage of use of these strategies. L1 students seemed to use the giving examples (B12) and the visualizing (B20) strategies more frequently than L2 students did in both texts.

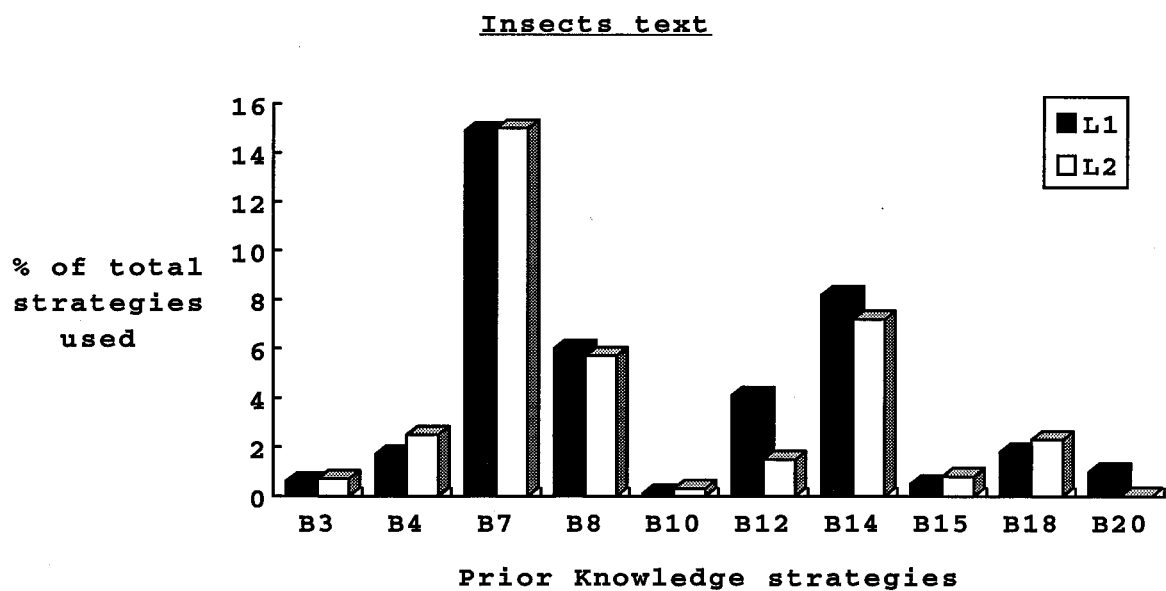
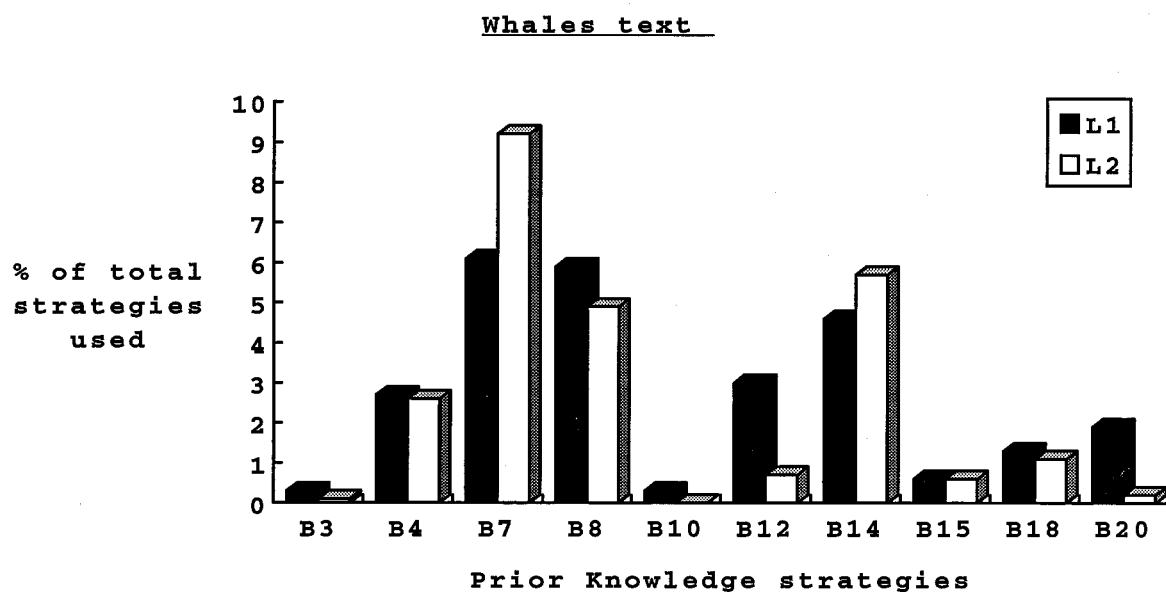
L2 students apparently used the elaborating (B7) and the providing facts (B14) strategies more frequently in the Whales text than L1 students did.

In the Insects text, L1 students of this study appeared to use the providing facts (B14) strategy more often than L2 students did.

Apparently there were differences between the two groups in their percentage of use of some Prior Knowledge strategies as they processed both texts. It was decided, as was discussed in the beginning of this chapter, not to consider the between-text differences.

FIG. 2

L1 AND L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES WHILE READING



In an intuitive analysis, the researcher interpreted these results to mean that L1 students were less "text bound" than L2 students in that they felt free to comment beyond the text. In a sense, L1 students used the words of the text as a springboard for a new idea.

L1 students seemed to give examples when they read a sentence. When student #18, an L1 student, read Sentence 16 in the Insects text "A few kinds of insects go south for the winter", he provided the example, "Monarch Butterflies".

L1 students also visualized using their Prior Knowledge. When Student #9, a L1 student, read Sentence 14 in the Whales text, "Some parts are used to make perfume", she visualized "That makes me think of...of a bottle". Again, this is a response that was stimulated by the text but was not in the text.

L2 students were judged to be more text-bound as they expressed their thoughts after reading sentences. They gave elaboration or descriptive details, about the sentences they read. For example, when Student #3, an L2 student, read Sentence 1 of the Whales text, "The biggest animal on land or sea is the whale", he elaborated, "It's really fat and big". He seemed to be adding to the "biggest" idea but did not add a new idea.

Question 1 (b) L1 and L2 readers' judgments about their use of Prior Knowledge strategies while reading texts

A second source of data about the readers' use of Prior Knowledge came from the Reading Strategy Rating Scale which was designed to elicit response to reading strategy statements (See Reading Strategy Scale Appendix 3). Of the total eighteen reading strategy statements seven referred to the readers' use of their Prior Knowledge.

A score of 1-3 would indicate that students believed they had not used Prior Knowledge in their response. A score of 3.5 to 5.0 would indicate that students believed moderately or strongly that they had used Prior Knowledge in their responses.

Mean scores and standard deviations on the seven Prior Knowledge statements were calculated for L1 and L2 students. Table 2 presents the data on the Prior Knowledge items of the Reading Strategy Rating Scale.

TABLE 2
MEAN RATINGS OF
PRIOR KNOWLEDGE READING STRATEGY STATEMENTS
(Standard deviations in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
D. I used what I already knew to help me understand this passage.	4.10 (0.94)	4.10 (0.94)	4.00 (1.09)	4.30 (1.00)
G. When I read I thought about something I had seen on T. V. or in movies.	2.90 (1.13)	3.30 (1.61)	3.20 (0.74)	3.70 (1.00)
K. The writer made me remember some things that had happened to me.	2.50 (1.20)	2.20 (1.16)	3.00 (0.77)	2.80 (1.46)
M. When I read some sentences I remembered some facts my teacher or my mon or dad had told me.	3.50 (1.11)	3.60 (1.20)	3.40 (1.28)	4.00 (1.34)
N. I could "see" pictures in my head when I read some sentences.	3.80 (1.13)	4.00 (0.97)	3.40 (1.01)	4.00 (1.34)
P. I knew a lot about (Whales/Insects) before I started reading this passage.	3.20 (1.32)	3.00 (0.77)	2.90 (1.22)	3.60 (1.20)
R. I read a book about (Whales/Insects).	3.60 (1.01)	4.20 (0.97)	3.50 (0.92)	3.90 (1.30)

Non-parametric Kruskal-Wallis tests were carried out to determine if there were significant differences between L1 and L2 students in their rating of each statement that referred to their use of Prior Knowledge strategies. No significant differences were found between L1 and L2 students in their rating of these statements for either text.

Although there were no significant differences between the scores of L1 and L2 students for either text when they rated Prior Knowledge strategy statements, there was evidence that the mean scores of their ratings were consistent with the data from their Think-Out-Loud (Text) protocols.

After having read the Whales and the Insects texts L1 and L2 students all agreed with statement (D), "I used what I already knew to help me understand this passage". Their mean score ranged from 4.00 for L1 students to 4.30 for L2 students. This positive rating tends to corroborate the findings from the Think-Out-Loud (Text) Protocols, in which all readers devoted from 25-38% of their oral comments to their use of Prior Knowledge.

There was a specific mean score that, superficially at least, was not consistent with the general findings. L2 students, who did not use the visualization strategy so often as L1 students did in their Think-Out-Loud (Text) protocols, received a mean score of 4.00 for statement (N),

"I could "see" pictures in my head when I read some sentences", while L1 students' mean score for the same statement was 3.80. Since Kruskal-Wallis tests did not reveal any significant differences between L1 and L2 students in their ratings of Prior Knowledge strategy statements, this inconsistency is not considered significant. It was interesting, however, that the group that rated the "seeing" pictures item higher did not in fact appear to use that strategy often so far as could be judged from their oral responses.

There were no reading strategy statements about the giving examples and elaborating strategies as the researcher's analysis of the (Text) protocols of the readers in the Third Pilot study did not indicate a use of these strategies. Thus the use of the giving examples and elaborating strategies is not supported by readers' ratings.

Summary of Findings on Question One

There was evidence in this study that both L1 and L2 readers used their Prior Knowledge strategies when they interacted with texts; and they made reference to their use of Prior Knowledge in 25-38% of their Think-Out-Loud (Text) protocols.

There were apparent differences between L1 and L2 students' in their use of the Prior Knowledge strategies. In both texts, L1 students seemed to use the Prior Knowledge

strategies of giving examples and visualizing more frequently than L2 students did. L2 students' use of the Prior Knowledge strategies of elaborating in the Whales text appeared to exceed L1 students' use of this strategy. These differences led the researcher to conclude that L1 and L2 students in this study had a different approach to the text.

L2 students were judged to be more text-bound than L1 students. They elaborated upon or added descriptive details to the text without adding new ideas to it. L1 students seemed to be less text-bound in their Think-Out-Loud (Text) protocols. They gave examples and visualized.

Readers' highly positive rating of statement (D), "I used what I already knew to help me understand this passage", corroborates the evidence obtained from the Think-Out-Loud (Text) protocols that readers used their Prior Knowledge strategies while reading the texts.

However, there was no supporting evidence from readers' rating of statements to validate the impressions that readers elaborated or gave examples because no statements that referred to giving examples or to elaborations had been included in the Reading Strategy Rating Scale.

Question Two: Role of Prior Knowledge Strategies in Readers'
Answering of Textually Explicit, Textually Implicit and
Scriptally Implicit Questions

The role of Prior Knowledge in answering the three types of questions (Textually Explicit, Textually Implicit and Scriptally Implicit) was determined by examining data from three sources:

- (1) readers' Think-Out-Loud (Questions) responses while answering questions of each type,
- (2) readers' rating of statements referring to their use of Prior Knowledge, and
- (3) the results of non-parametric Spearman tests used to study the correlations between readers' scores on the three types of questions and their scores on both the Prior Knowledge Test and their free-telling account of their Knowledge about Whales and Insects.

Question 2 (a) Differences between L1 and L2 students in their use of Prior Knowledge strategies while answering each of the three types of questions on each text.

Readers answered three Textually Explicit questions orally on each of the two texts. Replies were analyzed, frequency counts of the use of Prior Knowledge strategies

were tallied, and percentages calculated for L1 and L2 students. These results can be found in Table 3.

It should be noted that answers to Textually Explicit questions could be found in the text and readers were allowed to "lookback" before answering. Readers, therefore, did not have to use their Prior Knowledge when they answered this type of question. However, the readers in this study did express use of their Prior Knowledge while answering Textually Explicit questions.

When answering Textually Explicit questions on the Whales text L1 students used the Prior Knowledge category of strategy 13% of the time and L2 students used the Prior Knowledge category 28.4% of the time.

L1 students used the Prior Knowledge category 25.7% of the time when they answered Textually Explicit questions on the Insects text. L2 students used the Prior Knowledge category of strategy 28.9% of the time when they answered Textually Explicit questions on the Insects text.

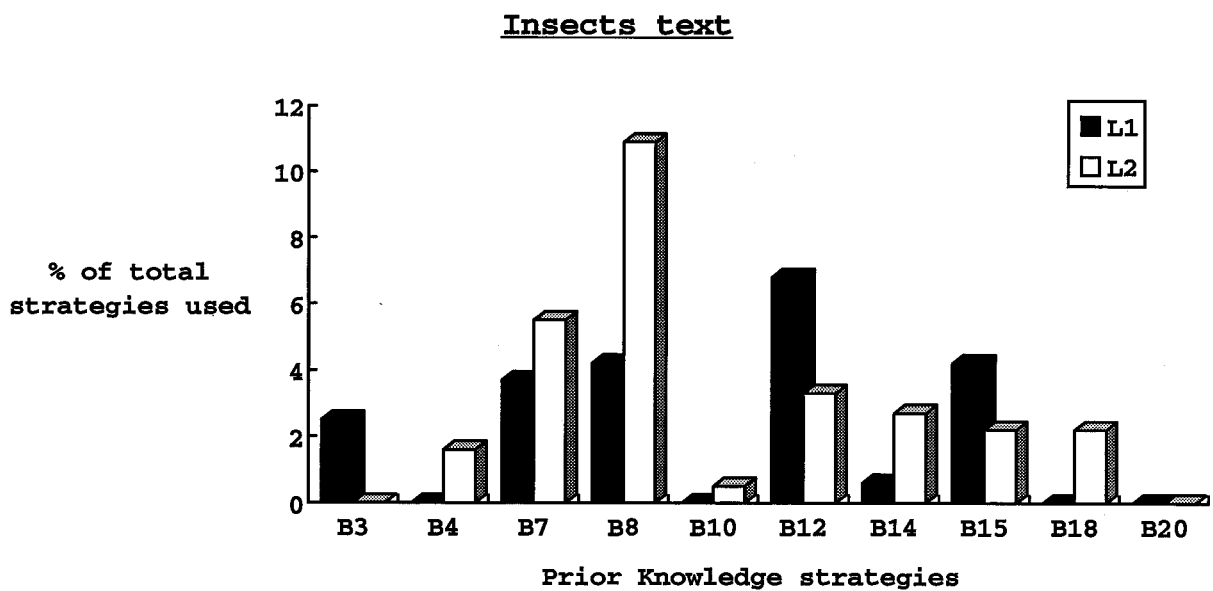
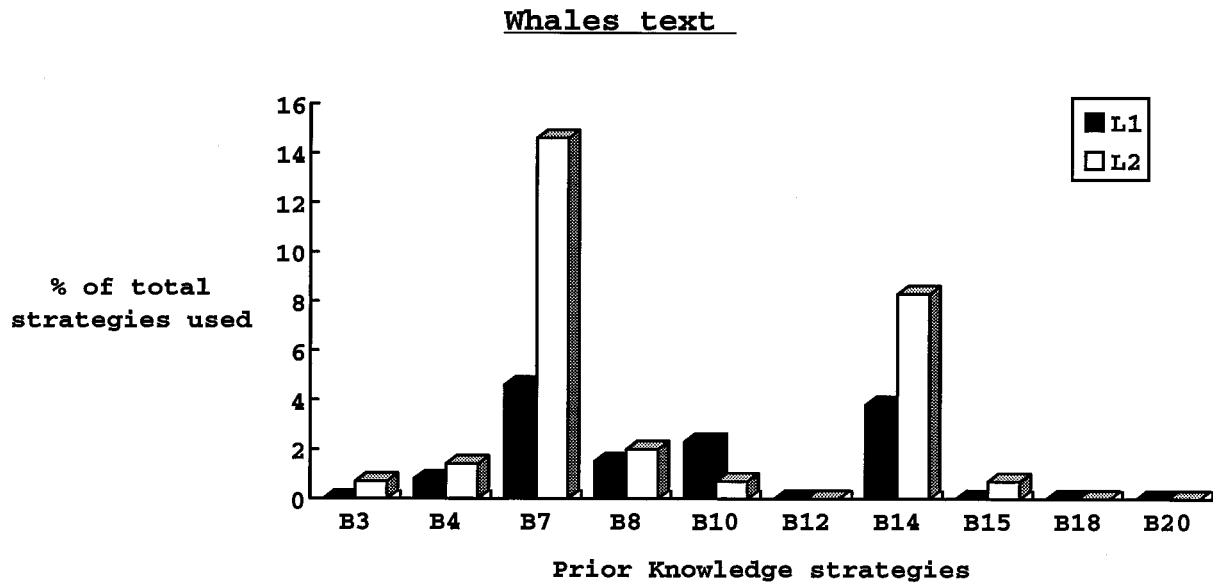
TABLE 3
L1 AND L2 READERS' USE OF
PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (I) Interpretation				
Prior Knowledge Category				
B 3 Changing of mind	0 (0.0%)	1 (0.7%)	4 (2.5%)	0 (0.0%)
B 4 Comparing	1 (0.8%)	2 (1.4%)	0 (0.0%)	3 (1.6%)
B 7 Elaborating	6 (4.6%)	21 (14.6%)	6 (3.7%)	10 (5.5%)
B 8 Expressing misconceptions	2 (1.5%)	3 (2.0%)	7 (4.2%)	20 (10.9%)
B10 Generalizing	3 (2.3%)	1 (0.7%)	0 (0.0%)	1 (0.5%)
B12 Giving examples	0 (0.0%)	0 (0.0%)	11 (6.8%)	6 (3.3%)
B14 Providing facts	5 (3.8%)	12 (8.3%)	1 (0.6%)	5 (2.7%)
B15 Providing measurement	0 (0.0%)	1 (0.7%)	7 (4.2%)	4 (2.2%)
B18 Stating probable ideas	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (2.2%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	17 (13.0%)	41 (28.4%)	42 (25.7%)	53 (28.9%)

Fig. 3 illustrates the data provided in Table 3. It depicts the apparent differences between L1 and L2 students in their use of Prior Knowledge strategies while answering Textually Explicit questions.

FIG. 3

L1 AND L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT QUESTIONS ON



L2 students seemed to use the elaborating (B7) and providing facts (B14) strategies more frequently than L1 students did in the Textually Explicit questions on both texts.

L1 students appeared to use the generalizing (B10) strategy more often than L2 students did while answering Textually Explicit questions on the Whales text.

L1 students of this study made more frequent use of the changing of mind (B3), giving examples (B12) and the providing measurement (B15) strategies than L2 students did while answering Textually Explicit questions on the Insects text.

L2 students apparently used the expressing misconceptions (B8) strategy more frequently than L1 students in the Textually Explicit questions on the Insects text.

Table 4 presents L1 and L2 students' use of Prior Knowledge strategies while answering Textually Implicit questions on both texts.

L1 students used Prior Knowledge strategies 15.2% of the time and L2 students used the same strategies 19.6% of the time while answering Textually Implicit questions on the Whales text.

While answering Textually Implicit questions on the Insects text L1 students used Prior Knowledge strategies 31.4% of the time while L2 students used these strategies 37.5% of the time.

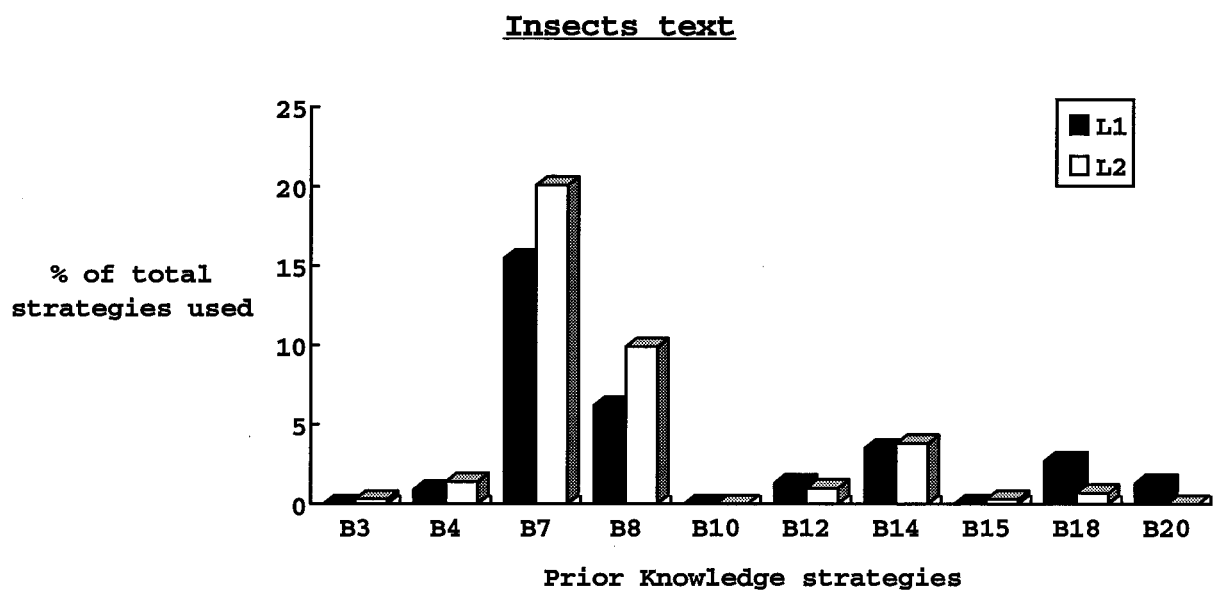
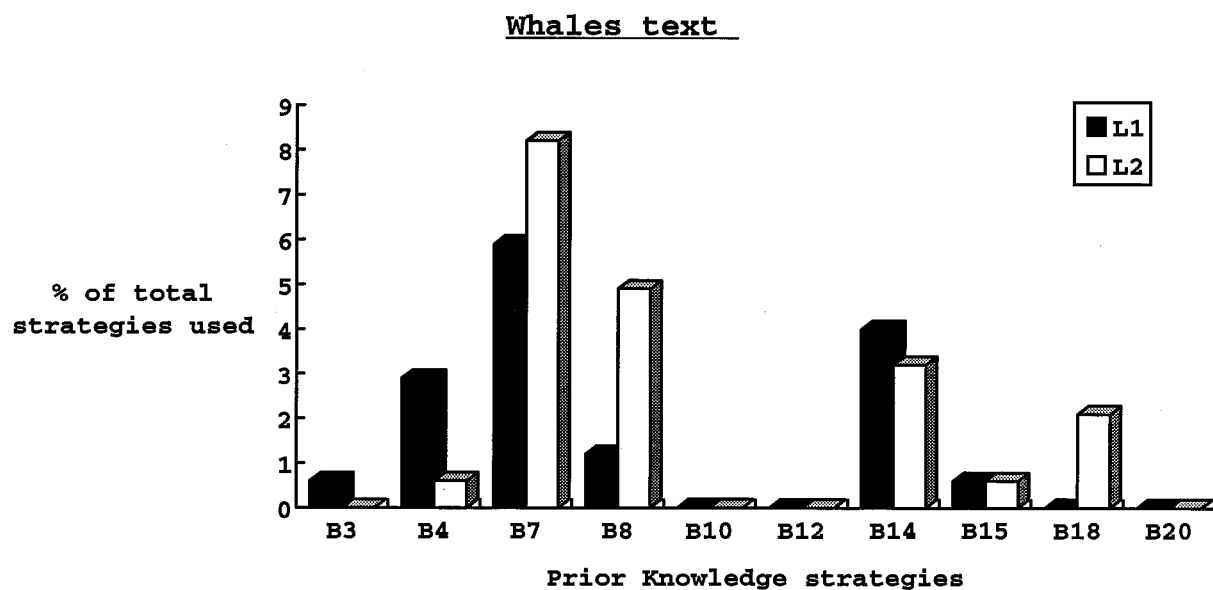
TABLE 4
L1 AND L2 READERS' USE OF
PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (I) Interpretation				
Prior Knowledge Category				
B 3 Changing of mind	1 (0.6%)	0 (0.0%)	0 (0.0%)	1 (0.3%)
B 4 Comparing	5 (2.9%)	1 (0.6%)	2 (0.9%)	4 (1.4%)
B 7 Elaborating	10 (5.9%)	15 (8.2%)	35 (15.5%)	59 (20.1%)
B 8 Expressing misconceptions	2 (1.2%)	9 (4.9%)	14 (6.2%)	29 (9.9%)
B10 Generalizing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B12 Giving examples	0 (0.0%)	0 (0.0%)	3 (1.3%)	3 (1.0%)
B14 Providing facts	7 (4.0%)	6 (3.2%)	8 (3.5%)	11 (3.8%)
B15 Providing measurement	1 (0.6%)	1 (0.6%)	0 (0.0%)	1 (0.3%)
B18 Stating probable ideas	0 (0.0%)	4 (2.1%)	6 (2.7%)	2 (0.7%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	3 (1.3%)	0 (0.0%)
Total	26 (15.2%)	36 (19.6%)	71 (31.4%)	110 (37.5%)

The differences between L1 and L2 students' use of Prior Knowledge strategies while answering Textually Implicit questions can be seen in Fig. 4, which is based on the data from Table 4.

FIG. 4

**L1 AND L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES WHILE
ANSWERING TEXTUALLY IMPLICIT QUESTIONS ON**



While answering Textually Implicit questions on both texts, L2 students apparently used the elaborating (B7) and the expressing misconceptions (B8) strategies more frequently than L1 students did. It was noted that L2 student seemed to use the elaborating (B7) strategy more often than L1 students did in the Textually Explicit questions on both texts.

L1 students appeared to use the comparing (B4) and providing facts (B14) strategies more often than L2 students in the Textually Implicit questions on the Whales text.

When L1 students in this study answered Textually Implicit questions on the Insects text, they used the stating probable ideas (B18) strategies more often than L2 students. On the other hand, L2 students apparently used this strategy more often in the Textually Implicit questions on the Whales text.

Table 5 portrays L1 and L2 students' use of Prior Knowledge strategies while answering Scriptally Implicit questions on both texts.

While answering Scriptally Implicit questions on the Whales text, L1 students used Prior Knowledge strategies 24.4% of the time while L2 students used these strategies 29.9% of the time.

L1 students used Prior Knowledge strategies 30.0% of the time, while L2 students used the same strategies 38.8% of the time when they answered Scriptally Implicit questions on the Insects text.

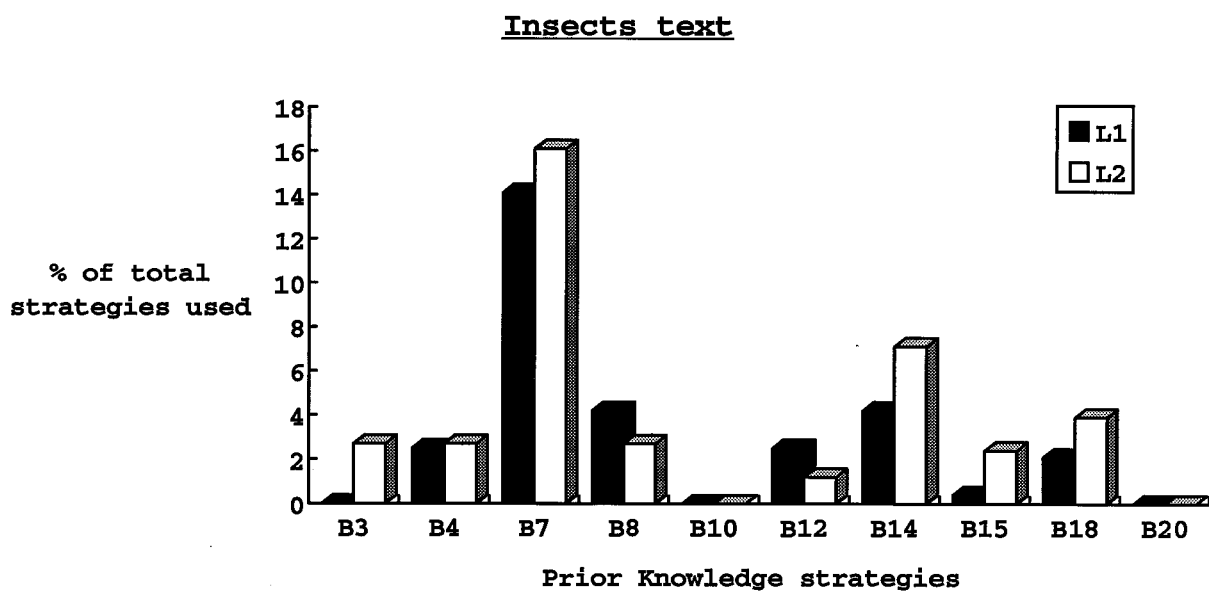
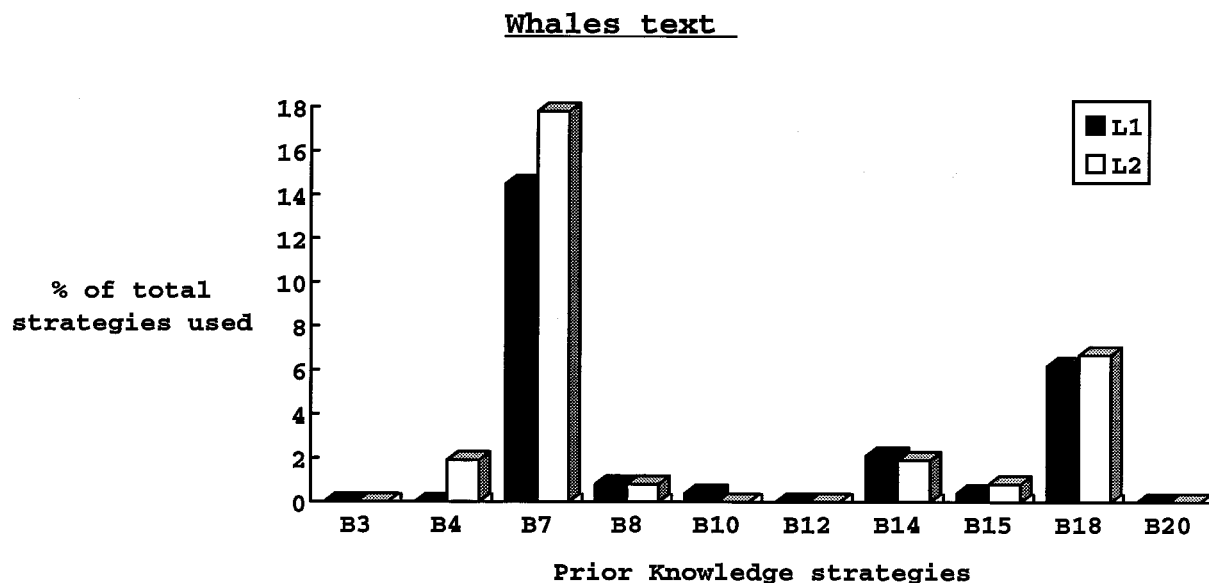
TABLE 5
L1 AND L2 READERS' USE OF
PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (I) Interpretation				
Prior Knowledge Category				
B 3 Changing of mind	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (2.7%)
B 4 Comparing	0 (0.0%)	5 (1.9%)	6 (2.5%)	7 (2.7%)
B 7 Elaborating	35 (14.5%)	45 (17.8%)	34 (14.1%)	41 (16.1%)
B 8 Expressing misconceptions	2 (0.8%)	2 (0.8%)	10 (4.2%)	7 (2.7%)
B10 Generalizing	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B12 Giving examples	0 (0.0%)	0 (0.0%)	6 (2.5%)	3 (1.2%)
B14 Providing facts	5 (2.1%)	5 (1.9%)	10 (4.2%)	18 (7.1%)
B15 Providing measurement	1 (0.4%)	2 (0.8%)	1 (0.4%)	6 (2.4%)
B18 Stating probable ideas	15 (6.2%)	17 (6.7%)	5 (2.1%)	10 (3.9%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	59 (24.4%)	76 (29.9%)	72 (30.0%)	99 (38.8%)

The data in Table 5 is presented graphically in Fig. 5. It shows the differences between L1 and L2 students in their use of Prior Knowledge strategies while answering Scriptally Implicit questions on both texts.

FIG. 5

L1 AND L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS ON



L2 students seemed to use the elaborating (B7) strategy more frequently than L1 students did while answering Scriptally Implicit questions on both texts, as had been the case when they answered Textually Explicit and Textually Implicit questions on both texts.

When L2 students answered Scriptally Implicit questions on the Whales text, they appeared to use the comparing (B4) strategy more often than L1 students did.

L1 students apparently used the expressing misconceptions (B8), and the giving examples (B12) strategies more frequently than L2 students in the Scriptally Implicit questions on the Insects text.

L2 students seemed to use the changing mind (B3), the providing facts (B14), the providing measurement (B15) and the stating probable ideas (B18) strategies more often than L1 students did in the Scriptally Implicit questions on the Insects text.

The differences depicted in Figures 3, 4 and 5 are evident. While answering the three types of questions on both texts, L2 students appeared to make use of the elaborating (B7) strategy more often than L1 students did. The researcher felt that L2 students in this study were text-bound while answering the three types of questions, adding descriptive details to the text. In other words, they seemed overly focussed on the text and were restrained by this behaviour.

Question 2(b) Differences between the three types of questions and the use of Prior Knowledge strategies by L1 and by L2 students.

Data were analyzed first for L1 students on the Whales text. Table 6 presents the data for L1 students' use of Prior Knowledge strategies for all three types of questions on the Whales text.

TABLE 6
 L1 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES
 WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
 (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
 ON THE WHALES TEXT
 (Percentages in parentheses)

	TE	L1 Whales TI	SI
B (I) Interpretation			
Prior Knowledge Category			
B 3 Changing of mind	0 (0.0%)	1 (0.6%)	0 (0.0%)
B 4 Comparing	1 (0.8%)	5 (2.9%)	0 (0.0%)
B 7 Elaborating	6 (4.6%)	10 (5.9%)	35 (14.5%)
B 8 Expressing misconceptions	2 (1.5%)	2 (1.2%)	2 (0.8%)
B10 Generalizing	3 (2.3%)	0 (0.0%)	1 (0.4%)
B12 Giving examples	0 (0.0%)	0 (0.0%)	0 (0.0%)
B14 Providing facts	5 (3.8%)	7 (4.0%)	5 (2.1%)
B15 Providing measurement	0 (0.0%)	1 (0.6%)	1 (0.4%)
B18 Stating probable ideas	0 (0.0%)	0 (0.0%)	15 (6.2%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	17 (13.0%)	26 (15.2%)	59 (24.4%)

L2 students' use of Prior Knowledge strategies while answering the three types of question under investigation on the Whales text can be seen in Table 7.

TABLE 7
 L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES
 WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
 (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
 ON THE WHALES TEXT
 (Percentages in parentheses)

	TE	L2 Whales TI	SI
B (I) Interpretation Prior Knowledge Category			
B 3 Changing of mind	1 (0.7%)	0 (0.0%)	0 (0.0%)
B 4 Comparing	2 (1.4%)	1 (0.6%)	5 (1.9%)
B 7 Elaborating	21 (14.6%)	15 (8.2%)	45 (17.8%)
B 8 Expressing misconceptions	3 (2.0%)	9 (4.9%)	2 (0.8%)
B10 Generalizing	1 (0.7%)	0 (0.0%)	0 (0.0%)
B12 Giving examples	0 (0.0%)	0 (0.0%)	0 (0.0%)
B14 Providing facts	12 (8.3%)	6 (3.2%)	5 (1.9%)
B15 Providing measurement	1 (0.7%)	1 (0.6%)	2 (0.8%)
B18 Stating probable ideas	0 (0.0%)	4 (2.1%)	17 (6.7%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	41 (28.4%)	36 (19.6%)	76 (29.9%)

Fig. 6. shows graphically the data from Tables 6 and 7. It illustrates the apparent similarities and differences between L1 and L2 students while answering the three types of questions.

Both L1 and L2 students appeared to use the elaborating (B7) and stating probable ideas (B18) strategies more frequently while answering Scriptally Implicit questions on the Whales text than when they answered the other two types of question.

Fig 6 depicts the apparent differences between L1 and L2 students while answering the three types of questions.

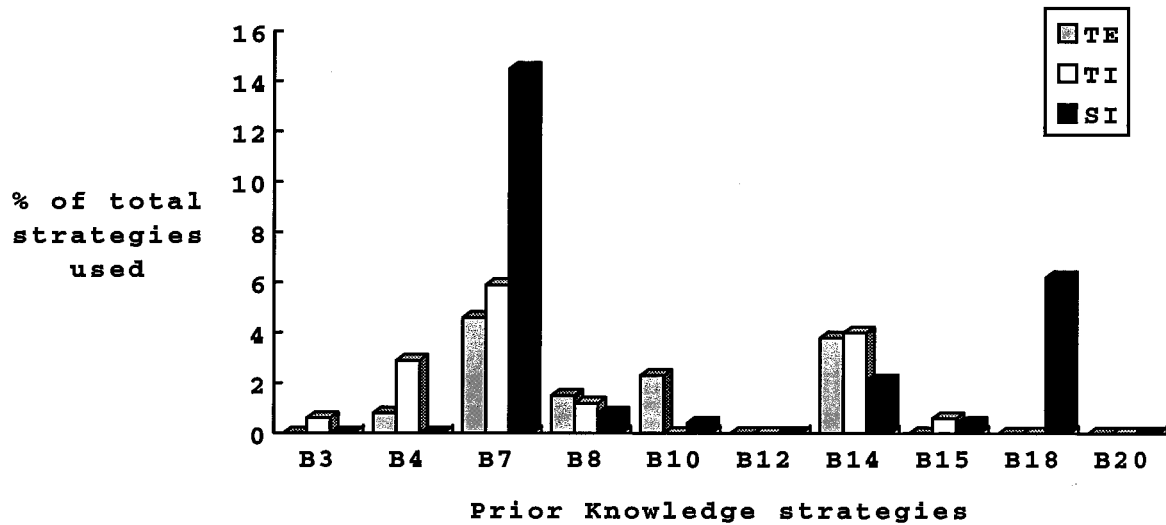
L1 students, but not L2 students, seemed to use the comparing (B4) strategy more often when they answered Textually Implicit questions than they did for the other two types of questions on the Whales text. They also apparently used the generalizing (B10) strategy more frequently in the Textually Explicit than in the other two types of questions on the Whales text.

Unlike the L1 students, the L2 students seemed to make more frequent use of the providing facts (B14) strategy in the Textually Explicit questions than in the other two types of questions on the Whales text. L2 students also appeared to use the expressing misconceptions (B8) strategy more often in the Textually Implicit questions than in the other two types of questions on the Whales text.

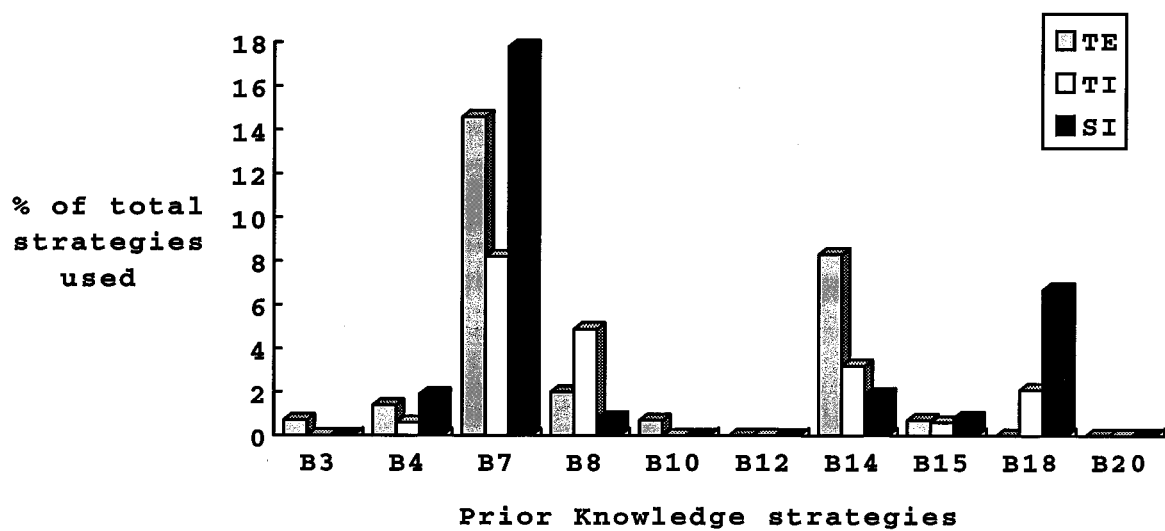
FIG. 6

USE OF PRIOR KNOWLEDGE STRATEGIES WHILE ANSWERING
TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT (TI), AND
SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE WHALES TEXT

L1



L2



Analysis were performed next for the Insects text. L1 students' use of Prior Knowledge strategies while answering the three types of question on the Insects text can be seen in Table 8.

TABLE 8
 L1 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES
 WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
 (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
 ON THE INSECTS TEXT
 (Percentages in parentheses)

	TE	L1 Insects TI	SI
B (I) Interpretation			
Prior Knowledge Category			
B 3 Changing of mind	4 (2.5%)	0 (0.0%)	0 (0.0%)
B 4 Comparing	0 (0.0%)	2 (0.9%)	6 (2.5%)
B 7 Elaborating	6 (3.7%)	35 (15.5%)	34 (14.1%)
B 8 Expressing misconceptions	7 (4.2%)	14 (6.2%)	10 (4.2%)
B10 Generalizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
B12 Giving examples	11 (6.8%)	3 (1.3%)	6 (2.5%)
B14 Providing facts	1 (0.6%)	8 (3.5%)	10 (4.2%)
B15 Providing measurement	7 (4.2%)	0 (0.0%)	1 (0.4%)
B18 Stating probable ideas	6 (3.7%)	6 (2.7%)	5 (2.1%)
B20 Visualizing	0 (0.0%)	3 (1.3%)	0 (0.0%)
Total	42 (25.7%)	71 (31.4%)	72 (30.0%)

Table 9 provides the data on L2 students' use of Prior Knowledge strategies while answering the three types of question on the Insects text.

TABLE 9
L2 READERS' USE OF PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

	TE	L2 Insects TI	SI
B (I) Interpretation			
Prior Knowledge Category			
B 3 Changing of mind	0 (0.0%)	1 (0.3%)	7 (2.7%)
B 4 Comparing	3 (1.6%)	4 (1.4%)	7 (2.7%)
B 7 Elaborating	10 (5.5%)	59 (20.1%)	41 (16.1%)
B 8 Expressing misconceptions	20 (10.9%)	29 (9.9%)	7 (2.7%)
B10 Generalizing	1 (0.5%)	0 (0.0%)	0 (0.0%)
B12 Giving examples	6 (3.3%)	3 (1.0%)	3 (1.2%)
B14 Providing facts	5 (2.7%)	11 (3.8%)	18 (7.1%)
B15 Providing measurement	4 (2.2%)	1 (0.3%)	6 (2.4%)
B18 Stating probable ideas	4 (2.2%)	2 (0.7%)	10 (3.9%)
B20 Visualizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	53 (28.9%)	110 (37.5%)	99 (38.8%)

Fig. 7 presents in graphic form the data in Tables 8 and 9.

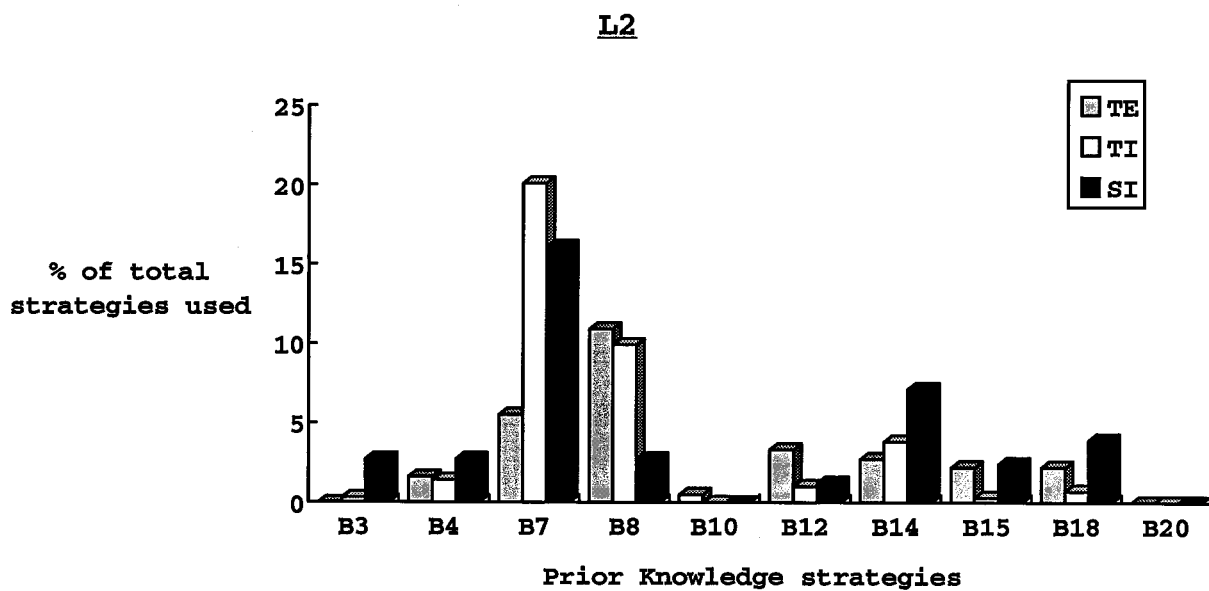
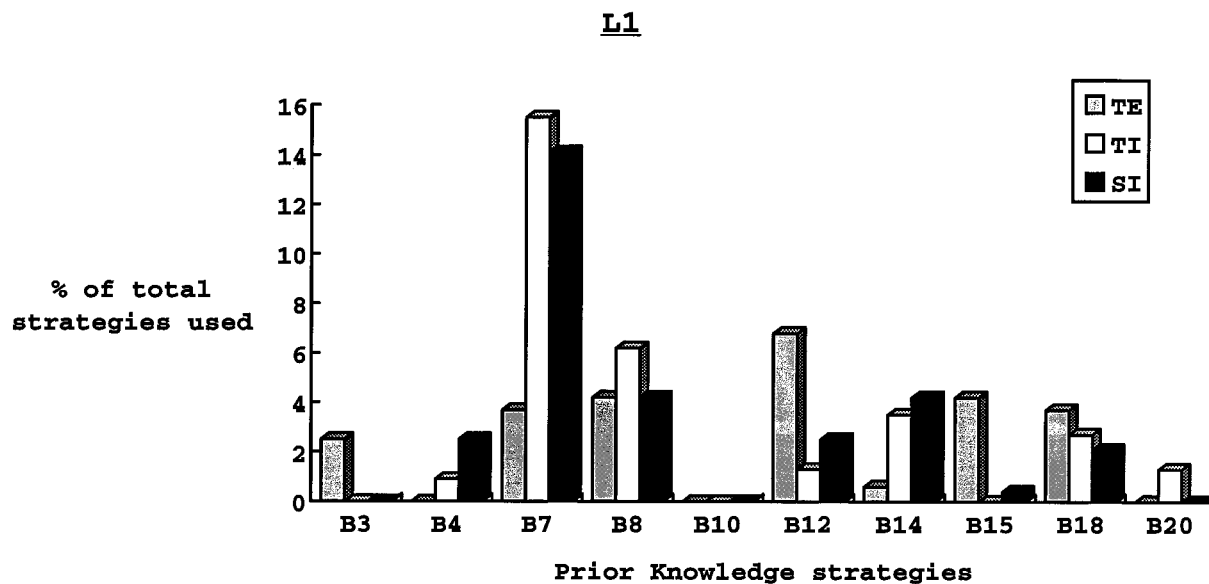
Fig. 7 shows the apparent similarities between L1 and L2 students in their use of Prior Knowledge strategies while answering the three types of questions. They seemed to use the giving examples (B12) strategy more frequently while answering Textually Explicit questions than they did when they answered the other two types of questions on the Insects text. They appeared to use the elaborating strategy (B7) more frequently in the Textually Implicit questions than in the other two types of question on the Insects text.

There were also apparent differences between the two language groups. L1 students, but not L2 students, seemed to use the changing mind (B3), the providing measurement (B15) and the stating probable ideas (B18) strategies more often while answering Textually Explicit questions on the Insects text.

L2 students, but not L1 students, apparently used the providing facts (B14) strategy more frequently in the Scriptally Implicit questions on the Insects text.

FIG. 7

USE OF PRIOR KNOWLEDGE STRATEGIES WHILE ANSWERING
TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT (TI), AND
SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE INSECTS TEXT



The graphs in Figures 6 and 7 apparently indicate that both L1 and L2 students used the elaborating (B7) strategy more frequently when they answered Textually Implicit questions on the Insects text and Scriptally Implicit questions on the Whales text. The researcher speculated that the students elaborated or added descriptive details in their attempt to answer Textually Implicit or Scriptally Implicit questions. The answers to these two types of questions were not explicitly stated in the text.

Both language groups appeared to use the giving examples (B12) strategy more frequently when they answered Textually Explicit questions than they did in the other two types of questions on the Insects text. They might have felt the need to add examples to the text when they answered Textually Explicit questions on the Insects text.

Question 2 (c) Readers' ratings of Question-Answering strategy statements about use of Prior Knowledge

Another source of data about the role of Prior Knowledge in the answering of the three types of questions asked came from readers' rating of statements about their use of Prior Knowledge in the task (See Question-Answering Strategy Rating Scales, Appendix 3).

Their rating received a score ranging from 1 when they disagreed strongly to 5 when they agreed strongly with the statement. A mean score of 3.50 to 5.0 would indicate

moderate or a good deal of agreement with the statement that was being rated.

Mean scores were calculated for the rating done by L1 and L2 students on the statements which referred to their use of Prior Knowledge. These mean scores and standard deviations can be found in Table 10.

TABLE 10
 MEAN RATINGS OF QUESTION-ANSWERING STRATEGY STATEMENTS
 RELATING TO PRIOR KNOWLEDGE
 (Standard deviations in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B. I knew the answers because they were about some things my teacher or my mom or my dad had told me.	3.90 (0.53)	4.00 (1.18)	3.30 (0.90)	4.20 (0.87)
D. I got the answers from watching T. V. or movies.	2.70 (1.41)	3.10 (1.37)	2.80 (1.07)	3.30 (1.73)
I. My answers came from what I had seen around me.	3.60 (1.01)	3.40 (1.20)	3.60 (1.20)	3.50 (1.43)
M. Before I read the sentences I already knew the facts to answer the questions.	3.10 (1.04)	3.00 (1.09)	2.50 (1.11)	3.00 (1.26)

For the Whales text both L1 and L2 students had very similar ratings on statements. Both gave high ratings to statement (B) about knowing the answer because they were about things their teacher or parents had told them. They gave low ratings to statement (D) about getting the answers from watching T.V. or movies and to statement (M) about knowing the facts to answer the questions before reading the text.

On the Insects text both L1 and L2 students agreed with statement (I) that their answers came from what they had seen around them. They both disagreed with statement (M) that they already knew the facts to answer the questions before they read the text and with statement (D) that they got the answers from watching T.V. or movies.

On the Insects text there was one difference between L1 and L2 students. L2 students agreed with statement (B) that their answers came from what they had been told by their teachers or their parents while L1 students did not.

In both texts neither L1 nor L2 students thought that their answers came from T. V., or movies. They also did not consider that they knew the facts before they answered the questions. This led the researcher to speculate that the L1 and L2 readers believed their answers to some questions came from sources other than their Prior Knowledge. These readers could have believed that they had used the text or other sources to answer some questions.

Kruskal-Wallis tests were carried out to determine if there were significant differences between L1 and L2 students in their scores from rating each statement about their use of Prior Knowledge. No significant differences were found between L1 and L2 students in their rating of these statements.

Question 2 (d) Correlations between two types of Prior Knowledge assessments and scores on the three types of questions on each text.

The third source of data for the role of Prior Knowledge in the answering of the three types of questions came from the results of non-parametric Spearman correlational tests. These tests were carried out to study the possibility of significant correlations between readers' scores when they answered the three types of questions, their scores on the researcher-developed Prior Knowledge tests, and their scores on free-telling accounts of their knowledge of Whales and Insects (See Appendices 7 and 8 for scores on the two types of Prior Knowledge assessments and on the three types of questions).

No significant correlations were found between the scores of L1 and L2 students on the Prior Knowledge Test and their scores on each of the three types of questions, or between their scores on the Free-Telling Accounts and their scores on each of the three types of questions.

The only correlation that approached significance was a negative one between L2's scores when they answered Textually Implicit questions on the Whales text and their scores on the Whales section of the Prior Knowledge Test ($r_s = -.8539$, $N=10$, $p=.002$). Table 11 shows the scores of L2 students on the Prior Knowledge (Whales) Test and their scores on the Textually Implicit questions on Whales

which were analyzed in a Spearman correlational test.

TABLE 11
L2 READERS' SCORES ON
PRIOR KNOWLEDGE (WHALES) TEST
AND ON TEXTUALLY IMPLICIT QUESTIONS ON THE WHALES TEXT

Student	Whales Prior Knowledge Test (Score out of 8)	Whales Textually Implicit Questions (Score out of 6)
2	4	6
3	6	4
10	7	4
13	5	4
14	4	6
22	4	6
23	7	4
25	2	6
26	6	4
27	5	6

This negative correlation, which approached significance, means that L2 students who scored high (with 5-7 points out of 8 items) on the Prior Knowledge Test, scored moderately low (with 4 points out of 6), on the Textually Implicit questions on the Whales text. It means that those L2 students who scored low (with 2-4 points) on the Prior Knowledge Test tended to score high (with 6 points) on the Textually Implicit questions on the Whales

text. This finding was reflected in the analysis done for question 2 (e) (see below).

Question 2 (e) Correlations between ratings on Prior Knowledge strategy statements and scores on the three types of questions on each text.

To study any possible correlations between readers' ratings of statements about Prior Knowledge and their scores on the three types of questions, non-parametric Spearman correlational tests were carried out.

One negative correlation approached significance. This was between L2's scores (see Table 12) while answering Textually Implicit questions on the Whales text and their rating of Reading Strategy Statement (P), "I knew a lot about Whales before I started reading this passage" ($r_s = -.7746$, $N=10$, $p=.009$).

TABLE 12
L2 READERS' RATINGS OF READING STRATEGY STATEMENT (P)
ABOUT THEIR KNOWLEDGE OF WHALES
AND THEIR SCORES ON TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES TEXT

Student	Ratings of Reading Strategy Statement (P) (Score out of 5)	Whales Textually Implicit Questions (Score out of 6)
2	3	6
3	4	4
10	3	4
13	3	4
14	3	6
22	2	6
23	4	4
25	2	6
26	4	4
27	2	6

This correlation, which approached significance, indicates that L2 students who believed they knew a lot about Whales and had a high score (4 out of 5) on the rating scale, scored moderately low (4 points out of 6) on the Textually Implicit questions on the Whales text. L2 students who believed they did not know a lot about Whales and had a low score of 2 on the rating scale, scored high (with 6 points out of 6) on the Textually Implicit questions on the Whales text.

Although this finding did not reach the stringent level of .001 significance it is of interest when one considers that the data in Fig 4 indicated that the L2 group

apparently expressed more misconceptions while they answered TI or Textually Implicit questions on the Whales text. One might speculate that L2 students in this study answered questions on the basis of low or inaccurate Prior Knowledge rather than from what they learned from the text.

This correlation is of interest as a correlation had been found previously (see Question 2 (d)), which approached significance between the L2 group's scores on Textually Implicit questions on the Whales text and their score on the Prior Knowledge (Whales) Test ($r_s = -.8539$, $N=10$, $p=.002$).

These findings seem to indicate that those L2 students who scored higher on the Prior Knowledge Test, or who believed they knew a lot about Whales, did not do so well on the Textually Implicit questions on the Whales text as those L2 students who scored lower on the Prior Knowledge test, or who believed they did not know a lot about Whales. These findings were interpreted to mean that L2 students had difficulty using their Prior Knowledge while answering Textually Implicit questions on the Whales text.

Summary of Findings on Question Two

The data from readers' Think-Out-Loud (Questions) protocols indicated that readers did use their Prior Knowledge while answering the Textually Explicit, Textually Implicit and Scriptally Implicit questions.

There were apparent differences between the two language groups. While answering each of the three types of questions on both texts L2 students seemed to use the elaborating strategy more frequently than L1 students did.

There were also apparent differences between the three types of questions. Both L1 and L2 students appeared to use the elaborating and the stating probable ideas strategies more often in the Scriptally Implicit questions than in the other two types of question on the Whales text. They seemed to use the giving examples strategy more frequently in the Textually Explicit questions on the Insects text. They apparently made more frequent use of the elaborating strategy in the Textually Implicit questions on Insects.

The data from readers' rating of statements about the use of Prior Knowledge were consistent with their Think-Out-Loud (Questions) protocols. In their T-O-L (Question) protocols L1 and L2 mentioned facts they had learned. L1 and L2 readers received scores of 3.90 and 4.00 respectively when they agreed with statement (B), "I knew the answers because they were about some facts my teacher, or my mom, or my dad had told me" after they answered questions on the Whales text.

L2 students' scored a mean of 4.20 when they rated the statement that they thought their answers to the question on the Insects text came from what they had been told by their teachers or parents. L1 students' score of 3.30 showed that they did not believe as strongly as L2

students did that their answers to questions on the Insects text came from what they had been told by their parents or teachers.

The correlational tests between readers' scores on answers to the three types of questions and their scores on the Prior Knowledge assessments, or between their scores when they rated statements about Prior Knowledge and their scores on answers to the three types of questions, indicated no significant correlations.

Two correlational tests produced results that approached the stringent level of significance that had been set at .001. In one case a negative correlation ($r_s = -.8539$, $N=10$, $p=.002$) was found between L2 students' scores on the Textually Implicit questions on Whales and their Prior Knowledge (Whales) Test results. In the other case, it was again a negative correlation ($r_s = -.7746$, $N=10$, $p=.009$) between L2 students' scores on the Textually Implicit questions on Whales and their scores when they rated the Reading Strategy Statement (P), "I knew a lot about Whales before I started reading the passage". L2 students' use of Prior Knowledge strategies seemed inadequate when they answered Textually Implicit questions on Whales.

L1 and L2 students seemed to be different in some ways but apparently they were also similar in their use of Prior Knowledge strategies when the three types of questions were compared.

Results Obtained from
Classification Two: Non Prior Knowledge Strategies

Question Three: Role of Non Prior Knowledge Strategies
in Readers' Interacting with Texts

Readers' Non Prior Knowledge strategies while interacting with texts could be seen from two sources:

- (1) their Think-Out-Loud (Text) protocols while reading the two texts, and
- (2) their rating of statements after having read the texts.

Question 3 (a) Differences between L1 and L2 students in their use of the categories of Non Prior Knowledge strategies while reading two texts.

Patterns of the use of categories of Non Prior Knowledge strategies emerged from the transcripts of the readers' Think-Out-Loud (Text) responses while reading the two texts. Appendix 13 provides a detailed description of these patterns and examples of each strategy from the readers' Think-Out-Loud (Text) protocols. Strategies which were similar in nature were classified under the same category.

All L1 and L2 students were found to be using the same seven categories of strategies. They used the following categories: Explanation of text, Interpretation of Text,

Evaluation of Text, Monitoring of Understanding, Attempts to Understand, Comments on Strategies and Comments on Sources of Knowledge.

Table 13 represents the data on L1 and L2 students' use of the seven categories of Non Prior Knowledge strategies.

TABLE 13

**L1 AND L2 READERS' USE OF THE SEVEN CATEGORIES
OF NON PRIOR KNOWLEDGE STRATEGIES WHILE
READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)**

		Whales		Insects	
		L1	L2	L1	L2
		(n=10)	(n=10)	(n=10)	(n=10)
A	Explanation	57 (5.6%)	116 (11.7%)	69 (6.3%)	130 (11.4%)
B (II)	Interpretation Non Prior Knowledge	168 (16.5%)	144 (14.6%)	75 (6.8%)	132 (11.6%)
C	Evaluation	126 (12.3%)	120 (12.1%)	94 (8.6%)	110 (9.7%)
D	Monitoring of Understanding	9 (0.9%)	7 (0.7%)	6 (0.6%)	6 (0.5%)
E	Attempts to Understand	12 (1.2%)	4 (0.4%)	9 (0.8%)	7 (0.6%)
F	Comments on Strategies	174 (17.1%)	163 (16.5%)	198 (18.1%)	160 (14.2%)
G	Comments on Sources of Knowledge	21 (2.1%)	22 (2.2%)	20 (1.8%)	12 (1.1%)
Total		567 (55.7%)	576 (58.2%)	471 (43.0%)	57 (49.1%)

Fig. 8 is based on Table 13. It illustrates that in the Whales text, L1 students appeared to use the category of Non Prior Knowledge Interpretation (B II) more frequently

than L2 students did. The reverse was true in the Insects text with L2 students apparently using more frequently the Non Prior Knowledge Interpretation (BII) category than L1 students did.

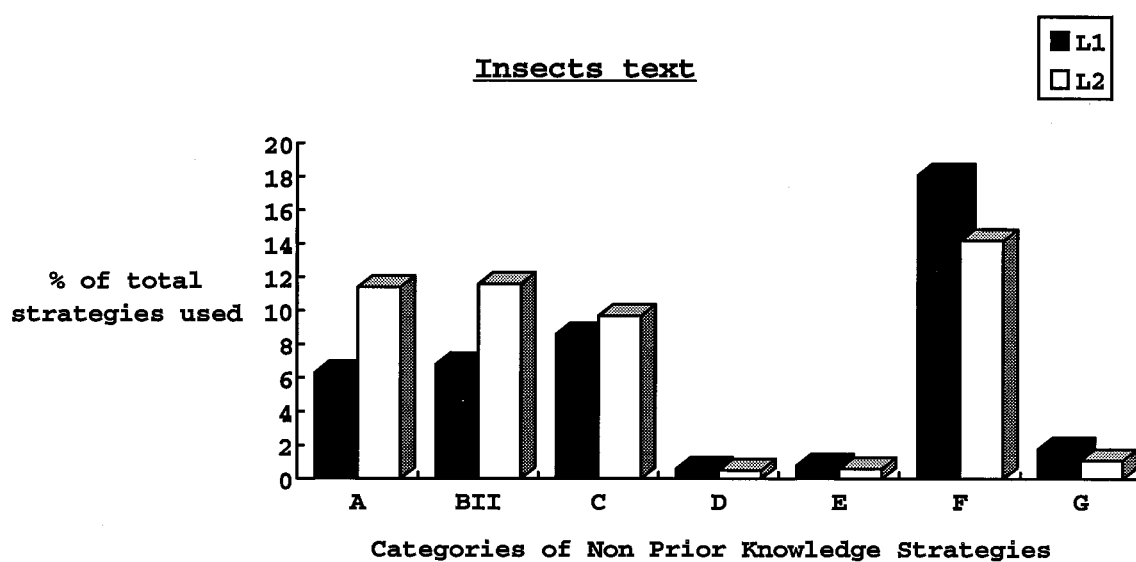
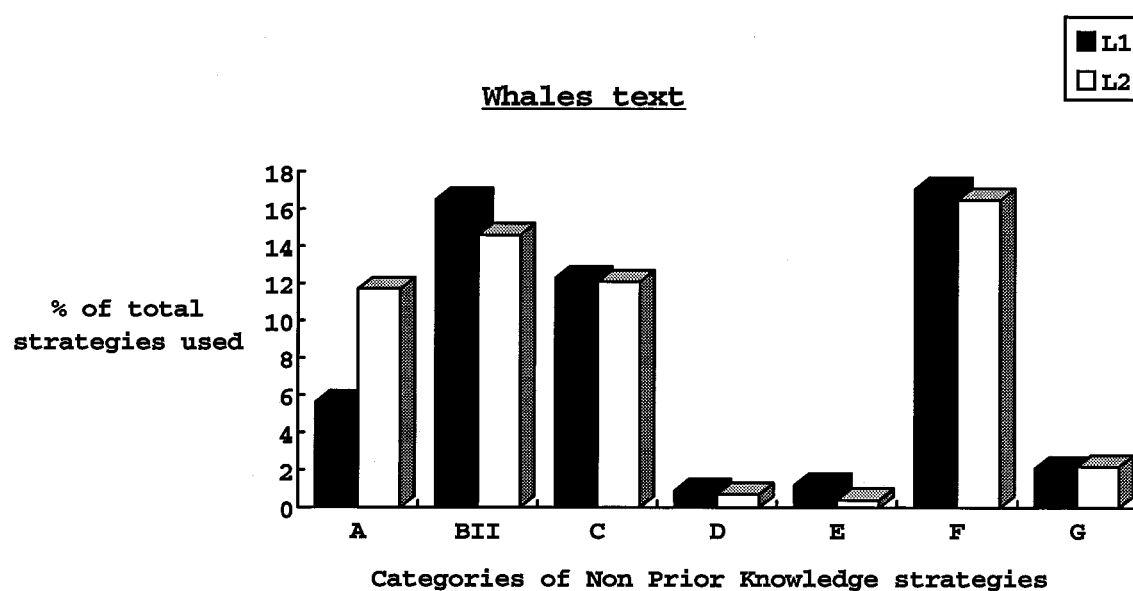
Fig 8 also demonstrates that L1 students seemed to use the category of Comments on Strategies (F) more frequently than L2 students did on the Insects text.

L2 students appeared to make use of the Explanation (A) category more often than L1 students did while reading both texts.

Apparently in both texts L2 students used the category of Explanation strategies more often than L1 students did, a behaviour that might suggest a tendency in L2 students to focus on the particular text.

FIG. 8

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES WHILE READING



Question 3 (b) Differences between L1 and L2 students in their use of specific Non Prior Knowledge strategies while reading the two texts.

Within each of the seven categories of Non Prior Knowledge strategies there was a number of specific strategies, which are described in Appendix 13.

Table 14 provides the data on L1 and L2 students' use of Explanation strategies for the two texts.

TABLE 14

L1 AND L2 READERS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

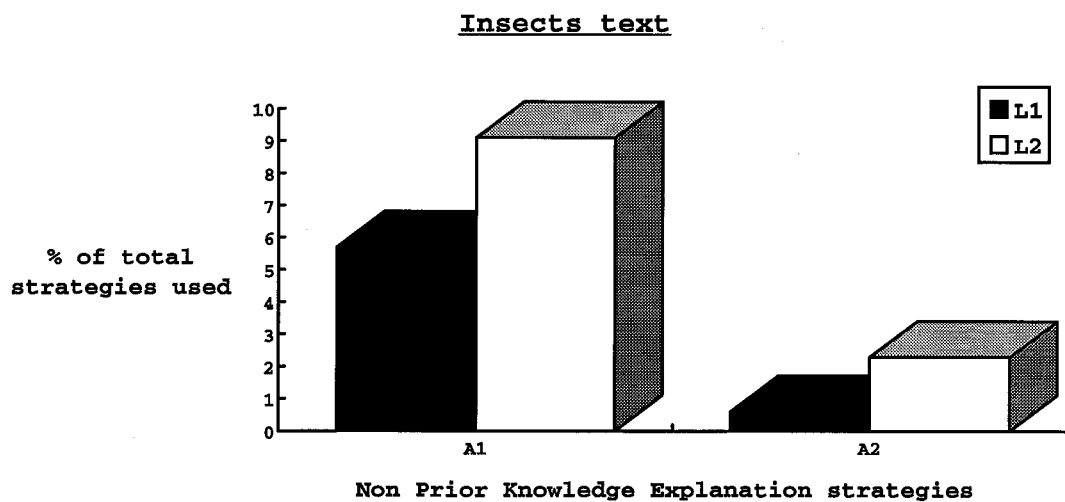
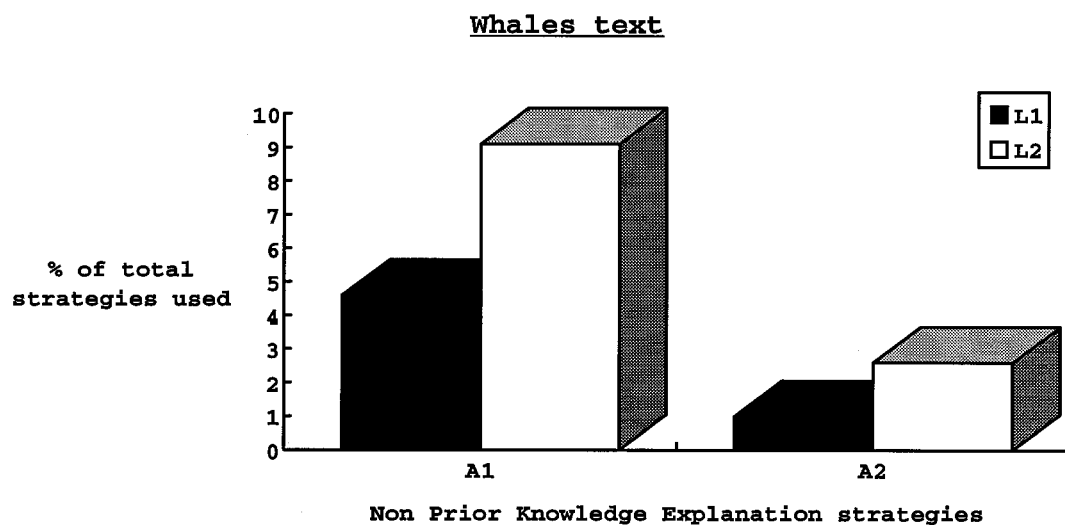
	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A1 Paraphrasing	47 (4.6%)	90 (9.1%)	63 (5.7%)	103 (9.1%)
A2 Quoting	10 (1.0%)	26 (2.6%)	6 (0.6%)	27 (2.3%)
Total	57 (5.6%)	116 (11.7%)	69 (6.3%)	130 (11.4%)

Fig. 9 is based on Table 14. It shows the apparent differences between L1 and L2 students in their use of specific Explanation strategies while reading two texts.

In both texts L2 students seemed to make more frequent use of the strategies of paraphrasing (A1) and quoting (A2). In other words, L2 students appeared to use the words of the text more often than L1 students did. The researcher interpreted these findings to mean that L2 students were focussed on the text.

FIG. 9

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE READING



Specific Non Prior Knowledge Interpretation
strategies were analyzed next (see Table 15).

TABLE 15
L1 AND L2 READERS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (II) Interpretation				
Non Prior Knowledge category				
B 5 Confirming	5 (0.5%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
B 6 Contradicting previous thought	2 (0.2%)	0 (0.0%)	1 (0.1%)	0 (0.0%)
B 9 Expressing suppositions	31 (3.1%)	9 (0.9%)	8 (0.7%)	23 (2.0%)
B11 Giving consequences	30 (2.9%)	26 (2.7%)	10 (0.9%)	31 (2.7%)
B13 Making inferences	41 (4.0%)	49 (4.9%)	7 (0.6%)	15 (1.3%)
B16 Reasoning	33 (3.3%)	55 (5.6%)	29 (2.7%)	55 (4.9%)
B17 Referring to previous sentences	20 (1.9%)	4 (0.4%)	16 (1.4%)	5 (0.4%)
B19 Summarizing	6 (0.6%)	1 (0.1%)	4 (0.4%)	2 (0.2%)
Total	168 (16.5%)	144 (14.6%)	75 (6.8%)	132 (11.6%)

Fig 10 shows graphically the data in Table 15. It illustrates the apparent differences between L1 and L2 students in their use of specific Non Prior Knowledge Interpretation strategies. In the Whales text L1 students seemed to use the expressing suppositions (B9) and referring to previous sentences (B17) strategies more often than L2 students did. L2 students apparently made more frequent use of the making inferences (B13) and the reasoning (B16) strategies than L1 students did.

In the Insects text L1 students appeared to use the referring to previous sentences (B17) strategy more frequently than L2 students did. L2 students seemed to use more often the strategies of expressing suppositions (B9), giving consequences (B11), making inferences (B13) and reasoning (B16) than L1 students did.

Apparently in both texts L1 students made more frequent use of the referring to previous sentences (B17) than L2 students did. L2 students seemed to use the making inferences (B13) and the reasoning (B16) strategies more often than L1 students did. The researcher believed this finding to mean that L2 students appeared to be attempting to interpret the immediate text by making inferences or linguistic connections and by giving reasons for the text. L1 students seemed less focussed on the immediate text and referred to previous sentences.

FIG. 10

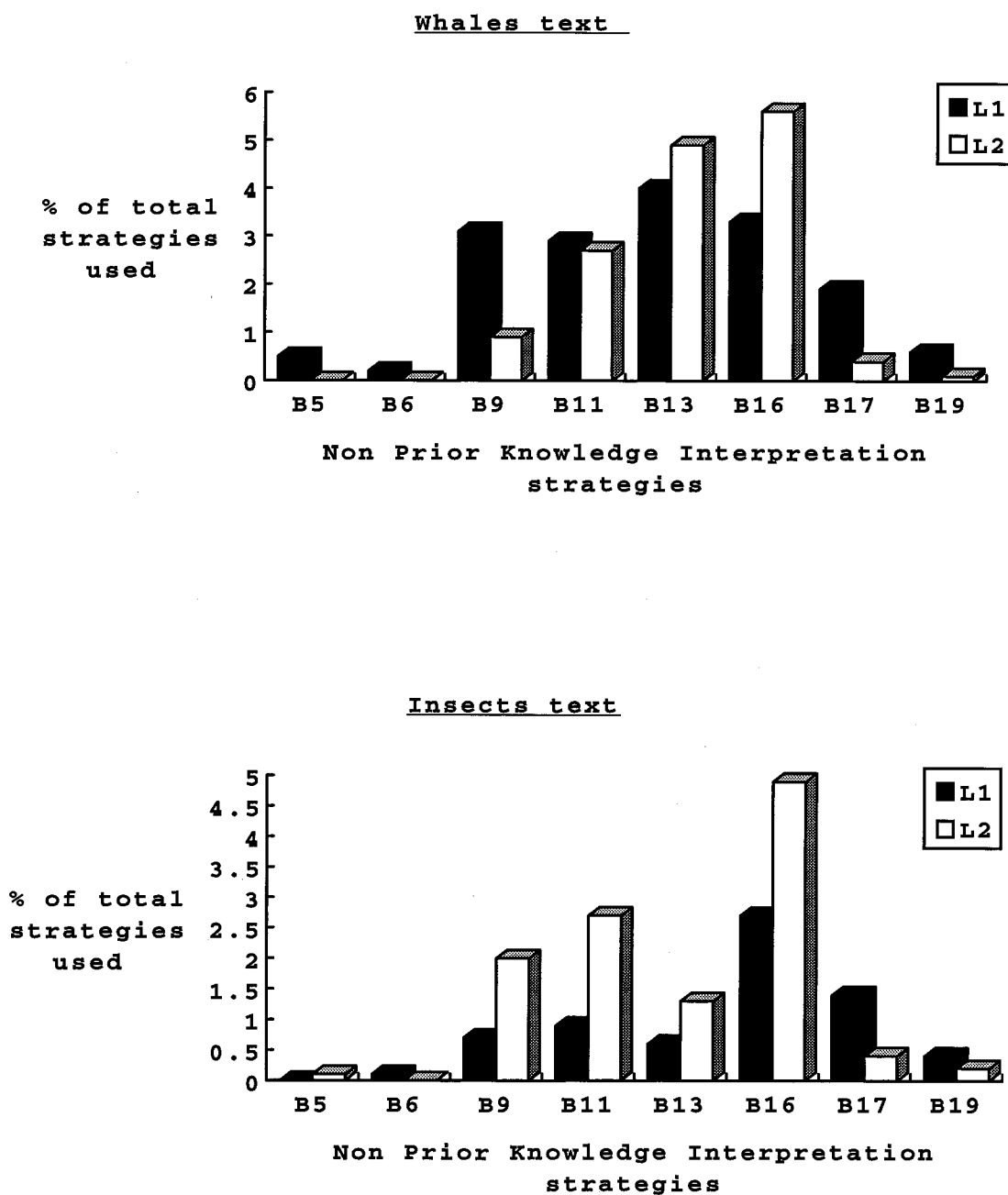
L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES WHILE READING

Table 16 presents the data for L1 and L2 students' use of specific Non Prior Knowledge Evaluation strategies while reading two texts.

TABLE 16

**L1 AND L2 READERS' USE OF
NON PRIOR KNOWLEDGE EVALUATION STRATEGIES
WHILE READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)**

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
C21 Agreeing	70 (6.9%)	53 (5.3%)	55 (5.0%)	41 (3.6%)
C22 Disagreeing	9 (0.9%)	9 (0.9%)	14 (1.3%)	18 (1.5%)
C23 Doubting	12 (1.2%)	6 (0.6%)	5 (0.5%)	1 (0.1%)
C24 Expressing personal reactions	11 (1.0%)	5 (0.5%)	2 (0.2%)	3 (0.3%)
C26 Judging truth	13 (1.3%)	2 (0.2%)	13 (1.1%)	8 (0.7%)
C27 Questioning	11 (1.0%)	45 (4.6%)	5 (0.5%)	39 (3.5%)
Total	126 (12.3%)	120 (12.1%)	94 (8.6%)	110 (9.7%)

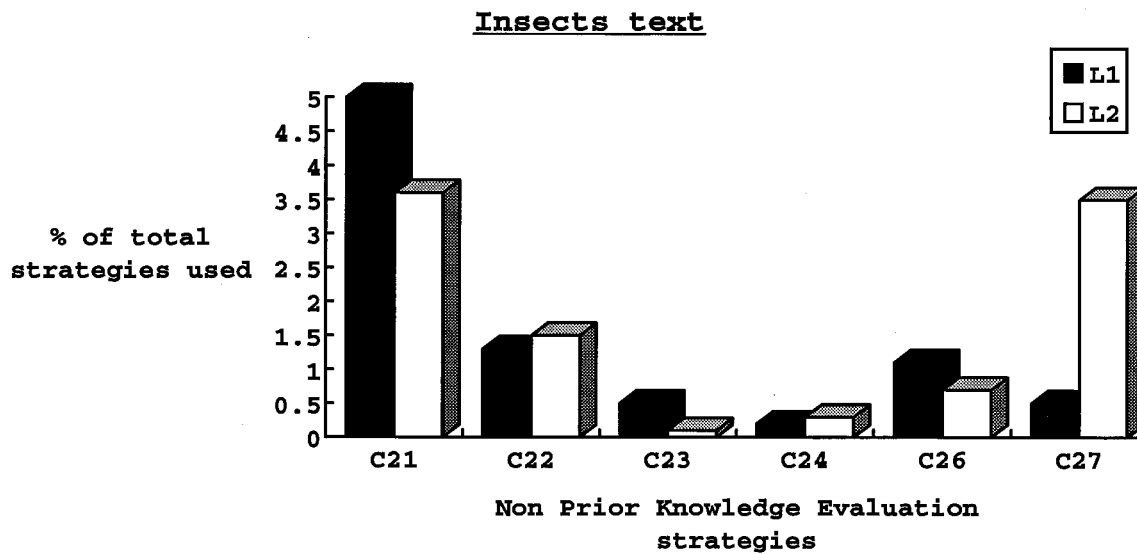
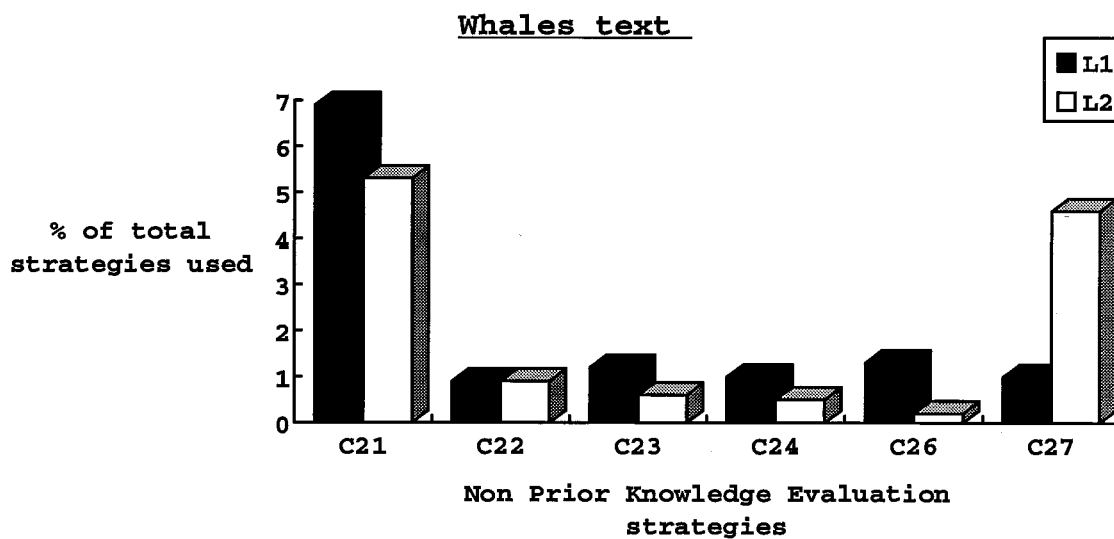
Fig 11 is based on Table 16. It shows the apparent differences between L1 and L2 students in their use of specific Non Prior Knowledge Evaluation strategies while reading two texts.

In both texts L1 students seemed to make more frequent use of the strategies of agreeing with the text

(C21) and judging the truth of statements in the text (C26) than L2 students did. L2 students appeared to use the questioning (C27) strategy more frequently than L1 students did. The researcher interpreted this finding to mean that L1 students seemed to be able to stand back from the text and judge whether they agreed with the truth of the statements in the text or not. L2 students appeared to be focussed on the text, turning statements in the text into questions.

FIG 11

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE EVALUATION
STRATEGIES WHILE READING



Monitoring of Understanding strategies are presented in Table 17. No conspicuous differences could be found between L1 and L2 students in their use of Monitoring of Understanding strategies in either text. In fact, overall, use of the strategies in this category was low.

TABLE 17

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE
 MONITORING OF UNDERSTANDING STRATEGIES WHILE
 READING THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
D28 Decoding difficult	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
D30 Text difficult	2 (0.2%)	1 (0.1%)	0 (0.0%)	4 (0.4%)
D31 Text not understood	5 (0.5%)	6 (0.6%)	6 (0.6%)	2 (0.1%)
D32 Text understood	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	9 (0.9%)	7 (0.7%)	6 (0.6%)	6 (0.5%)

Strategies within the Attempts to Understand category are shown in Table 18. There were no major differences between L1 and L2 students in their use of specific Attempts to Understand strategies while reading the two texts.

TABLE 18

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE
 ATTEMPTS TO UNDERSTAND STRATEGIES WHILE
 READING THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
E33 Ask someone	5 (0.5%)	0 (0.0%)	3 (0.3%)	0 (0.0%)
E35 Re-read	5 (0.5%)	2 (0.2%)	5 (0.4%)	6 (0.5%)
E37 Skip sentence	0 (0.0%)	2 (0.2%)	0 (0.0%)	0 (0.0%)
E38 Think	2 (0.2%)	0 (0.0%)	1 (0.1%)	1 (0.1%)
Total	12 (1.2%)	4 (0.4%)	9 (0.8%)	7 (0.6%)

Strategies within the Comments On Strategies category
 are shown in Table 19.

TABLE 19
L1 AND L2 READERS' USE
OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE READING THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
F39 Getting the answer	8 (0.8%)	1 (0.1%)	10 (0.9%)	2 (0.2%)
F40 Guessing	2 (0.2%)	0 (0.0%)	6 (0.6%)	0 (0.0%)
F41 Knowing	19 (1.8%)	6 (0.6%)	30 (2.8%)	7 (0.6%)
F42 Not able to answer	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F44 Not able to think	23 (2.3%)	3 (0.3%)	12 (1.1%)	3 (0.3%)
F45 Not knowing	73 (7.2%)	18 (1.8%)	65 (5.9%)	10 (0.9%)
F46 Not remembering	1 (0.1%)	0 (0.0%)	20 (1.8%)	3 (0.3%)
F47 Not sure	5 (0.5%)	8 (0.8%)	14 (1.3%)	8 (0.7%)
F48 Not willing to try	8 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F49 Remembering	0 (0.0%)	1 (0.1%)	1 (0.1%)	0 (0.0%)
F50 Thinking	34 (3.3%)	125 (12.7%)	39 (3.5%)	126 (11.1%)
F51 Trying	0 (0.0%)	1 (0.1%)	1 (0.1%)	1 (0.1%)
Total	174 (17.1%)	163 (16.5%)	198 (18.1%)	160 (14.2%)

Fig. 12 shows the data in Table 19. It demonstrates the apparent differences between L1 and L2 students in their use of specific Non Prior Knowledge Comments on Strategies while reading both texts.

In both texts L1 students seemed to make more frequent use of the comments of knowing (F41), and not knowing (F45) than L2 students did. L2 students apparently commented more frequently about thinking (F50) than L1 students did.

In the Whales text L1 students appeared to comment more often about not being able to think (F44) than L2 students did. In the Insects text L1 students seemed to remark on not remembering (F46) more frequently than L2 students did.

Apparently in both texts L1 students felt free to comment on their knowledge or lack of knowledge about the text. L2 students commented on their act of thinking about the text, indicating that they were focussed on the text.

FIG. 12

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE READING

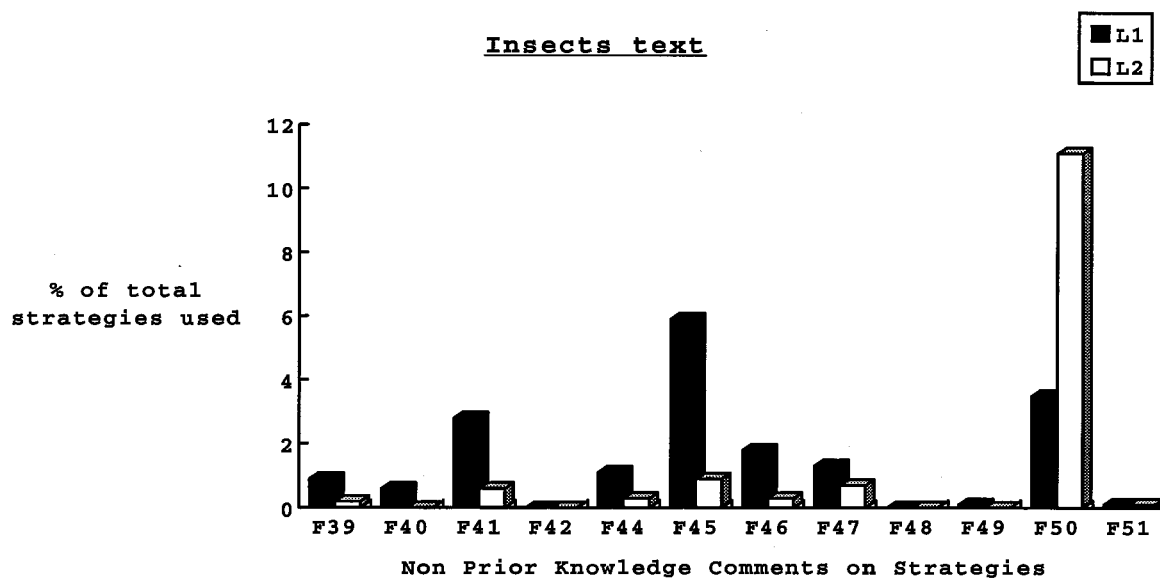
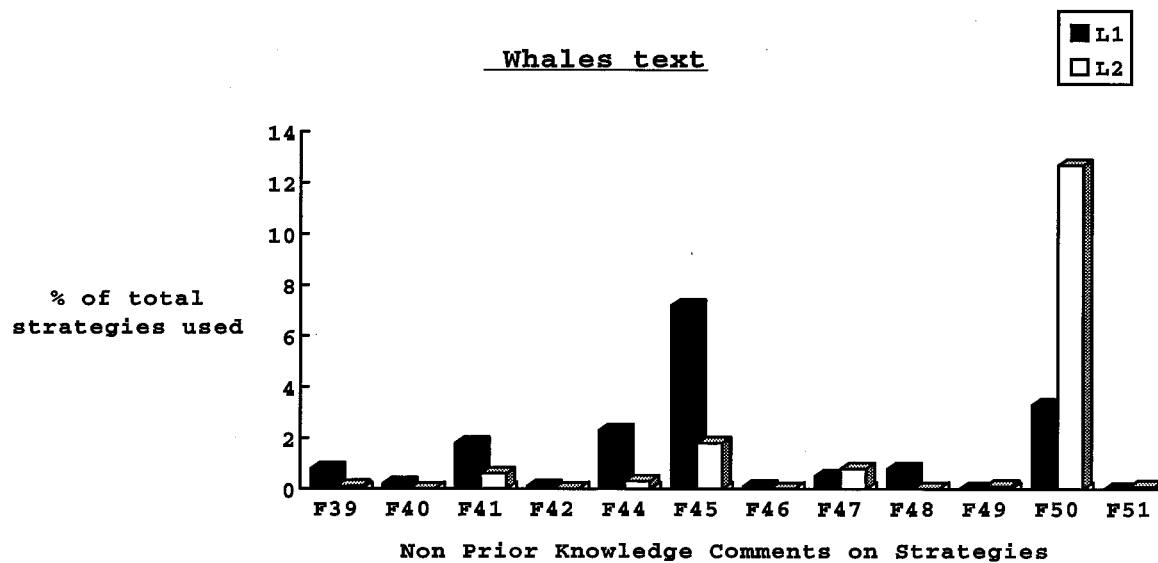


Table 20 illustrates the frequency of use of strategies within the category of Comment on Sources of Knowledge. No differences were found in both texts between L1 and L2 students in their use of strategies within the Comments of Sources of Knowledge category. In fact, overall, the use of strategies in this category was low.

TABLE 20
 L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE
 COMMENTS ON SOURCES OF KNOWLEDGE STRATEGIES
 WHILE READING THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G53 Books	2 (0.2%)	0 (0.0%)	5 (0.4%)	3 (0.3%)
G54 Experience	4 (0.4%)	3 (0.3%)	2 (0.2%)	0 (0.0%)
G55 Films	0 (0.0%)	0 (0.0%)	3 (0.2%)	0 (0.0%)
G56 Hearing	2 (0.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G57 Learned from schools	0 (0.0%)	6 (0.6%)	1 (0.1%)	4 (0.4%)
G60 Not having experienced	5 (0.5%)	3 (0.3%)	1 (0.1%)	0 (0.0%)
G61 Not having learned	0 (0.0%)	2 (0.2%)	0 (0.0%)	0 (0.0%)
G62 Not having read	0 (0.0%)	1 (0.1%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	1 (0.1%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
G64 People	4 (0.4%)	2 (0.2%)	0 (0.0%)	3 (0.3%)
G68 Reading	3 (0.3%)	1 (0.1%)	4 (0.4%)	0 (0.0%)
G70 Seeing	0 (0.0%)	3 (0.3%)	4 (0.4%)	1 (0.1%)
G71 Television	0 (0.0%)	1 (0.1%)	0 (0.0%)	0 (0.0%)
Total	21 (2.1%)	22 (2.2%)	20 (1.8%)	12 (1.2%)

To summarize the findings on Question 3 (b):

L2 students apparently made more frequent use than L1 students did of the Explanation strategies of paraphrasing and quoting in both texts.

In both texts L1 students seemed to use the Non Prior Knowledge Interpretation strategy of referring to previous sentences more frequently than L2 students did. L2 students appeared to make more frequent use of the making inferences and the reasoning strategies than L1 students did.

L1 students seemed to use more frequently than L2 students did in both texts the Evaluation strategies of agreeing and judging the truth of statements in the text. Apparently in both texts L2 students used the questioning strategy more often than L1 students did.

Within the category of Comments on Strategies, L1 students seemed to use the knowing and not knowing strategies more often than L2 students did in both texts. L2 students appeared to make more frequent use of the thinking strategy than L1 students did.

There were no apparent differences between L1 and L2 students in their use of specific Monitoring of Understanding strategies, Attempts to Understand strategies or Comments on Sources of Knowledge strategies.

Question 3 (c) Readers' rating of statements about Non Prior Knowledge reading strategies.

The second source of data about Non Prior Knowledge strategies which readers employed came from their rating of statements which were read to them by the researcher after they had finished Thinking-Out-Loud about the sentences in each of the two texts. These statements were compiled from a search of the literature on Reading Education and included statements about prediction, re-reading, using context, changing reading rate and making inferences (See Appendix 3)

Their rating received a score ranging from 1 when they disagreed strongly with the statement to 5 when they strongly agreed with it. A mean score of 3.5 to 5.0 would indicate that the readers of that group moderately or strongly agreed with the statement. Table 21 provides the mean scores for the ratings made by the L1 and L2 students.

TABLE 21
 MEAN RATINGS
 OF NON PRIOR KNOWLEDGE READING STRATEGY STATEMENTS
 (Standard deviations in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A. I understood all the sentences.	3.30 (1.00)	4.00 (0.63)	3.40 (0.80)	4.10 (0.70)
B. I guessed what would come in the following sentences.	2.80 (1.16)	2.60 (1.28)	2.90 (0.70)	2.90 (1.22)
C. My guess about what would come in the next sentence was right.	3.20 (1.16)	2.70 (1.10)	2.50 (0.92)	2.80 (1.32)
E. I read some sentences again that I didn't understand.	3.50 (0.92)	3.20 (1.16)	3.30 (0.90)	2.70 (1.26)
F. I just went on reading when I came to some difficult words.	3.20 (1.16)	2.90 (1.44)	3.30 (0.90)	2.70 (1.26)
H. When I read some sentences I said to myself, "I don't get it."	3.60 (0.91)	2.80 (0.87)	3.40 (0.91)	2.60 (1.20)
I. I think the writer forgot to write some facts I know about (Whales/Insects).	2.40 (1.01)	3.10 (1.22)	3.00 (1.18)	3.00 (1.54)
J. I stopped and thought about the meaning of some hard sentences.	3.60 (0.80)	2.90 (1.04)	3.90 (0.53)	2.50 (1.11)
L. Some difficult words became more clear after I read more sentences.	3.80 (0.60)	3.60 (1.28)	3.40 (1.11)	2.40 (1.28)

TABLE 21 (Continued)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
O. I had to read some sentences more slowly than other sentences.	3.50 (1.11)	3.70 (0.90)	2.90 (1.22)	2.90 (0.94)
Q. When I read some sentences, I thought some facts were missing, and I added or filled in those facts.	3.20 (1.32)	3.00 (0.77)	2.60 (0.66)	2.00 (1.00)

To determine if there were significant differences between the ratings of L1 and L2 students for each statement, non-parametric Kruskal-Wallis test were carried out. No significant differences were found.

Although there were no significant differences between the ratings of L1 and L2 students, their mean scores in Table 21 reflect some of the findings in the L1 and L2 students' Think-Out-Loud (Text) Protocols

A number of high ratings by the L1 group on the Whales text (statements E, H, J, L, O) carries the implication that they found the text somewhat difficult. L2 students agreed only on statements L and O.

L1 and L2 students judged that some difficult words became more clear after they read more sentences in the Whales text (statement L).

Both L1 and L2 students believed that they had to read some sentences more slowly in the Whales text (Statement O).

Most statements did not receive an "agreement" rating for the Insects text. L1 students did agree with statement (J) that they stopped and thought about the meaning of some hard sentences. L2 students agreed with statement (A) that they understood all the sentences.

These findings are interesting when one considers that L1 and L2 students expressed greater use of their Prior Knowledge in their Insects Think-Out-Loud (Text) than in their Whales (Text) protocols. The researcher speculated that L1 and L2 readers, who both agreed that they read some sentences in the Whales text slowly, spent less time as a result on Thinking-Out-Loud about their Prior Knowledge in the Whales text.

The researcher felt that L1 students seemed willing to admit their lack of understanding while reading the Whales text. L1 students, but not L2 students, believed that they said to themselves that they "didn't get" some sentences in the Whales text (statement H). L1 students, but not L2 students, also thought they had read some sentences again that they didn't understand in the Whales text (statement E).

In contrast, L2 students had a score of 4.00 for both texts when they rated statement (A), "I understood all sentences". This is not inconsistent with the fact that L2 students seemed to comment less often in their Think-Out-Loud (Text) protocols than L1 students did that they did not know information in the sentences. L2 students in this sample seemed less willing than L1 students to acknowledge their lack of understanding or knowledge about the text. There may be a cultural difference in L2 students' being less willing than L1 students to acknowledge their lack of understanding or knowledge.

Summary of Findings on Question Three

Students used all seven categories of Non Prior Knowledge strategies (Explanation of Text, Non Prior Knowledge interpretation of Text, Evaluation of Text, Monitoring of Understanding, Attempts to Understand, Comments on Strategies and Comments on Sources of Knowledge) as they did the T-O-L (Text) procedure.

Overall, readers used the same categories of strategy while they read the texts, but they appeared to differ as groups. In both texts L2 students seemed to use the Explanation category more frequently than L1 students, and were judged to be "text-bound", a behaviour found in earlier analyses. Their "text-bound" behaviour may be an indication of their "careful" reading of the text.

L1 students were judged to be less text-bound than L2 students who seemed to focus on the text itself and appeared to use the strategies of making inferences and of reasoning more often than L1 students did when they interpreted both texts. They made inferences or linguistic connections between sentences and they gave reasons about the text they were reading. L1 students by contrast seemed to use the referring to previous sentences strategy more frequently than L2 students did. L1 students appeared to focus less on the immediate text they were reading and made references to previous sentences they had read.

In both texts, L1 students seemed to evaluate the text using the strategies of agreeing and judging the truth of statements in the text, while L2 students appeared to think about the words of the text and used the questioning strategy, turning sentences into questions.

When L1 students commented on their actions for both texts they apparently used the knowing and not knowing strategies. L2 students appeared to comment on their thinking about the text.

The data from the readers' rating of statements about Non Prior Knowledge reading strategies tended to corroborate the findings of the Think-Out-Loud (Text) protocols. Both L1 and L2 students believed that some difficult words became more clear as they read more sentences and that they had to read some sentences more slowly in the Whales text. They did not believe that they did this for the Insects text. The

researcher speculated that both L1 and L2 students agreed that they read the Whales text more slowly than they did the Insects text and as a result did not respond using their Prior Knowledge so much in the Whales text as they did in the Insects text. Their T-O-L (Text) protocols indicated that they appeared to express use of their Prior Knowledge less often in the Whales text than they did in the Insects text.

Question Four: Role of Non Prior Knowledge Categories of Strategies and Specific Non Prior Knowledge Strategies in Readers' Answering of Textually Explicit, Textually Implicit and Scriptally Implicit Questions

Three sources of data provided information on the Non Prior Knowledge strategies that readers in this study used while answering Textually Explicit, Textually Implicit and Scriptally Implicit questions. These were:

- (1) the readers Think-Out-Loud (Questions) responses while answering these three types of questions,
- (2) the ratings of statements about Non Prior Knowledge strategies after they have answered questions on texts, and
- (3) the results of non-parametric Spearman correlational tests between the readers' scores on these three types of questions and their scores from rating statements about Non Prior Knowledge strategies.

Question 4 (a) Differences between L1 and L2 students in their use of Non Prior Knowledge categories of strategies while answering each of the three types of questions on both texts.

Analysis of readers' Think-Out-Loud (Questions) protocols revealed that L1 and L2 students used all seven categories of Non Prior Knowledge strategies while answering Textually Explicit, Textually Implicit and Scriptally Implicit questions. They used the categories of Explanation, Non Prior Knowledge Interpretation, Evaluation of Question, Monitoring of Understanding, Attempts to Answer, Comments on Strategies, and Comments on Source of Answers.

L1 and L2 students' use of the seven categories of Non Prior Knowledge strategies while answering Textually Explicit questions on both texts is shown in Table 22.

TABLE 22

LL AND L2 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

		Whales		Insects	
		L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A	Explanation	25 (19.2%)	22 (15.3%)	25 (15.3%)	23 (12.6%)
B (II)	Interpretation Non Prior Knowledge	5 (3.9%)	11 (7.7%)	2 (1.2%)	2 (1.0%)
C	Evaluation	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
D	Monitoring of Understanding	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E	Attempts to Answer	0 (0.0%)	1 (0.7%)	0 (0.0%)	2 (1.1%)
F	Comments on Strategies	24 (18.4%)	34 (23.6%)	43 (26.4%)	41 (22.4%)
G	Comments on Sources of Answers	44 (33.8%)	28 (19.4%)	34 (20.8%)	32 (17.4%)
Total		100 (76.9%)	96 (66.7%)	104 (63.7%)	100 (54.5%)

Apparent differences between L1 and L2 students in
their use of Non Prior Knowledge categories of strategies

while answering Textually Explicit questions on both texts are shown on Fig. 13, which is based on Table 22.

L1 students seemed to use the categories of Explanation (A) and Comments on Sources of Answers (G) more frequently than L2 students did when they answered Textually Explicit questions on both texts.

While answering Textually Explicit questions on the Whales text L2 students appeared to make more frequent use of the categories of Non Prior Knowledge Interpretation (BII) and Comments on Strategies (F) than L1 students did. L1 apparently used the Comments on Strategies (F) more often than L2 students did when they answered Textually Explicit questions on the Insects text.

FIG. 13

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS ON

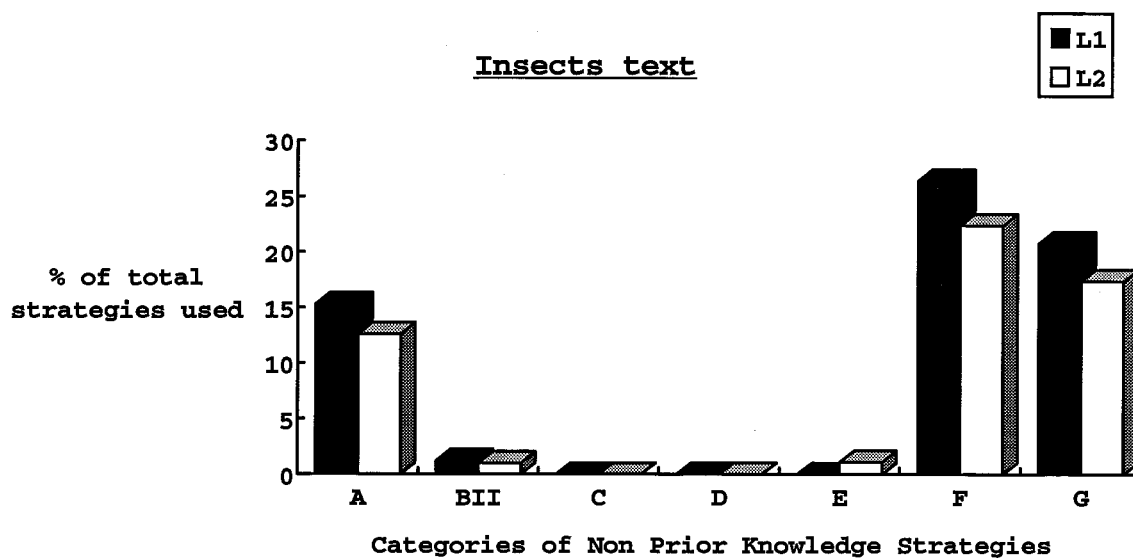
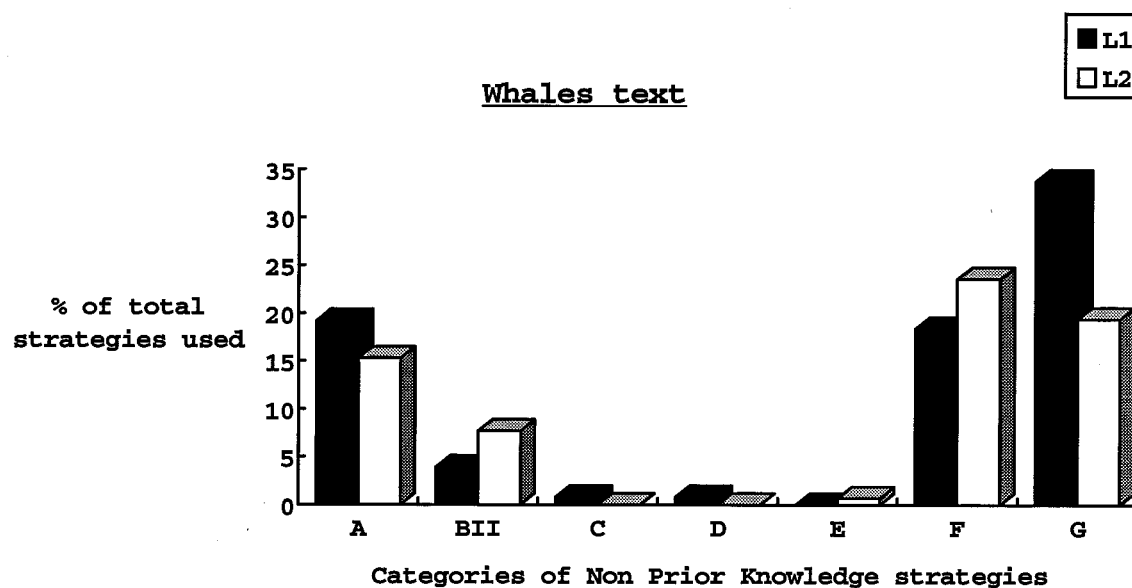


Table 23 depicts L1 and L2 students' use of the seven categories of Non Prior Knowledge strategies while answering Textually Implicit questions on both texts.

TABLE 23

**L1 AND L2 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)**

		Whales		Insects	
		L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A	Explanation	3 (1.8%)	6 (3.2%)	3 (1.3%)	14 (4.8%)
B (II)	Interpretation Non Prior Knowledge	45 (26.3%)	48 (26.2%)	38 (16.8%)	37 (12.7%)
C.	Evaluation	1 (0.6%)	1 (0.6%)	0 (0.0%)	1 (0.3%)
D	Monitoring of Understanding	0 (0.0%)	4 (2.2%)	0 (0.0%)	0 (0.0%)
E	Attempts to Answer	3 (1.8%)	3 (1.8%)	1 (0.4%)	5 (1.7%)
F	Comments on Strategies	35 (20.4%)	41 (22.4%)	42 (18.4%)	37 (12.7%)
G	Comments on Sources of Answers	44 (25.6%)	27 (14.7%)	32 (14.1%)	36 (12.3%)
Total		131 (76.5%)	130 (71.1%)	116 (51.0%)	130 (44.5%)

Fig. 14, which is based on Table 23, illustrates the apparent differences between L1 and L2 students in their use of Non Prior Knowledge categories of strategies while answering Textually Implicit questions on both texts.

L1 students seemed to make more frequent Comments on Sources of Answers (G) than L2 students did when they answered Textually Implicit questions on both texts, just as they apparently did in the Textually Explicit questions.

L1 students appeared to use the categories of Non Prior Knowledge Interpretation (BII) and Comments on Strategies (F) more often than L2 students did in the Textually Implicit questions on the Insects text.

L2 students seemed to use the category of Explanation (A) more frequently than L1 students did when they answered Textually Implicit questions on both texts.

FIG. 14

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS ON

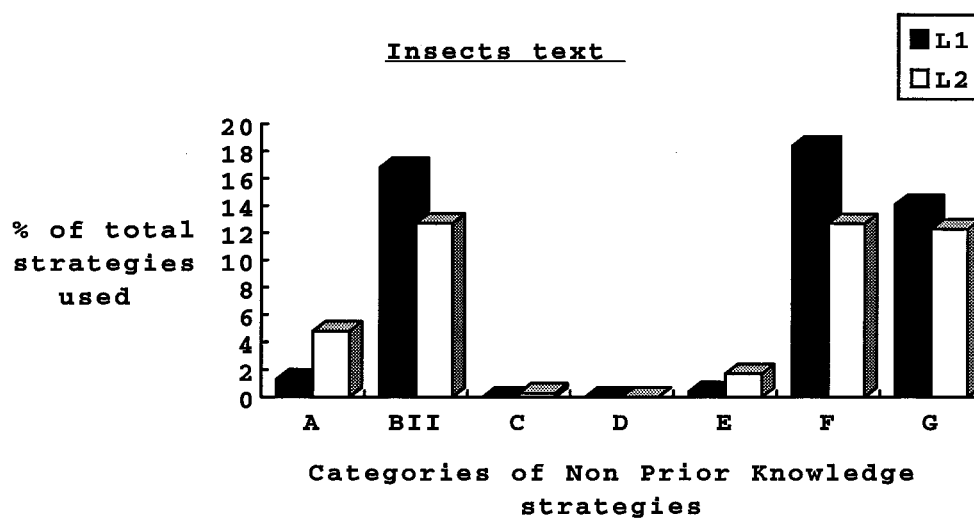
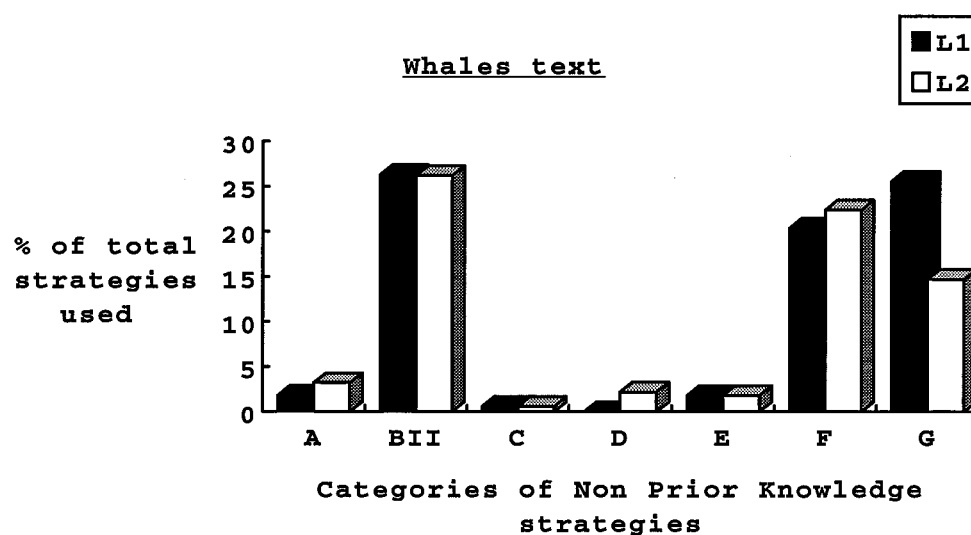


Table 24 shows L1 and L2 students' use of the seven categories of Non Prior Knowledge strategies while answering Scriptally Implicit questions on both texts.

TABLE 24

**L1 AND L2 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)**

		Whales		Insects	
		L1	L2	L1	L2
		(n=10)	(n=10)	(n=10)	(n=10)
A	Explanation	8 (3.3%)	18 (7.1%)	23 (9.6%)	13 (5.1%)
B (II)	Interpretation Non Prior Knowledge	48 (19.9%)	44 (17.3%)	34 (14.1%)	28 (10.9%)
C	Evaluation	4 (1.6%)	9 (3.5%)	1 (0.4%)	3 (1.2%)
D	Monitoring of Understanding	2 (0.8%)	2 (0.8%)	0 (0.0%)	0 (0.0%)
E	Attempts to Answer	0 (0.0%)	1 (0.4%)	0 (0.0%)	3 (1.2%)
F	Comments on Strategies	47 (19.3%)	46 (17.9%)	52 (21.6%)	46 (18.1%)
G	Comments on Sources of Answers	29 (11.6%)	19 (7.5%)	19 (7.8%)	25 (9.8%)
Total		138 (56.5%)	139 (54.5%)	129 (53.5%)	118 (46.3%)

L1 and L2 students apparently used Non Prior Knowledge strategies less often in the Scriptally Implicit questions, which invited the use of Prior Knowledge strategies, than they did in the Textually Explicit questions (see Table 22).

Fig. 15 illustrates the data in Table 24 and shows the apparent differences between L1 and L2 students in their use of Non Prior Knowledge categories of strategies while answering Scriptally Implicit questions on both texts.

L1 students appeared to make more frequent use of the category of Non Prior Knowledge Interpretation (BII) than L2 students did in the Scriptally Implicit questions on both texts.

They seemed to use the category of Comments on Sources of Answers (G) more often than L2 students did in Scriptally Implicit questions on the Whales text.

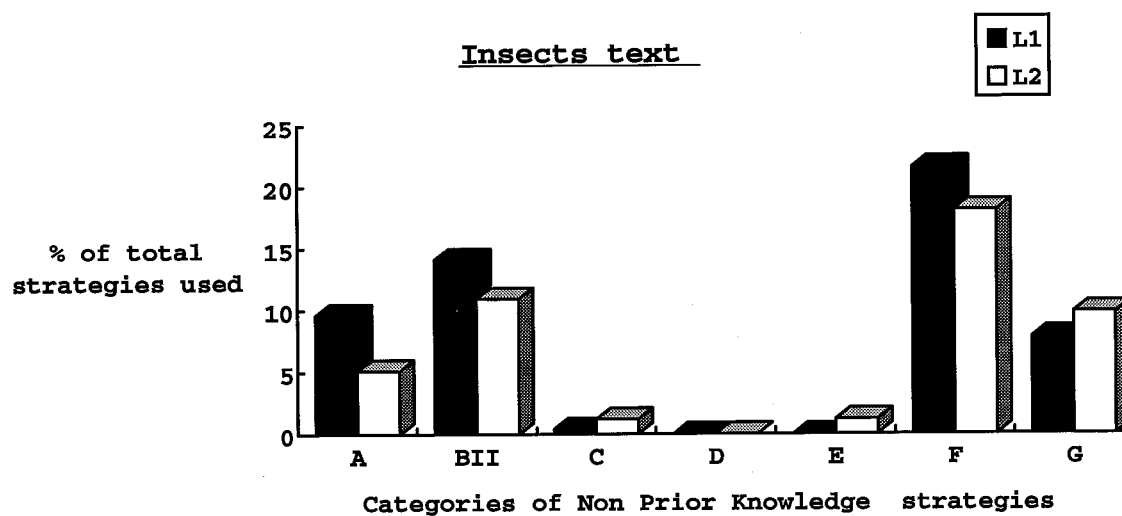
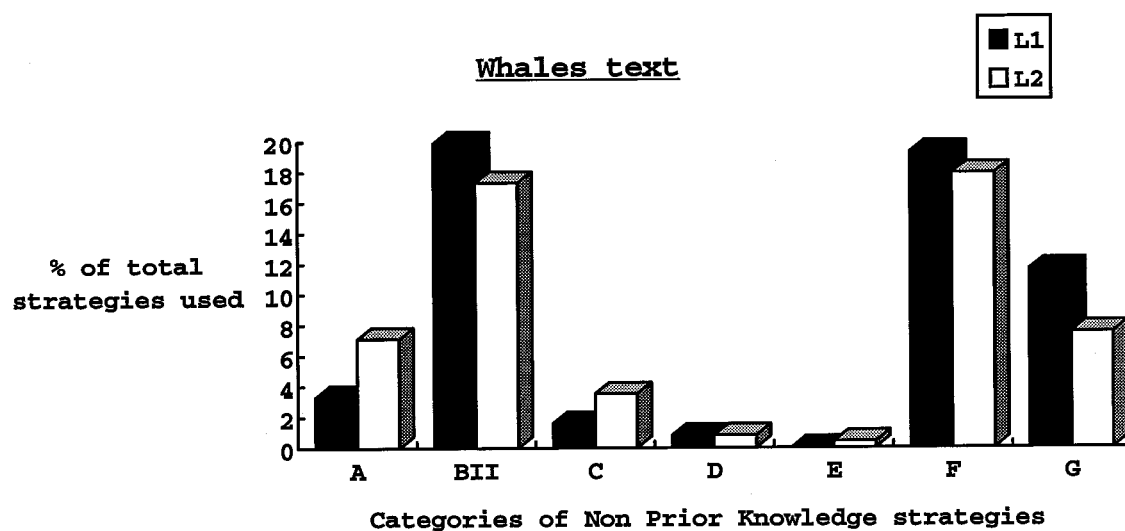
They apparently made more frequent use of the categories of Explanation (A) and of Comment on Strategies (F) than L2 students did in the Scriptally Implicit questions on the Insects text.

L2 students seemed to use the categories of Explanation (A) and of Evaluation (C) more frequently than L1 students did when they answered Scriptally Implicit questions on the Whales text.

They apparently used the Comments on Sources of Answers (G) more often than L1 students did in the Scriptally Implicit questions on the Insects text.

FIG. 15

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS ON



Figures 13, 14 and 15 indicate that the category of Explanation (A) was apparently used more frequently by L1 students when they answered Textually Explicit questions on both texts and Scriptally Implicit questions on the Insects text. Answers to Textually Explicit questions could be found in the text and it is not surprising that L1 students would use the Explanation category of strategies, which include the strategies of paraphrasing and quoting. What is surprising is the use of the Explanation category in answering Scriptally Implicit questions on the Insects text. Answers to Scriptally Implicit questions could not be found in the text. L1 students may have used this category of strategies in their attempt to find an answer in the text.

L2 students seemed to use the Explanation (A) category of strategies more often than L1 students did when they answered Textually Implicit questions on both texts. Answers to Textually Implicit could be inferred from the text and were not explicitly stated. L2 students may have used the Explanation category of strategies in their attempt to answer Textually Implicit questions on both texts.

L1 students appeared to use the Non Prior Knowledge Interpretation (BII) category of strategies more frequently than L2 students in the Textually Implicit questions on the Insects text and in the Scriptally Implicit questions on both texts. L1 students seemed to be interpreting the text

in these two types of questions when the answers were not directly in the text.

L1 students also apparently used the category of Comments on Strategies (F) more frequently than L2 students in all three types of questions on the Insects text.

While answering all three types of questions on the Whales text, L1 students seemed to make more frequent use of the categories of Comments on Sources of Answers (G). They also appeared to use this category more often than L2 students did in the Textually Explicit and Textually Implicit questions on the Insects text.

Apparently L1 students felt more confident than L2 students did about commenting on the Sources of Answers to all three types of questions on the Whales text, and to make comments on their Strategies on all three types of questions on the Insects text.

Question 4 (b) Differences between the three types of questions on each text and the use of the Non Prior Knowledge categories of strategies by L1 and by L2 students.

Table 25 portrays L1 students' use of the seven categories of Non Prior Knowledge strategies while answering the three types of questions on the Whales text.

TABLE 25

L1 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT (TI)
AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

		TE	L1 Whales TI	SI
Strategies				
A	Explanation	25 (19.2%)	3 (1.8%)	8 (3.3%)
B (II)	Interpretation Non Prior Knowledge	5 (3.9%)	45 (26.3%)	48 (19.9%)
C	Evaluation	1 (0.8%)	1 (0.6%)	4 (1.6%)
D	Monitoring of Understanding	1 (0.8%)	0 (0.0%)	2 (0.8%)
E	Attempts to Answer	0 (0.0%)	3 (1.8%)	0 (0.0%)
F	Comments on Strategies	24 (18.4%)	35 (20.4%)	47 (19.3%)
G	Comments on Sources of Answers	44 (33.8%)	44 (25.6%)	29 (12.0%)
Total		100 (76.9%)	131 (76.5%)	138 (56.5%)

L2 students' use of the Non Prior Knowledge
Categories of strategies while answering the three types of
questions on the Whales text is presented in Table 26.

TABLE 26
L2 READERS' OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

		TE	L2 Whales TI	SI
Strategies				
A	Explanation	22 (15.3%)	6 (3.2%)	18 (7.1%)
B (II)	Interpretation Non Prior Knowledge	11 (7.7%)	48 (26.2%)	44 (17.3%)
C	Evaluation	0 (0.0%)	1 (0.6%)	9 (3.5%)
D	Monitoring of Understanding	0 (0.0%)	4 (2.2%)	2 (0.8%)
E	Attempts to Answer	1 (0.7%)	3 (1.8%)	1 (0.4%)
F	Comments on Strategies	34 (23.6%)	41 (22.4%)	46 (18.0%)
G	Comments on Sources of Answers	28 (19.4%)	27 (14.7%)	19 (7.5%)
Total		96 (66.7%)	130 (71.1%)	139 (54.5%)

Fig. 16 is based on Tables 25 and 26. It shows the apparent differences between the three types of questions on the Whales text and the use of Non Prior Knowledge categories of strategies by L1 and by L2 students.

Both L1 and L2 students appeared to use the categories of Explanation (A) and Comments on Sources of Answers (G) more frequently in the Textually Explicit questions than they did in the other two types of questions on the Whales text.

They seemed to use the category of Non Prior Knowledge Interpretation (BII) more often in the Textually Implicit questions than they did in the other two types of questions on the Whales text.

FIG. 16

USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI), AND SCRIPTALLY IMPLICIT (SI)
QUESTIONS ON THE WHALES TEXT

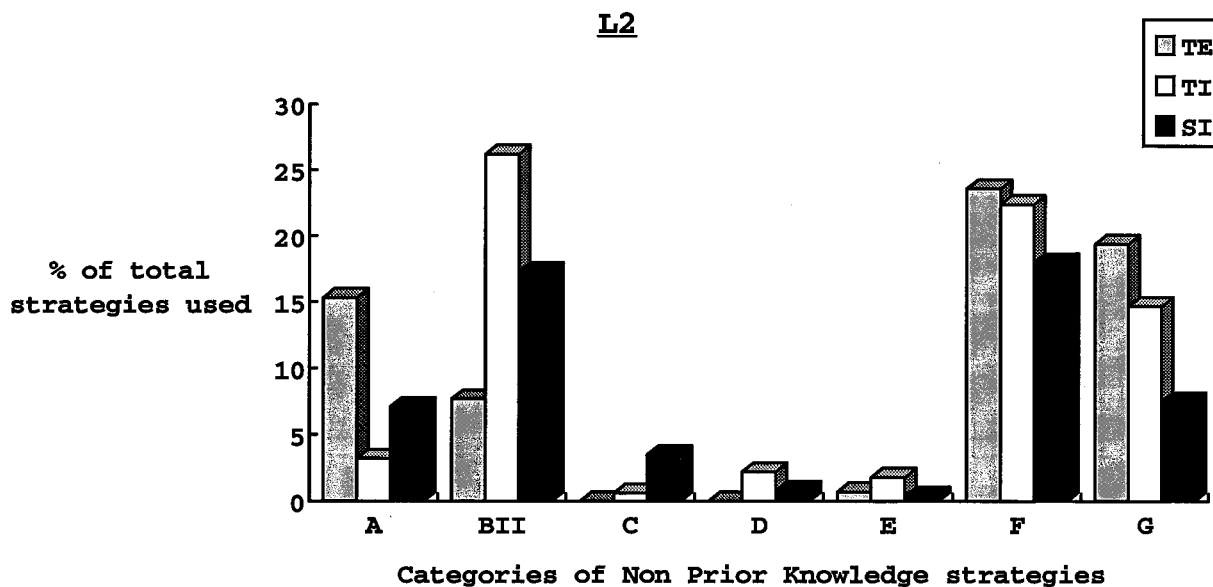
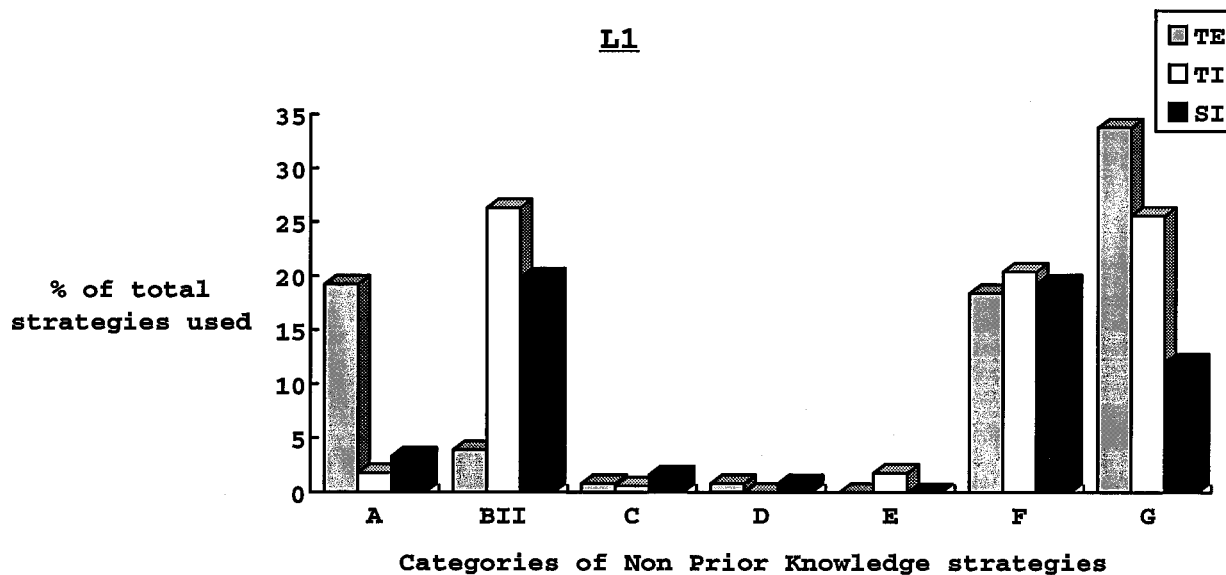


Table 27 shows L1 students' use of the Non Prior Knowledge categories of strategies while answering the three types of questions on the Insects text.

TABLE 27

L1 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

		TE	L1 Insects TI	SI
Strategies				
A	Explanation	25 (15.3%)	3 (1.3%)	23 (9.6%)
B (II)	Interpretation Non Prior Knowledge	2 (1.2%)	38 (16.8%)	34 (14.1%)
C	Evaluation	0 (0.0%)	0 (0.0%)	1 (0.4%)
D	Monitoring of Understanding	0 (0.0%)	0 (0.0%)	0 (0.0%)
E	Attempts to Answer	0 (0.0%)	1 (0.4%)	0 (0.0%)
F	Comments on Strategies	43 (26.4%)	42 (18.4%)	52 (21.6%)
G	Comments on Sources of Answers	34 (20.8%)	32 (14.1%)	19 (7.8%)
Total		104 (63.7%)	116 (57.0%)	129 (53.5%)

L2 students' use of the categories of Non Prior Knowledge strategies while answering the three types of questions on the Insects text is presented in Table 28.

TABLE 28

L2 READERS' USE OF
THE SEVEN CATEGORIES OF NON PRIOR KNOWLEDGE STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

		L2 Insects		
		TE	TI	SI
Strategies				
A	Explanation	23 (12.6%)	14 (4.8%)	13 (5.1%)
B (II)	Interpretation Non Prior Knowledge	2 (1.0%)	37 (12.7%)	28 (10.9%)
C	Evaluation	0 (0.0%)	1 (0.3%)	3 (1.2%)
D	Monitoring of Understanding	0 (0.0%)	0 (0.0%)	0 (0.0%)
E	Attempts to Answer	2 (1.0%)	5 (1.7%)	3 (1.2%)
F	Comments on Strategies	41 (22.4%)	37 (12.7%)	46 (18.1%)
G	Comments on Sources of Answers	32 (17.5%)	36 (12.3%)	25 (9.8%)
Total		153 (83.4%)	240 (82.0%)	217 (85.1%)

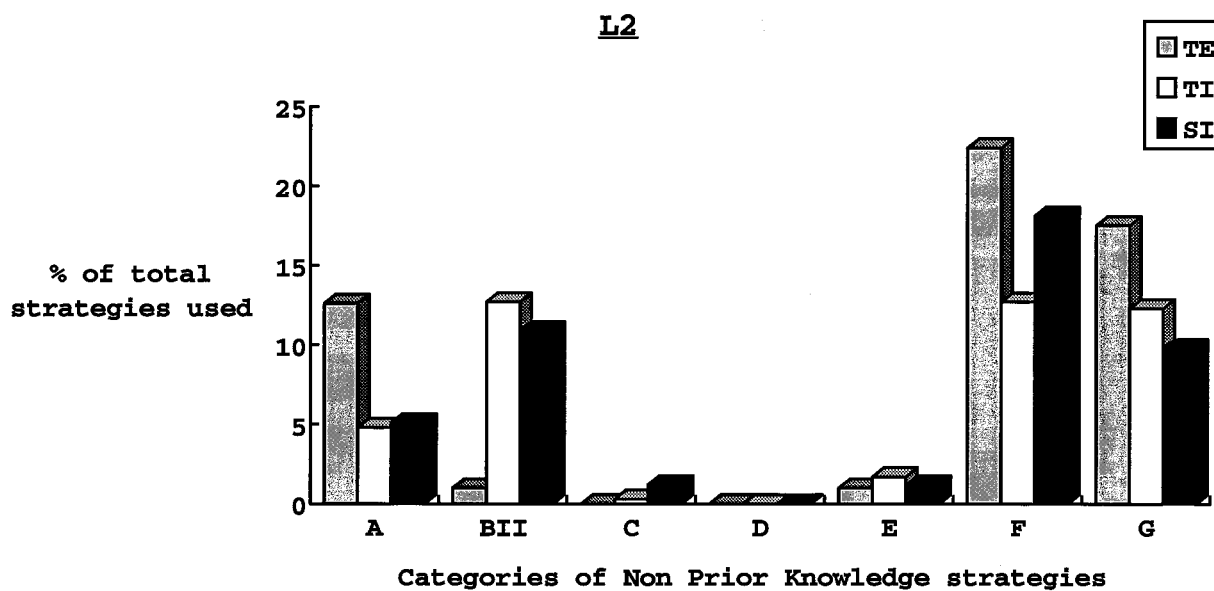
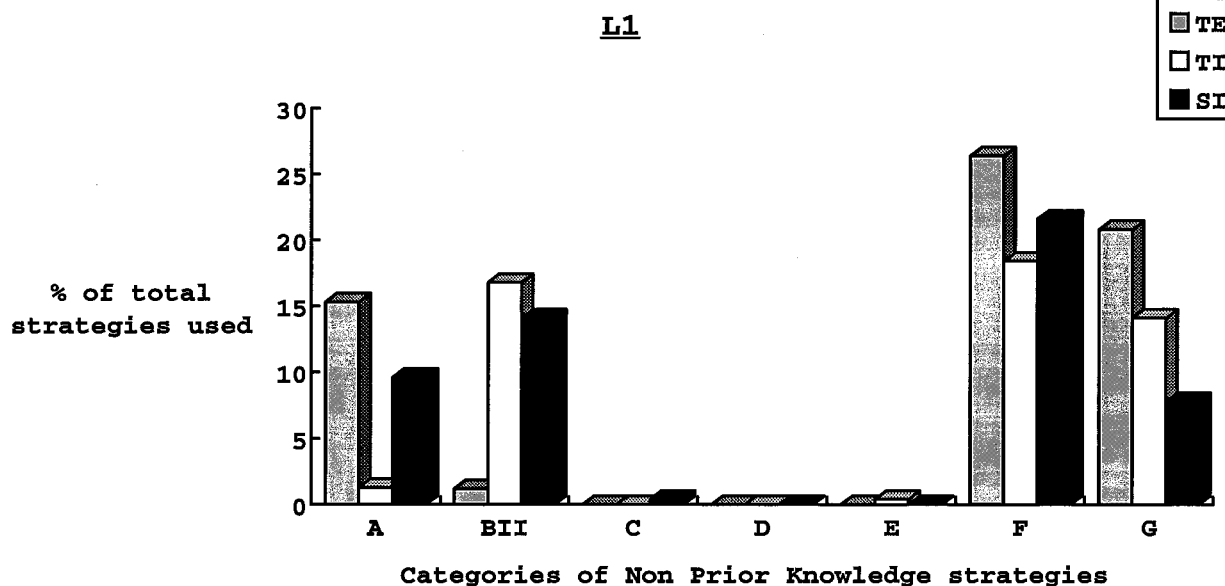
Fig. 17 illustrates graphically the data in Tables 27 and 28. It shows the apparent differences between the three types of questions on the Insects text and the use of Non Prior Knowledge categories of strategies by L1 and by L2 students.

Both groups seemed to use the categories of Explanation (A), Comments on Strategies (F) and Comments on Sources of Answers (G) more often in the Textually Explicit Questions than they did in the other two types of questions on the Insects text.

They appeared to use the Non Prior Knowledge Interpretation category of strategies (BII) more often in the Textually Implicit questions than in the other two types of questions on the Insects text.

FIG. 17

USE OF NON PRIOR KNOWLEDGE CATEGORIES OF STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI), AND SCRIPTALLY IMPLICIT (SI)
QUESTIONS ON THE INSECTS TEXT



Figures 16 and 17 are reminiscent of the comment made by Wixson (1983) that different types of questions influenced readers' strategies.

It was noted that when the students answered Textually Explicit questions on both texts they seemed to frequently use the Explanation (A) category of strategies. Answers to Textually Explicit Questions could be found in the text, and it was predictable that readers would use the Explanation category while answering this type of questions because they would be using the words of the text since the Explanations category includes the strategies of paraphrasing and quoting.

Both L1 and L2 students appeared to make frequent use of the Non Prior Knowledge Interpretation (BII) category in the Textually Implicit questions on both texts. Answers to Textually Implicit questions invited inferences, and readers did use the Non Prior Knowledge Interpretation category which included the strategy of making inferences.

L1 and L2 students seemed to use frequently the category of Comments on Sources of Answers (G) in the Textually Explicit questions on both texts. Apparently L1 and L2 students were able to comment on the sources of the answers to Textually Explicit questions. These questions were judged to be more straightforward as answers could be found in the text, and students appeared to respond to this type of question by commenting on the source of their answers.

Question 4 (e) Differences between L1 and L2 students in their use of specific Non Prior Knowledge strategies while answering each of the three types of questions on each text.

Readers' (Questions) protocols revealed that they used strategies within all of the seven categories of Non Prior Knowledge strategies to answer the three types of questions. These strategies are described in detail in Appendix 13.

It was decided to analyze the strategies within those categories in which differences had been found between L1 and L2 students in Figures 14 and 15, and to ignore the strategies in those categories in which no differences had been found. Consequently no analysis was performed on the strategies within the categories of Evaluation, Monitoring of Understanding and Attempts to Answer. Appendices 22 to 30 provide the frequency counts of L1 and L2 students' use of specific strategies in the categories of Evaluation, Monitoring of Understanding and Attempts to Answer.

Table 29 present the data for L1 and L2 students' use of specific Non Prior Knowledge Explanation strategies while answering Textually Explicit questions on both texts.

TABLE 29

L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A1 Paraphrasing	13 (10.0%)	13 (9.2%)	10 (6.1%)	17 (9.3%)
A2 Quoting	12 (9.2%)	9 (6.1%)	15 (9.2%)	6 (3.3%)
Total	25 (19.2%)	22 (15.3%)	25 (15.3%)	23 (12.6%)

Fig. 18 is based on Table 29. It shows that L1 students apparently used the quoting (A2) strategy more frequently than L2 students while answering Textually Explicit questions on both texts.

L2 students seemed to use the paraphrasing (A1) strategy more often than L1 students did when they answered Textually Explicit questions on the Insects text.

FIG. 18

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS ON

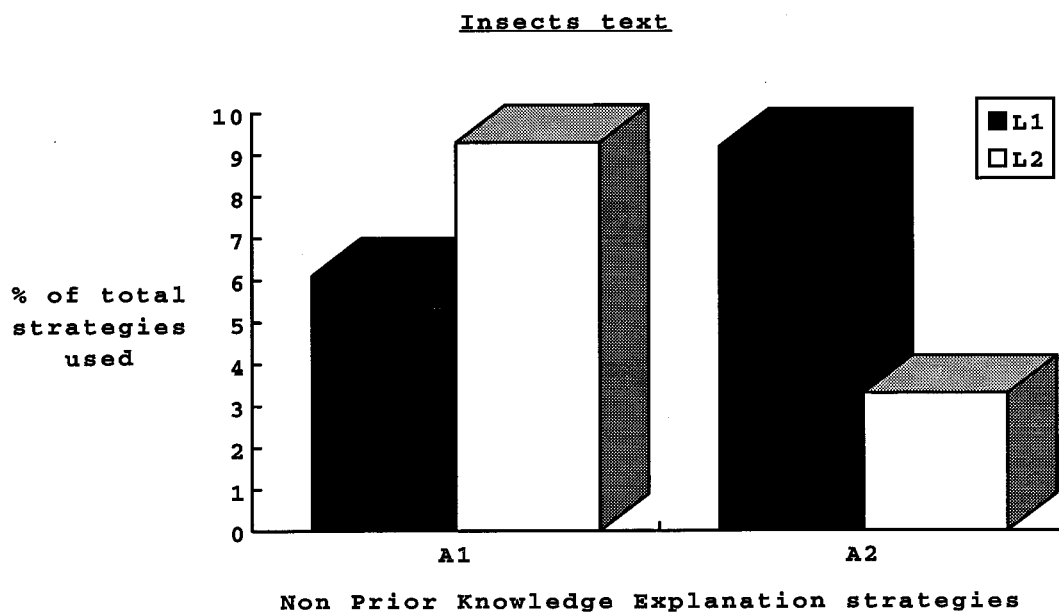
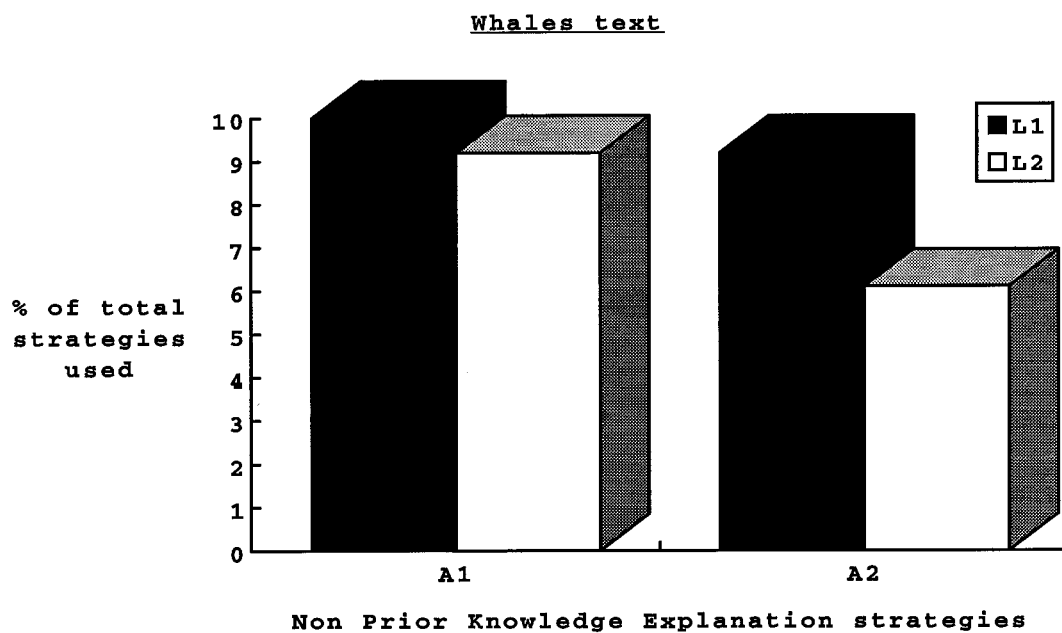


Table 30 presents L1 and L2 students' use of specific Non Prior Knowledge Explanation strategies while answering Textually Implicit questions on both texts.

TABLE 30
L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A1 Paraphrasing	3 (1.8%)	6 (3.2%)	3 (1.0%)	11 (3.8%)
A2 Quoting	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (1.0%)
Total	3 (1.8%)	6 (3.2%)	3 (1.3%)	14 (4.8%)

Fig. 19 shows graphically the data in Table 30. It illustrates that L2 students appeared to use the paraphrasing (A1) strategy more frequently than L1 students did in the Textually Implicit questions on both texts.

L2 students also seemed to use the quoting (A2) strategy more often than L1 students did while answering the same type of question on the Insects text.

FIG. 19

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS ON

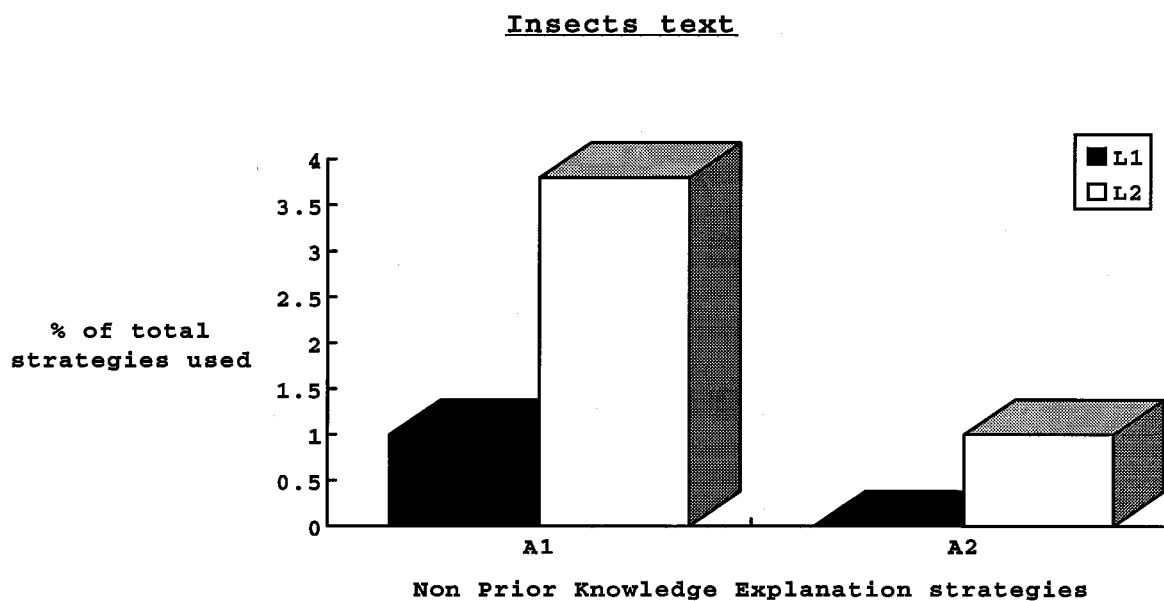
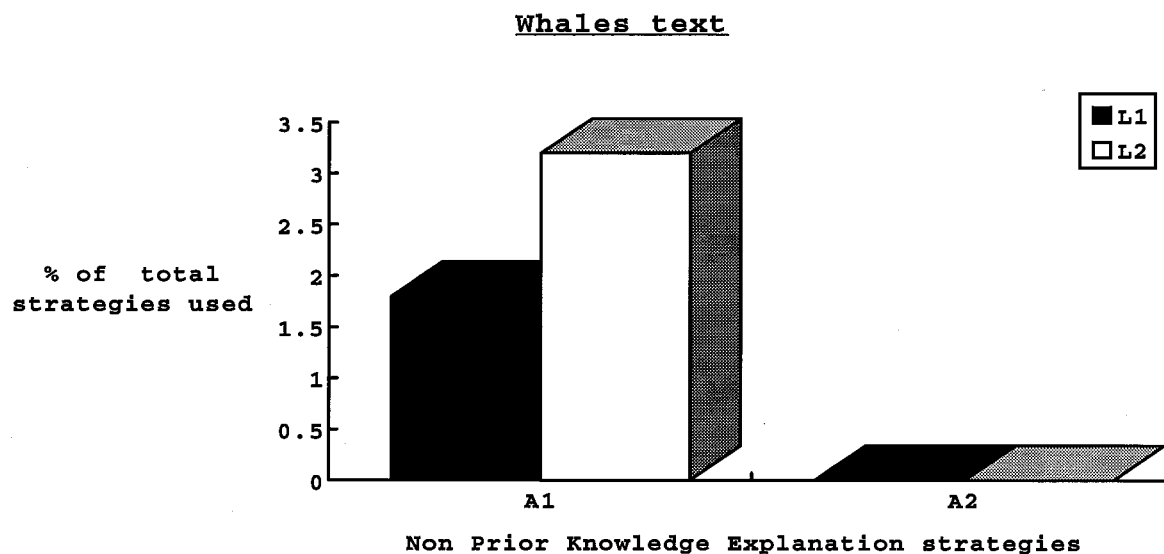


Table 31 shows L1 and L2 students' use of specific Non Prior Knowledge Explanation strategies while answering Scriptally Implicit questions on both texts.

TABLE 31

L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

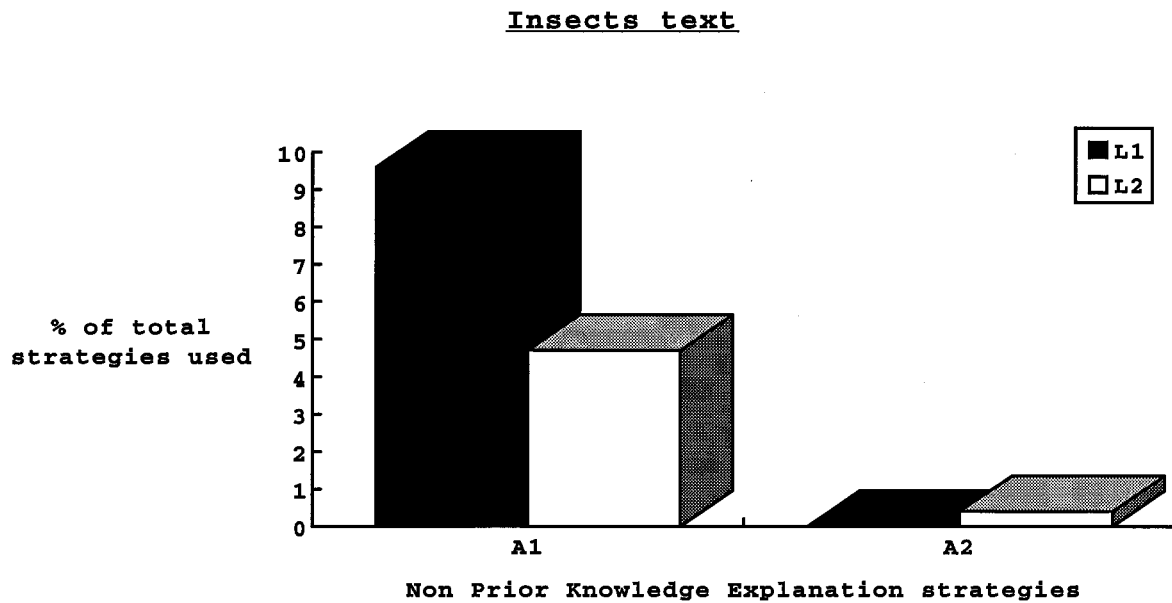
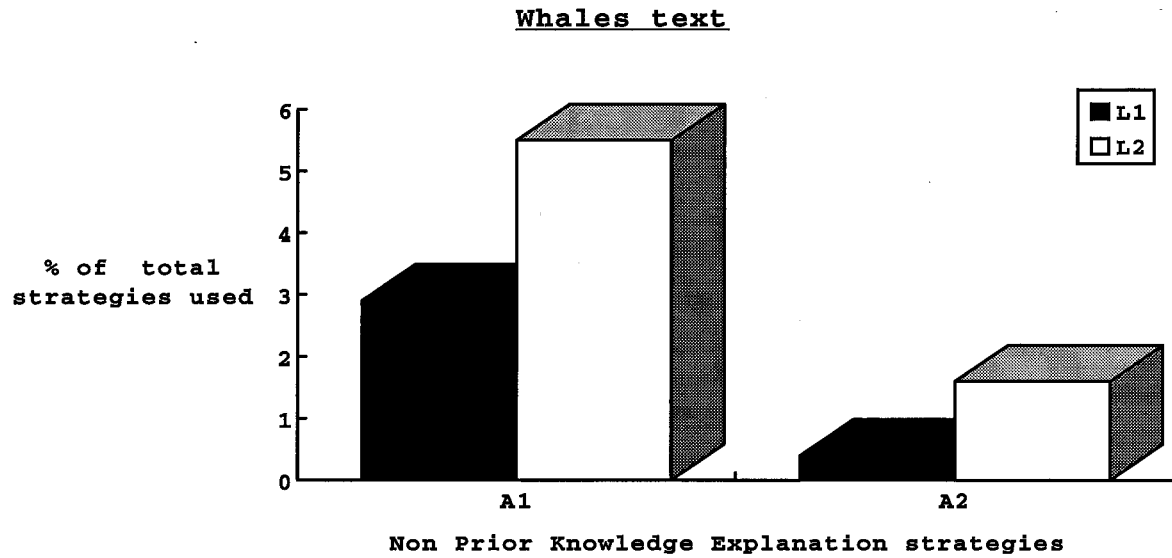
	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A1 Paraphrasing	7 (2.9%)	14 (5.5%)	23 (9.6%)	12 (4.7%)
A2 Quoting	1 (0.4%)	4 (1.6%)	0 (0.0%)	1 (0.4%)
Total	8 (3.3%)	18 (7.1%)	23 (9.6%)	13 (5.1%)

Fig. 20 is based on Table 31. It demonstrates that L2 students seemed to use the paraphrasing (A1) and quoting (A2) strategies more often than L1 students did in the Scriptally Implicit questions on the Whales text.

L1 students appeared to use the paraphrasing (A1) strategy more frequently than L2 students did in the Scriptally Implicit questions on the Insects text.

FIG. 20

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS ON



Figures 18, 19 and 20 indicated that L1 students seemed to use the quoting (A2) strategy more often than L2 students did in the Textually Explicit questions on both texts. Textually Explicit questions could be answered using the words of the text, and so it is not surprising that L1 students used the quoting strategy when they answered this type of question. L2 students also used this same strategy but seemed to use it less frequently than L1 students did.

L2 students apparently made more frequent use than L1 students did of the paraphrasing (A1) strategy in the Textually Explicit and Textually Implicit questions on the Insects text. L2 students also seemed to use this same strategy more frequently than L1 students did in the Textually Implicit and Scriptally Implicit questions on the Whales. The researcher believed these findings to mean that L2 students appeared to frequently use the words of the text in their attempt to answer questions on the text, an indication of their text-bound approach to the text.

On the other hand, L1 students seemed to use the paraphrasing (A1) strategy more often than L2 students only in the Scriptally Implicit questions on the Insects text.

Table 32 provides the data of L1 and L2 students' use of specific Non Prior Knowledge Interpretation strategies while answering Textually Explicit questions on both texts.

TABLE 32

L1 AND 12 STUDENTS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (II) Interpretation Non Prior Knowledge Category				
B 5 Confirming	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 9 Expressing suppositions	2 (1.5%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
B11 Giving consequences	1 (0.8%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
B13 Making inferences	0 (0.0%)	1 (0.7%)	0 (0.0%)	0 (0.0%)
B16 Reasoning	1 (0.8%)	6 (4.2%)	2 (1.2%)	0 (0.0%)
B19 Summarizing	1 (0.8%)	4 (2.8%)	0 (0.0%)	0 (0.0%)
Total	5 (3.9%)	11 (7.7%)	2 (1.2%)	2 (1.0%)

Fig. 21 presents graphically the data in Table 32. While answering Textually Explicit questions on the Whales text L1 students apparently made more frequent use than L2 students did of the expressing suppositions (B9) strategy.

L2 students seemed to use the summarizing (B19) strategy more frequently than L1 students did in the Textually Explicit questions on the Whales text.

When L1 students answered Textually Explicit questions on the Insects text they appeared to make more frequent use of the reasoning (B16) strategy than L2 students did. The reverse was the case in the Whales text with L2 students apparently using the reasoning (B16) strategy more often than L1 students did in the Textually Explicit questions.

FIG. 21

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS ON

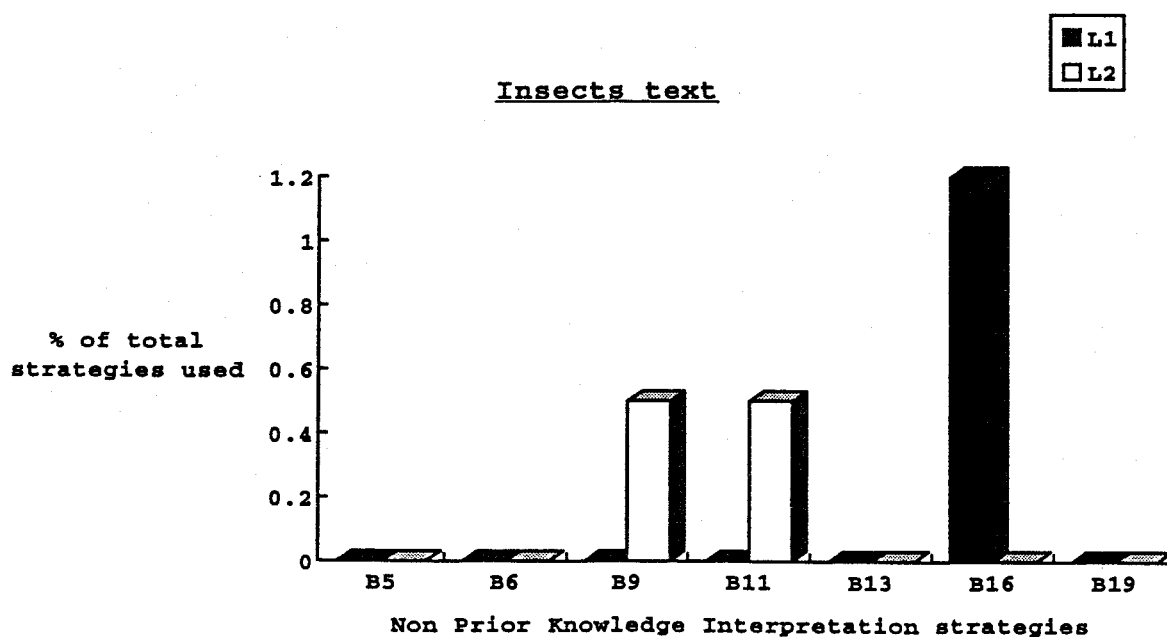
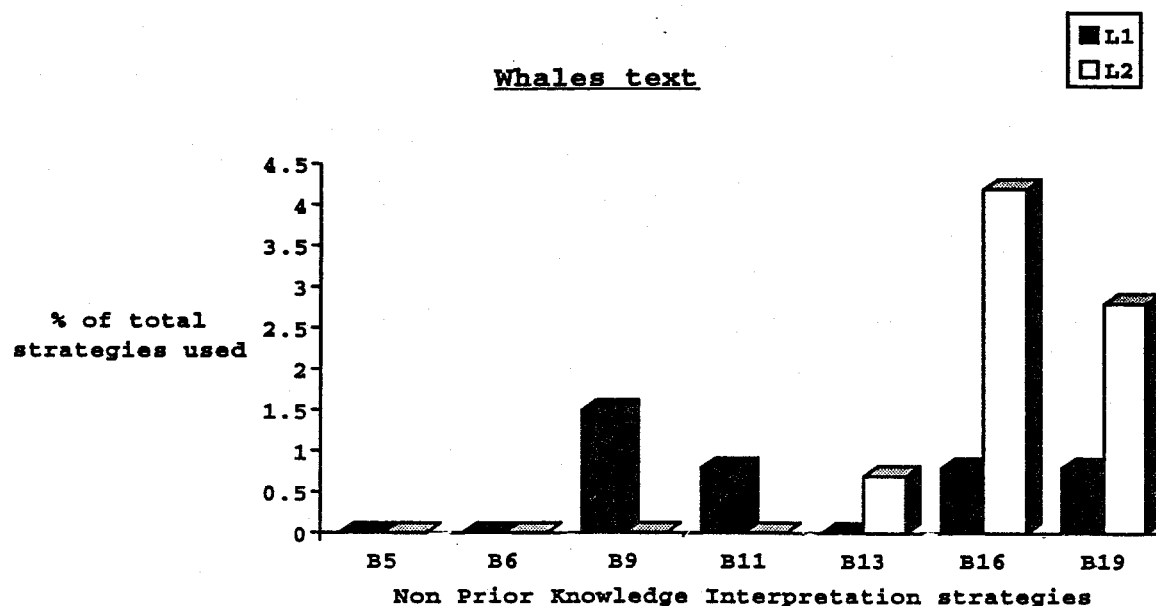


Table 33 presents L1 and L2 students' use of Non Prior Knowledge Interpretation strategies while answering Textually Implicit questions on both texts.

TABLE 33

**L1 AND 12 STUDENTS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS**

(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (II) Interpretation Non Prior Knowledge Category				
B 5 Confirming	1 (0.5%)	0 (0.0%)	2 (0.9%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
B 9 Expressing suppositions	4 (2.3%)	6 (3.3%)	2 (0.9%)	1 (0.3%)
B11 Giving consequences	8 (4.7%)	9 (4.9%)	1 (0.4%)	0 (0.0%)
B13 Making inferences	16 (9.4%)	18 (9.8%)	22 (9.8%)	21 (7.2%)
B16 Reasoning	16 (9.4%)	15 (8.2%)	10 (4.4%)	15 (5.2%)
B19 Summarizing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	45 (26.3%)	48 (26.2%)	38 (16.8%)	37 (12.7%)

Fig. 22 is based on the data from Table 33. When L1 students answered Textually Implicit questions on the Whales text they apparently used the reasoning (B16) strategy more frequently than L2 students did. The reverse was the case in the Insects text, as was noted in the comments about Fig. 21.

L1 students seemed to use the confirming (B5) strategy more often than L2 students did in the Textually Implicit questions on the Insects text.

L1 students apparently used the making inferences (B13) strategy more frequently than L2 students did in the Textually Implicit questions on the Insects text. Textually Implicit questions invited use of the making inferences strategy, and both language groups did use this strategy, although L1 students seemed to make more frequent use of it in the Textually Implicit questions on Insects.

FIG. 22

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS ON

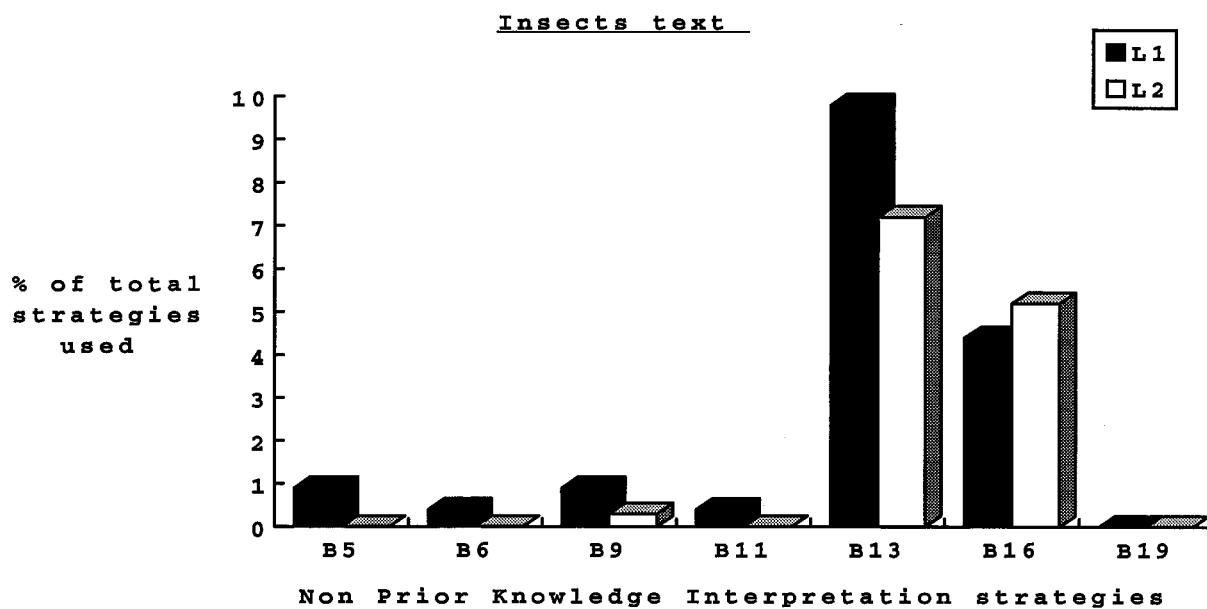
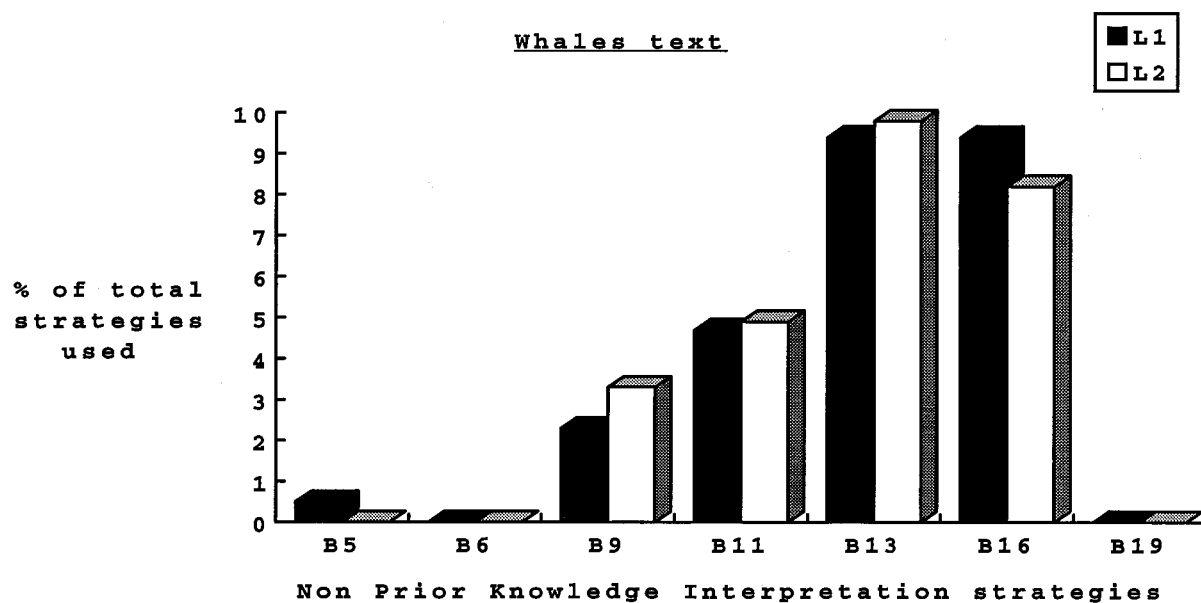


Table 34 presents the frequency counts of L1 and L2 students' use of Non Prior Knowledge Interpretation strategies while answering Scriptally Implicit questions on both texts.

TABLE 34

L1 AND 12 STUDENTS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

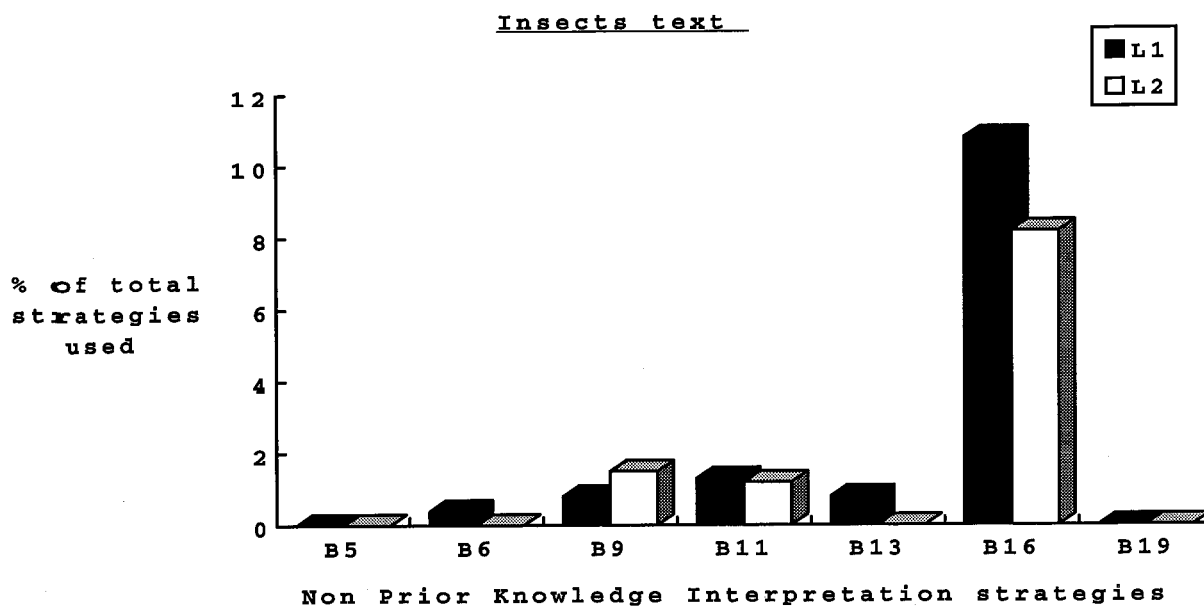
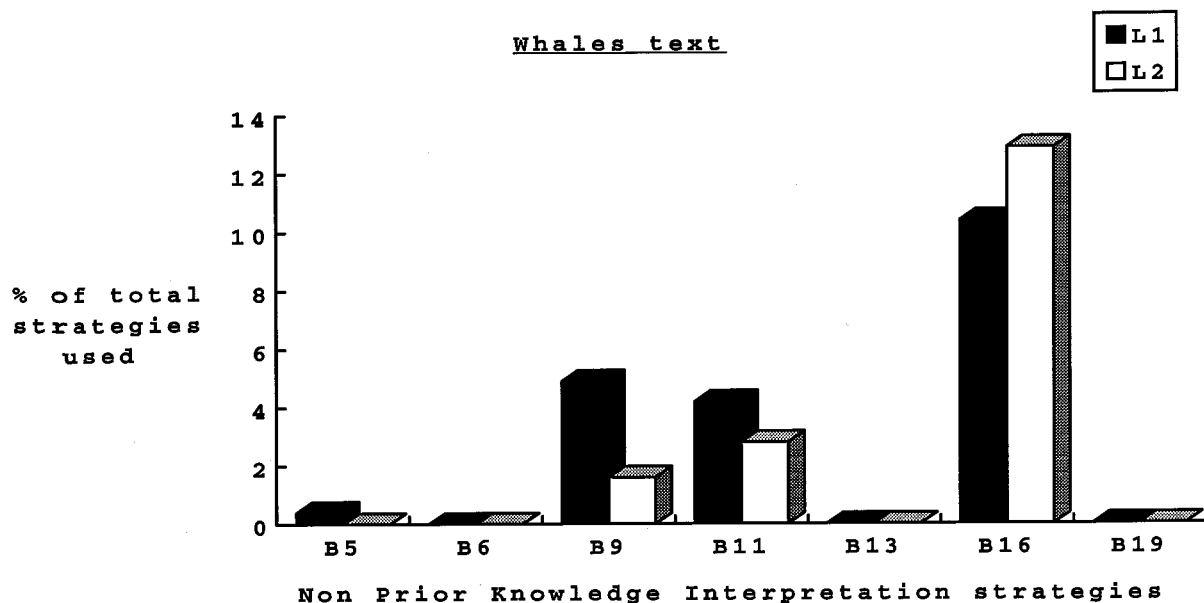
	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
B (II) Interpretation				
Non Prior Knowledge Category				
B 5 Confirming	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
B 9 Expressing suppositions	12 (4.9%)	4 (1.6%)	2 (0.8%)	4 (1.5%)
B11 Giving consequences	10 (4.2%)	7 (2.8%)	3 (1.3%)	3 (1.2%)
B13 Making inferences	0 (0.0%)	0 (0.0%)	2 (0.8%)	0 (0.0%)
B16 Reasoning	25 (10.4%)	33 (12.9%)	26 (10.8%)	21 (8.2%)
B19 Summarizing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	48 (19.9%)	44 (17.3%)	34 (14.1%)	28 (10.9%)

Fig. 23 is based on Table 34. When L1 students answered Scriptally Implicit questions on the Whales text they seemed to use the expressing suppositions (B9) and the giving consequences (B11) strategies more often than L2 students did.

L2 students appeared to use the reasoning (B16) strategy more frequently than L1 students did in the Scriptally Implicit questions on the Whales text. The reverse was the case in the Scriptally Implicit questions on the Insects text with L1 students apparently making more frequent use of the reasoning (B16) strategy. It was noted in Figures 21 and 22 that there were apparent reversals in the frequency of L1 and L2 students' use of the reasoning (B16) strategy.

FIG. 23

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS ON



Figures 21, 22 and 23 indicate that there was no consistent pattern of differences between L1 and L2 students in their use of specific Non Prior Knowledge Interpretation strategies when they answered the three types of questions on both texts. In fact, there was an apparent reversal in the frequency of use of the reasoning (B16) strategy. One language group seemed to use the reasoning (B16) strategy more frequently while answering one type of question on a text, and the other language group apparently used it more often while answering the same type of question on the other text.

Table 35 shows L1 and L2 students' use of specific Non Prior Knowledge Comments on Strategies while answering Textually Explicit questions on both texts.

TABLE 35
L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
F39 Getting the answer	8 (6.1%)	11 (7.6%)	11 (6.8%)	13 (7.1%)
F40 Guessing	0 (0.0%)	1 (0.7%)	3 (1.8%)	0 (0.0%)
F41 Knowing	4 (3.1%)	6 (4.2%)	1 (0.6%)	6 (3.2%)
F43 Not able to find the answer	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F45 Not knowing	1 (0.8%)	2 (1.4%)	4 (2.5%)	1 (0.6%)
F46 Not remembering	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F47 Not sure	0 (0.0%)	0 (0.0%)	3 (1.8%)	3 (1.6%)
F48 Not willing to try	0 (0.0%)	0 (0.0%)	3 (1.8%)	2 (1.1%)
F49 Remembering	5 (3.8%)	3 (2.1%)	6 (3.7%)	1 (0.6%)
F50 Thinking	6 (4.6%)	11 (7.6%)	12 (7.4%)	7 (3.8%)
F51 Trying	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (4.4%)
Total	24 (18.4%)	34 (23.6%)	43 (26.4%)	41 (22.4%)

Fig. 24 is based on the data in Table 35. L1 students apparently made more frequent comments about remembering (F49) than L2 students did in the Textually Explicit questions on both texts.

L2 students seemed to comment more frequently about knowing (F41) than L1 students did in the Textually Explicit questions on both texts.

When L2 students answered Textually Explicit questions on the Whales text, they apparently made more frequent comments than L1 students did about getting the answer (F39).

While answering Textually Explicit questions on the Insects text, L1 students appeared to comment more frequently than L2 students did about guessing (F40). L2 students seemed to comment more often than L1 students did that they were trying (F51) in the Textually Explicit questions on the Insects text.

There were two examples of apparent reversals in the frequency of use of some Comments on Strategies. L2 students seemed to make more comments about not knowing (F45) and thinking (F50) than L1 students did in the Textually Explicit questions on Whales. The reverse was the case when they answered Textually Explicit questions on the Insects text.

FIG. 24

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS ON

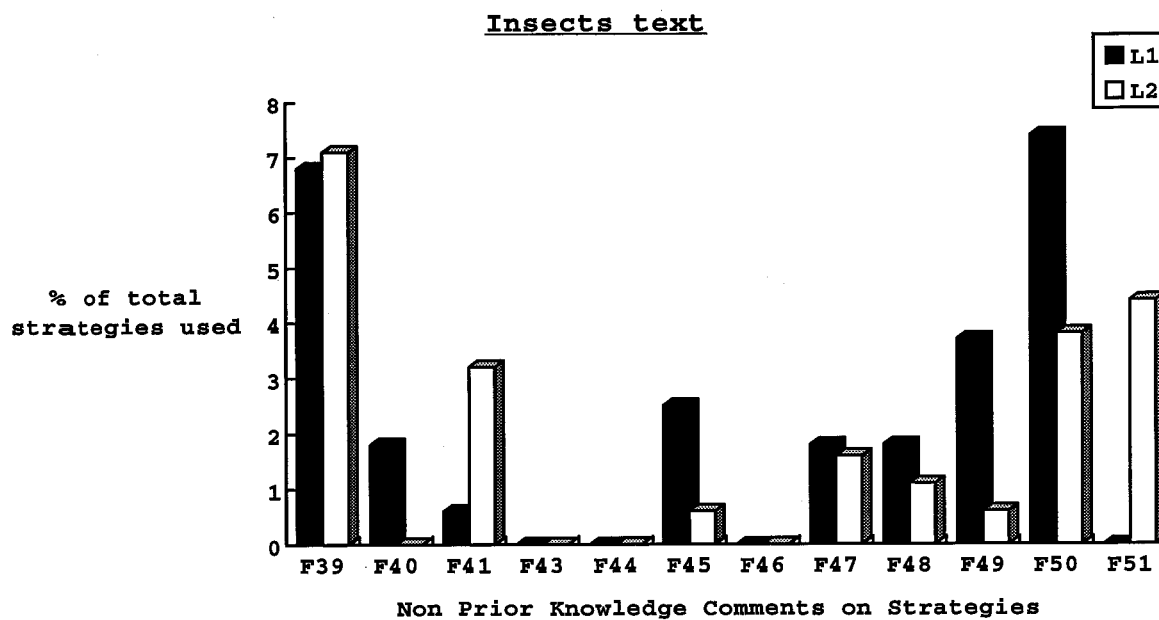
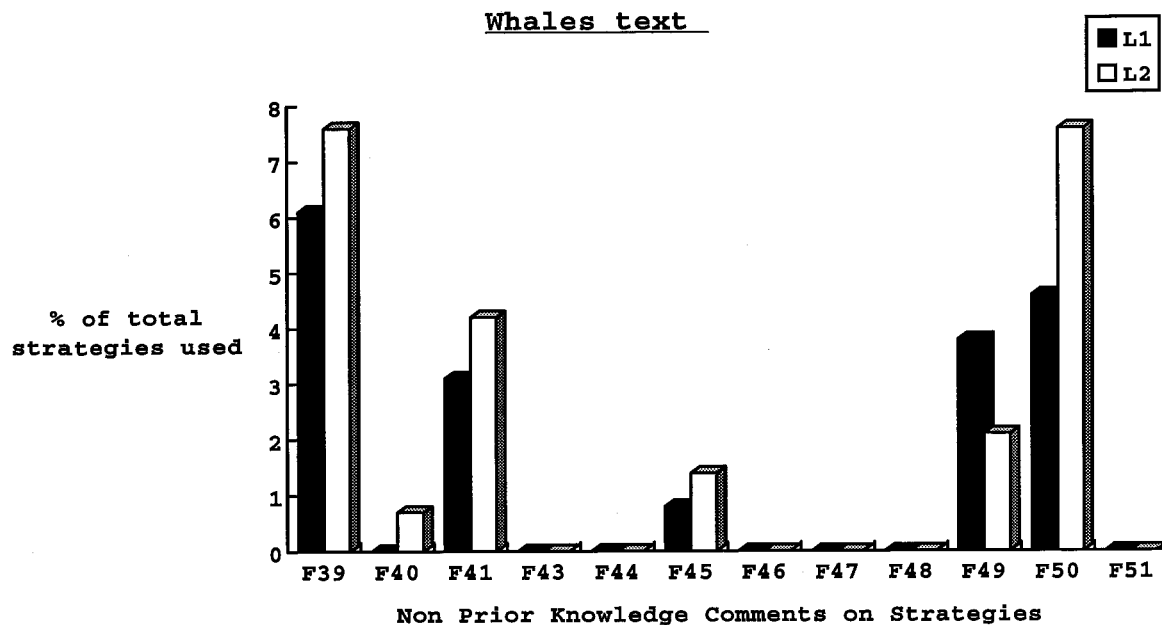


Table 36 presents L1 and L2 students' use of specific Non Prior Knowledge Comments on Strategies while answering Textually Implicit questions on both texts.

TABLE 36
L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
F39 Getting the answer	10 (5.9%)	17 (9.2%)	8 (3.5%)	14 (4.7%)
F40 Guessing	1 (0.6%)	0 (0.0%)	3 (1.3%)	0 (0.0%)
F41 Knowing	3 (1.8%)	6 (3.2%)	1 (0.4%)	2 (0.7%)
F43 Not able to find the answer	0 (0.0%)	1 (0.6%)	0 (0.0%)	2 (0.7%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
F45 Not knowing	3 (1.8%)	2 (1.1%)	12 (5.3%)	3 (1.0%)
F46 Not remembering	4 (2.3%)	2 (1.1%)	2 (0.9%)	0 (0.0%)
F47 Not sure	2 (1.1%)	1 (0.6%)	0 (0.0%)	2 (0.7%)
F48 Not willing to try	2 (1.1%)	1 (0.6%)	1 (0.4%)	2 (0.7%)
F49 Remembering	5 (2.9%)	2 (1.1%)	5 (2.2%)	0 (0.0%)
F50 Thinking	5 (2.9%)	8 (4.3%)	10 (4.4%)	10 (3.4%)
F51 Trying	0 (0.0%)	1 (0.6%)	0 (0.0%)	2 (0.7%)
Total	35 (20.4%)	41 (22.4%)	42 (18.4%)	37 (12.6%)

Fig. 25 shows graphically the data in Table 36. It illustrates the apparent differences between the two language groups in their use of specific Non Prior Knowledge Comments on Strategies when they answered Textually Implicit questions on both texts.

L1 students seemed to comment more frequently than L2 students did about not knowing (F45), not remembering (F46) and remembering (F49) in the Textually Implicit questions on both texts.

L2 students appeared to make more frequent comments about getting the answer (F39) and knowing (F41) than L1 students did in the Textually Implicit questions on both texts. The researcher considered these results to mean that L2 students seemed more preoccupied than L1 students were about answering the Textually Implicit questions on both texts.

The only inconsistent pattern of differences was in the use of the thinking (F50) comment. L2 students appeared to use it more frequently than L1 students in the Textually Implicit questions on Whales, while the reverse was the case in the Textually Implicit questions on the Insects text.

FIG. 25

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS ON

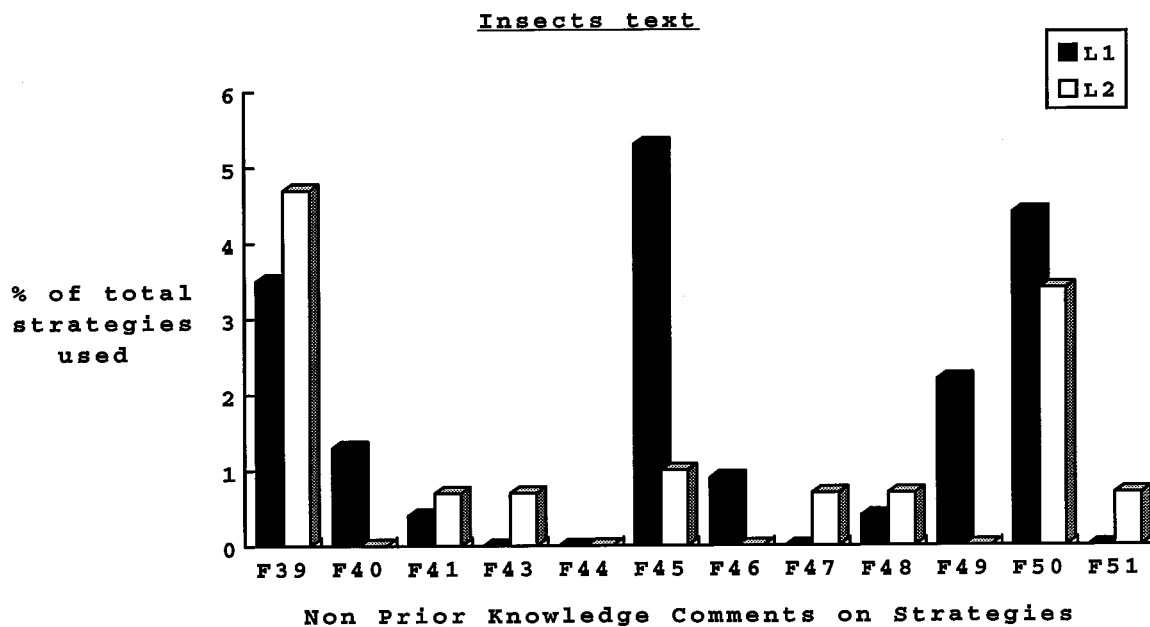
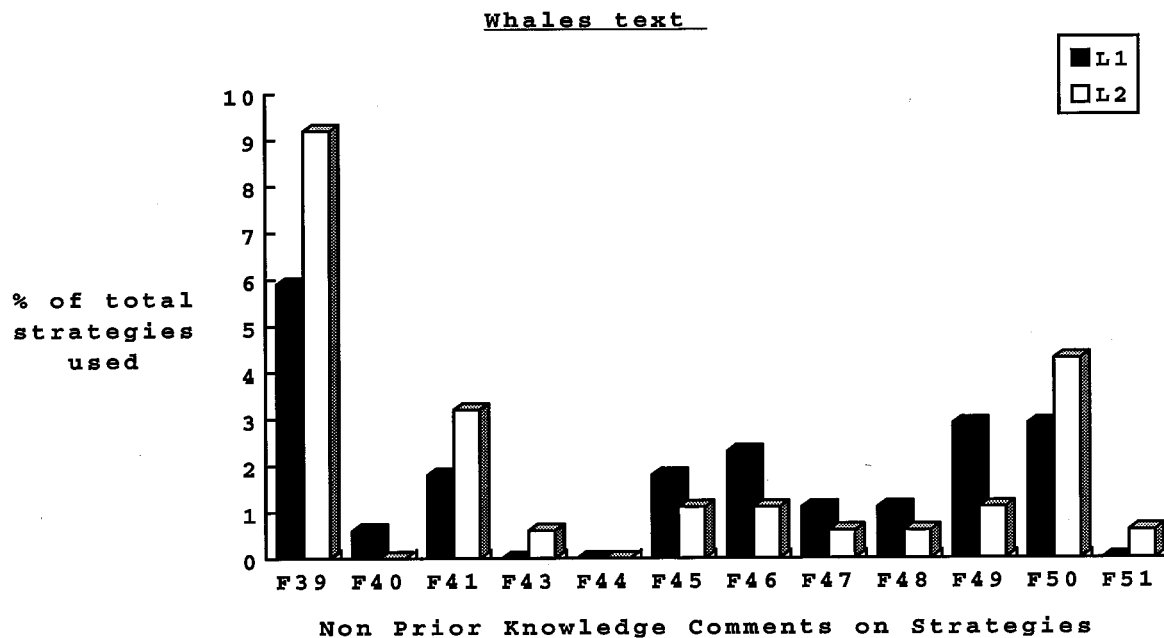


Table 37 provides the data of L1 and L2 students' use of specific Non Prior Knowledge Comments on Strategies while answering Scriptally Implicit questions on both texts.

TABLE 37
L1 AND 12 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
F39 Getting the answer	7 (2.9%)	12 (4.7%)	10 (4.2%)	10 (3.9%)
F40 Guessing	5 (2.1%)	4 (1.6%)	2 (0.8%)	1 (0.4%)
F41 Knowing	3 (1.2%)	3 (1.1%)	2 (0.8%)	1 (0.4%)
F43 Not able to find the answer	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.4%)
F44 Not able to think	0 (0.0%)	2 (0.8%)	1 (0.4%)	0 (0.0%)
F45 Not knowing	15 (6.2%)	3 (1.1%)	7 (2.9%)	4 (1.6%)
F46 Not remembering	2 (0.8%)	0 (0.0%)	3 (1.3%)	1 (0.4%)
F47 Not sure	2 (0.8%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
F48 Not willing to try	2 (0.8%)	1 (0.4%)	4 (1.7%)	4 (1.6%)
F49 Remembering	3 (1.2%)	3 (1.1%)	5 (2.1%)	0 (0.0%)
F50 Thinking	7 (2.9%)	11 (4.3%)	17 (7.0%)	20 (7.8%)
F51 Trying	1 (0.4%)	7 (2.8%)	0 (0.0%)	4 (1.6%)
Total	47 (19.3%)	46 (17.9%)	52 (21.6%)	46 (18.1%)

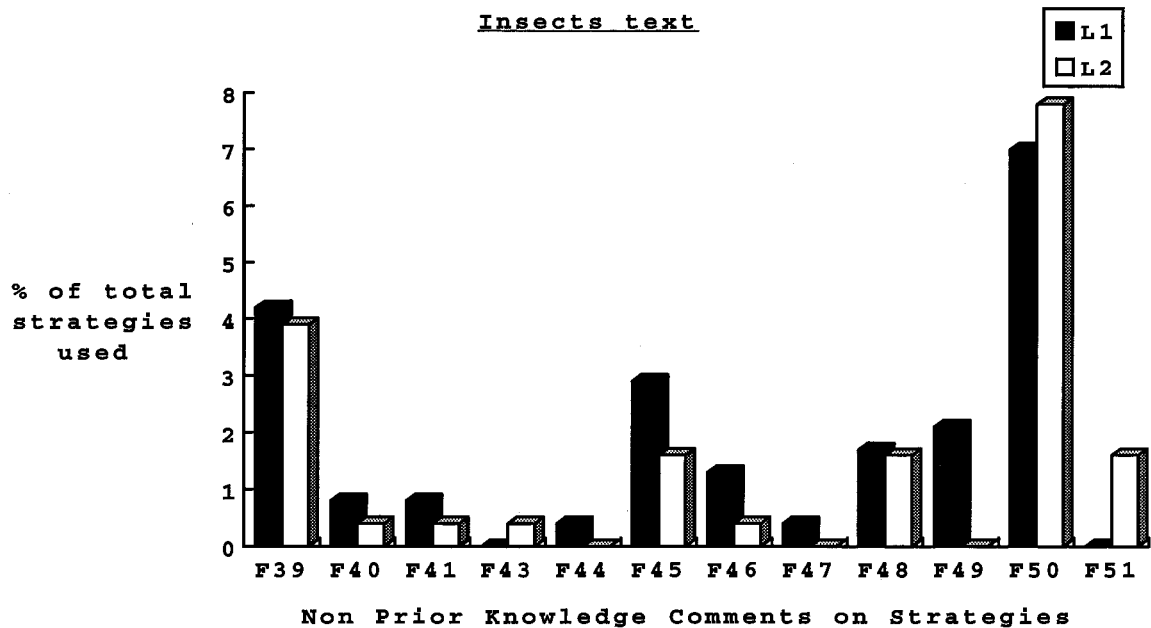
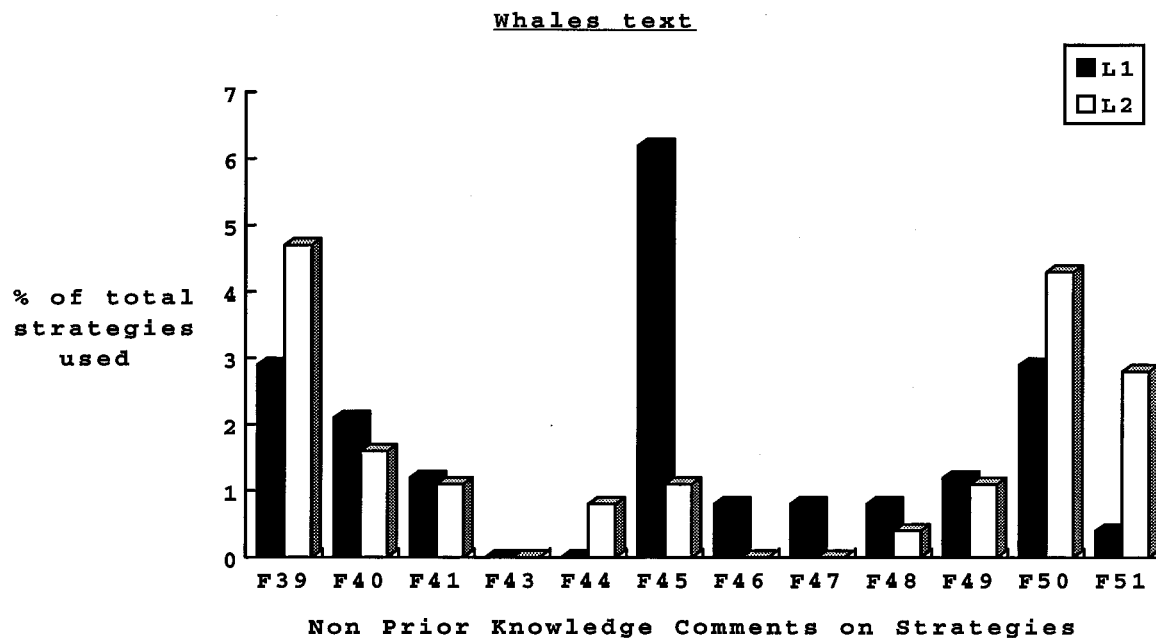
Fig. 26 illustrates the apparent differences between the two language groups. It is based on the data in Table 37.

L1 students appeared to comment more frequently than L2 students did about not knowing (F45) and not remembering (F46) in the Scriptally Implicit questions on both texts. They also apparently made more frequent comments about remembering (F49) than L2 students did in the Scriptally Implicit questions on the Insects text.

L2 students seemed to comment more often about thinking (F50) and trying (F51) than L1 students did in the Scriptally Implicit questions on both texts. They also appeared to make more frequent comments than L1 students did about getting the answer (F39) in the Scriptally Implicit questions on the Whales text.

FIG. 26

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS ON



Figures 25 and 26, but not Fig. 24, show a consistent pattern of differences between the two language groups. L1 students seemed to comment more often than L2 students did about their not knowing (F45) and not remembering (F46) in the Textually Implicit and Scriptally Implicit questions on both texts.

L2 students apparently commented more frequently than L1 students did about thinking (F50) and about trying (F51) in the Scriptally Implicit questions on both texts.

The researcher considered these findings to indicate that L1 students appeared to comment more frequently than L2 students did about the state of their knowledge or memory in the Textually Explicit and Scriptally Implicit questions on both texts. L2 students seemed more concerned than L1 students about their act of trying to answer the Scriptally Implicit questions on both texts.

Table 38 presents L1 and L2 students' use of specific Non Prior Knowledge Comments on Sources of Answers when they were replying to Textually Explicit questions on both texts.

TABLE 38
L1 AND 12 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G52 Answer	0 (0.0%)	0 (0.0%)	1 (0.6%)	0 (0.0%)
G53 Books	4 (3.0%)	4 (2.8%)	4 (2.5%)	7 (3.8%)
G54 Experience	1 (0.8%)	2 (1.4%)	1 (0.6%)	0 (0.0%)
G55 Films	1 (0.8%)	0 (0.0%)	1 (0.6%)	0 (0.0%)
G56 Hearing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G57 Learned from school	1 (0.8%)	4 (2.8%)	3 (1.8%)	2 (1.1%)
G58 Mind	1 (0.8%)	2 (1.4%)	0 (0.0%)	1 (0.6%)
G59 Myself	0 (0.0%)	0 (0.0%)	1 (0.6%)	0 (0.0%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
G64 People	3 (2.3%)	0 (0.0%)	1 (0.6%)	0 (0.0%)
G65 Previous question	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G66 Questions	5 (3.9%)	1 (0.7%)	1 (0.6%)	1 (0.6%)
G67 Quoting as proof	0 (0.0%)	0 (0.0%)	2 (1.2%)	0 (0.0%)

TABLE 38 (Continued)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G68 Reading	2 (1.5%)	3 (2.0%)	1 (0.6%)	0 (0.0%)
G69 Re-reading	0 (0.0%)	2 (1.4%)	1 (0.6%)	4 (2.1%)
G70 Seeing	2 (1.5%)	0 (0.0%)	6 (3.7%)	0 (0.0%)
G71 Television	1 (0.8%)	0 (0.0%)	0 (0.0%)	2 (1.1%)
G72 Text	6 (4.6%)	0 (0.0%)	4 (2.5%)	4 (2.1%)
G73 Text (paragraph Format)	4 (3.0%)	6 (4.1%)	5 (3.1%)	7 (3.8%)
G74 Text (sentence Format)	12 (9.2%)	4 (2.8%)	2 (1.2%)	3 (1.6%)
Total	44 (33.8%)	28 (19.4%)	34 (20.8%)	32 (17.4%)

Fig. 27, based on Table 38, illustrates graphically the apparent differences between the two language groups in their Comments on Sources of Answers to Textually Explicit questions on both texts.

Some cells in Table 38 were collapsed so that the data could be presented in one graph. Comments which were similar in nature were grouped together. These were:

GB Books	G53 books
	G68 reading
GF Films	G55 films
	G71 television
GL Learn	G57 learned from school
	G64 people
GM Myself	G58 mind
	G59 myself
GS Senses	G56 hearing
	G70 seeing
GT Text	G67 quoting as proof
	G72 text
	G73 text (paragraph format)
	G74 text (sentence format)

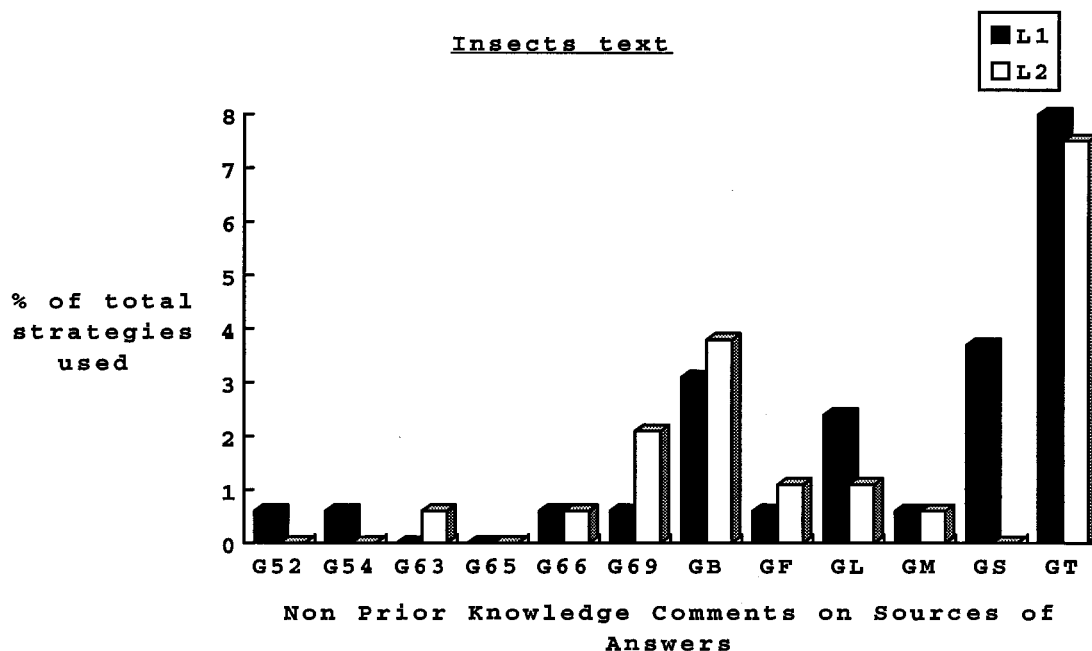
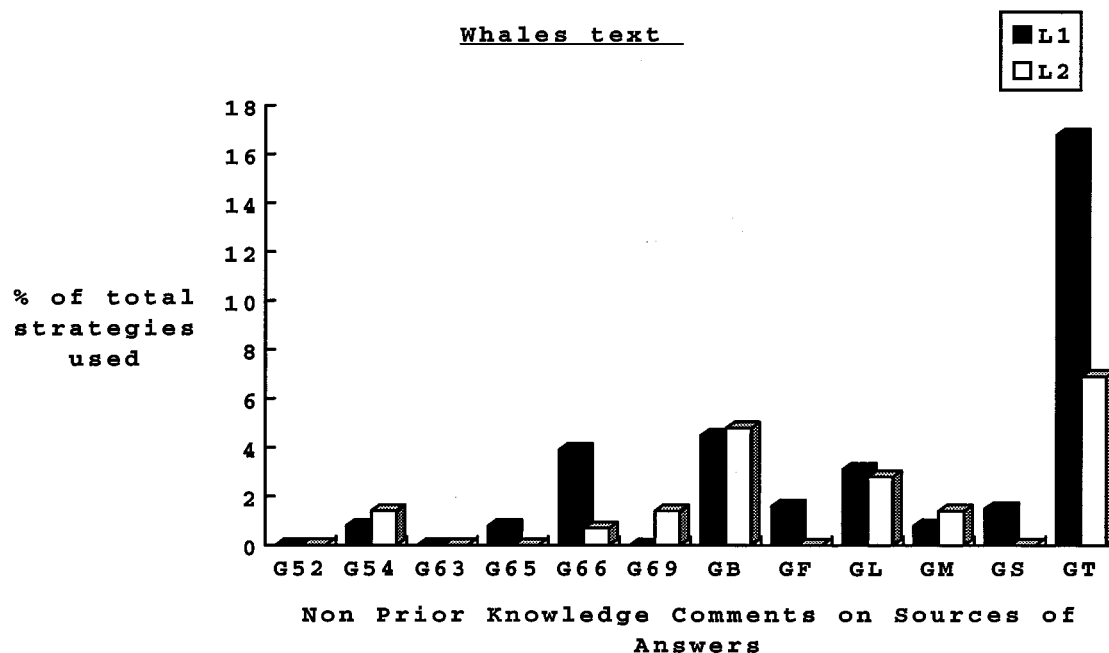
L1 apparently made more frequent comments than L2 students did about the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)), and about the senses (GS--hearing (G56) and seeing (G70)) as the sources of their answers to Textually Explicit questions on both texts.

L2 students seemed to comment more frequently than L1 students did about re-reading (G69) in the Textually Explicit questions on both texts.

While answering Textually Explicit questions on Whales, L1 students appeared to make more frequent comments than L2 students did about questions (G66) as their sources

FIG. 27

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS WHILE REPLYING TO TEXTUALLY EXPLICIT QUESTIONS ON



of answers. On the other hand, L2 students apparently commented more frequently than L1 students did about their experience (G54) and about myself (GM--mind (G58) and myself (G59)).

When L1 students answered Textually Explicit questions on Insects they seemed to make more frequent comments than L2 students did about what they had learned (GL--learned from school (G57) and people (G64)) as the source of their answers.

There was an example of an apparent reversal in the frequency of use of Comments on Sources of Answers. L1 students seemed to comment more frequently than L2 students did about films (GF--films (G55) and television (G71) in the Textually Explicit questions on Whales, and the reverse was the case in the Insects text with L2 students apparently making more comments about films (GF).

Table 39 provides the data of L1 and L2 students' use of specific Non Prior Knowledge Comments on Sources of Answers while replying to Textually Implicit Questions on both texts.

TABLE 39
L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G52 Answer	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G53 Books	5 (2.9%)	7 (3.7%)	4 (1.8%)	4 (1.4%)
G54 Experience	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G55 Films	1 (0.6%)	0 (0.0%)	2 (0.9%)	0 (0.0%)
G56 Hearing	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)
G57 Learned from school	0 (0.0%)	1 (0.6%)	2 (0.9%)	4 (1.4%)
G58 Mind	0 (0.0%)	1 (0.6%)	1 (0.4%)	0 (0.0%)
G59 Myself	2 (1.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)
G64 People	0 (0.0%)	0 (0.0%)	3 (1.3%)	1 (0.3%)
G65 Previous question	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
G66 Questions	4 (2.3%)	0 (0.0%)	1 (0.4%)	1 (0.3%)
G67 Quoting as proof	4 (2.3%)	1 (0.6%)	3 (1.3%)	0 (0.0%)

TABLE 39 (Continued)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G68 Reading	4 (2.3%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
G69 Re-reading	5 (2.9%)	1 (0.6%)	0 (0.0%)	7 (2.4%)
G70 Seeing	0 (0.0%)	0 (0.0%)	2 (0.9%)	6 (2.1%)
G71 Television	0 (0.0%)	1 (0.6%)	2 (0.9%)	0 (0.0%)
G72 Text	5 (2.9%)	4 (2.1%)	6 (2.7%)	3 (1.0%)
G73 Text (paragraph format)	2 (1.2%)	6 (3.2%)	1 (0.4%)	6 (2.1%)
G74 Text (sentence format)	11 (6.4%)	4 (2.1%)	4 (1.8%)	2 (0.7%)
Total	44 (25.6%)	27 (14.7%)	32 (14.1%)	36 (12.3%)

Fig. 28 is based on Table 39. As in Fig. 27 some cells in Table 39 were collapsed so that the data could be presented in one graph. The abbreviations in Fig. 28 are the same as those in Fig. 27.

While answering Textually Implicit questions on both texts, L1 students seemed to make more comments than L2 students did about the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence

format) (G74)) as their source of answers. It was noted that L1 students also apparently made more comments about the text (GT) in the Textually Explicit questions on both texts.

When L1 students answered Textually Implicit questions on Whales they seemed to comment more frequently than L2 students did about questions (G66), and about myself (GM--mind (G58) and myself (G59)) as the source of their answers.

L1 students appeared to comment more frequently than L2 students did about films (GF--films (G55) and television (G71)) and what they had learned (GL--learned from school (G57) and people (G64)) as the sources of their answers to Textually Implicit questions on Insects. On the other hand, L2 students apparently made more comments than L1 students did about the senses (GS--hearing (G56) and seeing (G70)) as the source of their answers to Textually Implicit questions on Insects.

There were two examples of apparent reversals in the frequency of use of some Comments on Sources of Answers. L1 students seemed to comment more frequently than L2 students in the Textually Implicit questions on Whales about re-reading (G69) and about books (GB--books (G53) and reading (G68)). The reverse was the case when they answered Textually Implicit questions on Insects, as L2 students apparently made more comments about re-reading (G68), and about books (GB).

FIG. 28

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON
SOURCES OF ANSWERS WHILE REPLYING TO TEXTUALLY IMPLICIT
QUESTIONS ON

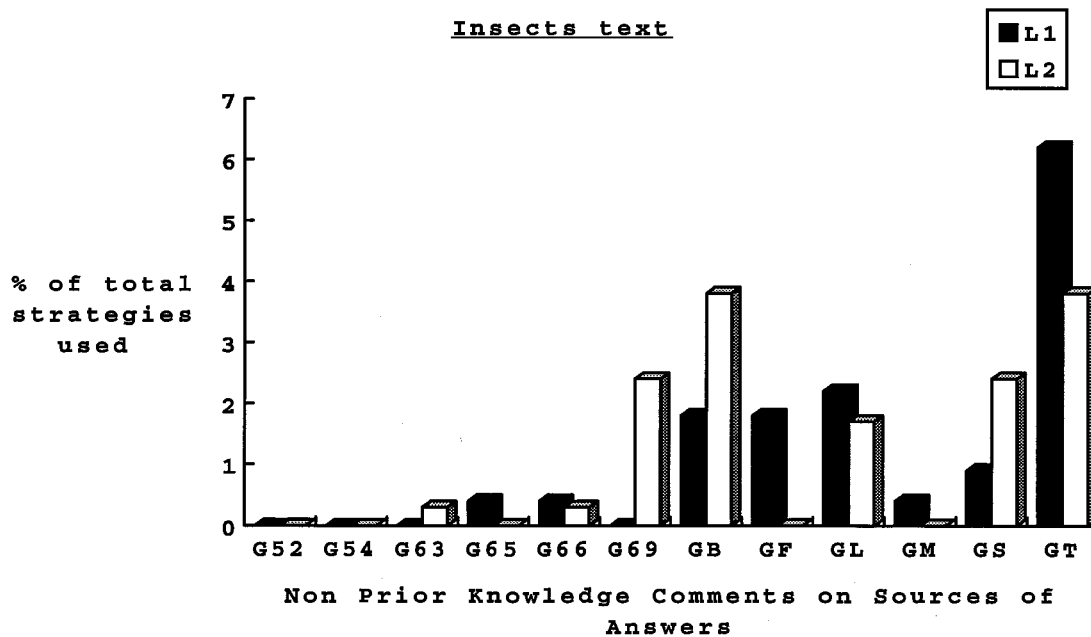
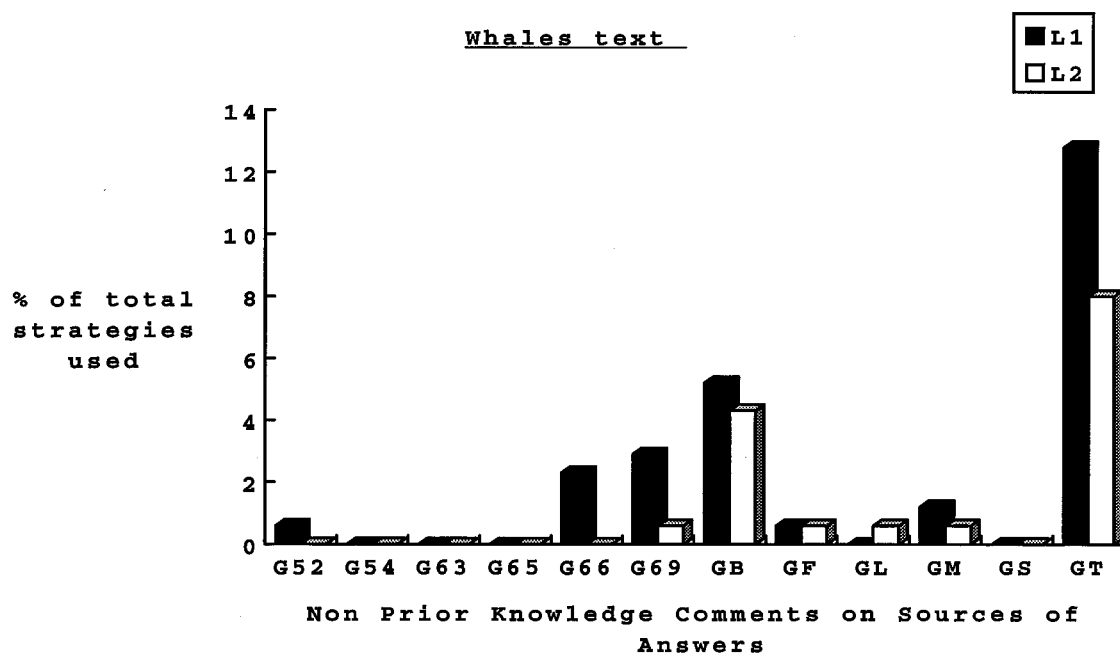


Table 40 provides the frequency counts of L1 and L2 students' use of specific Non Prior Knowledge Comments on Sources of Answers while replying to Scriptally Implicit questions on both texts.

TABLE 40
L1 AND L2 STUDENTS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G52 Answer	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G53 Books	3 (1.2%)	8 (3.2%)	4 (1.7%)	5 (1.9%)
G54 Experience	3 (1.2%)	5 (1.9%)	0 (0.0%)	0 (0.0%)
G55 Films	3 (1.2%)	0 (0.0%)	0 (0.0%)	1 (0.4%)
G56 Hearing	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G57 Learned from school	1 (0.4%)	1 (0.4%)	2 (0.8%)	3 (1.2%)
G58 Mind	1 (0.4%)	0 (0.0%)	1 (0.4%)	2 (0.8%)
G59 Myself	3 (1.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	1 (0.4%)	1 (0.4%)
G64 People	0 (0.0%)	0 (0.0%)	2 (0.8%)	2 (0.8%)
G65 Previous question	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G66 Questions	2 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
G67 Quoting as proof	6 (2.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

TABLE 40 (Continued)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
G68 Reading	3 (1.2%)	1 (0.4%)	0 (0.0%)	0 (0.0%)
G69 Re-reading	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.4%)
G70 Seeing	1 (0.4%)	0 (0.0%)	2 (0.8%)	2 (0.8%)
G71 Television	0 (0.0%)	1 (0.4%)	3 (1.3%)	5 (1.9%)
G72 Text	0 (0.0%)	1 (0.4%)	1 (0.4%)	2 (0.8%)
G73 Text (paragraph format)	0 (0.0%)	1 (0.4%)	1 (0.4%)	0 (0.0%)
G74 Text (sentence format)	1 (0.4%)	1 (0.4%)	2 (0.8%)	1 (0.4%)
Total	29 (11.6%)	19 (7.5%)	19 (7.8%)	25 (9.8%)

Fig. 29 is based on Table 40. Comments which were similar in nature were grouped, just as they had been for Figures 27 and 28.

As was the case with Textually Explicit and Textually Implicit questions on both texts, L1 student apparently made more comments than L2 students did about the text (GT--
quoting as proof (G67), text (G72), text (paragraph format)

(G73) and text (sentence format) (G74)) as their source of answers to Scriptally Implicit questions on both texts.

L2 students seemed to comment more frequently than L1 students did about books (GB--books (G53) and reading (G68)) as the source of their answers to Scriptally Implicit questions on both texts.

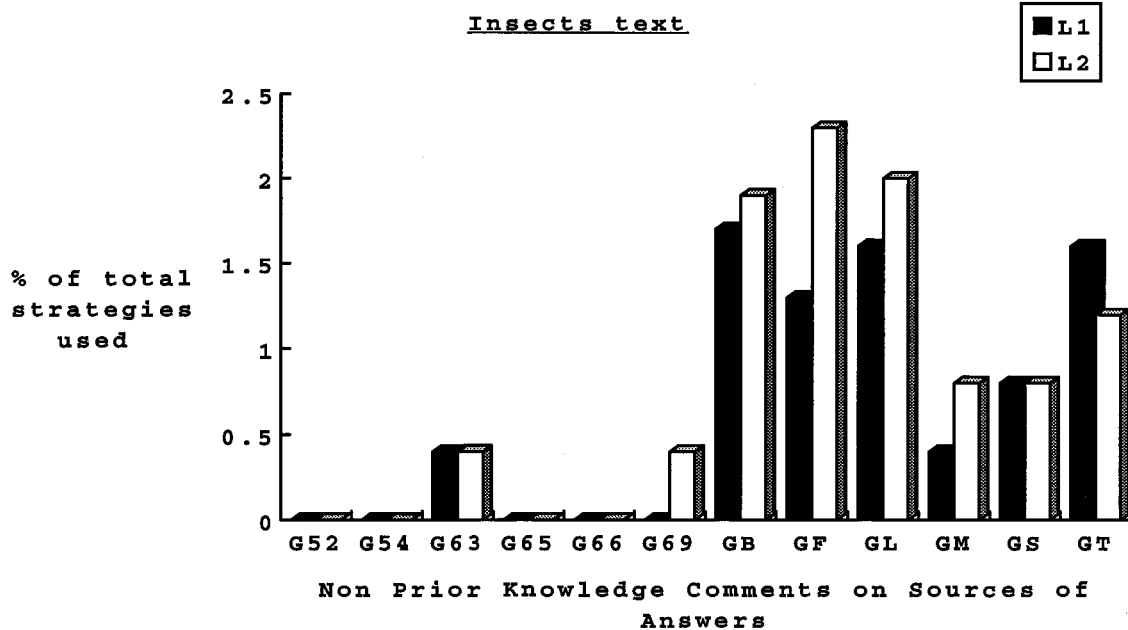
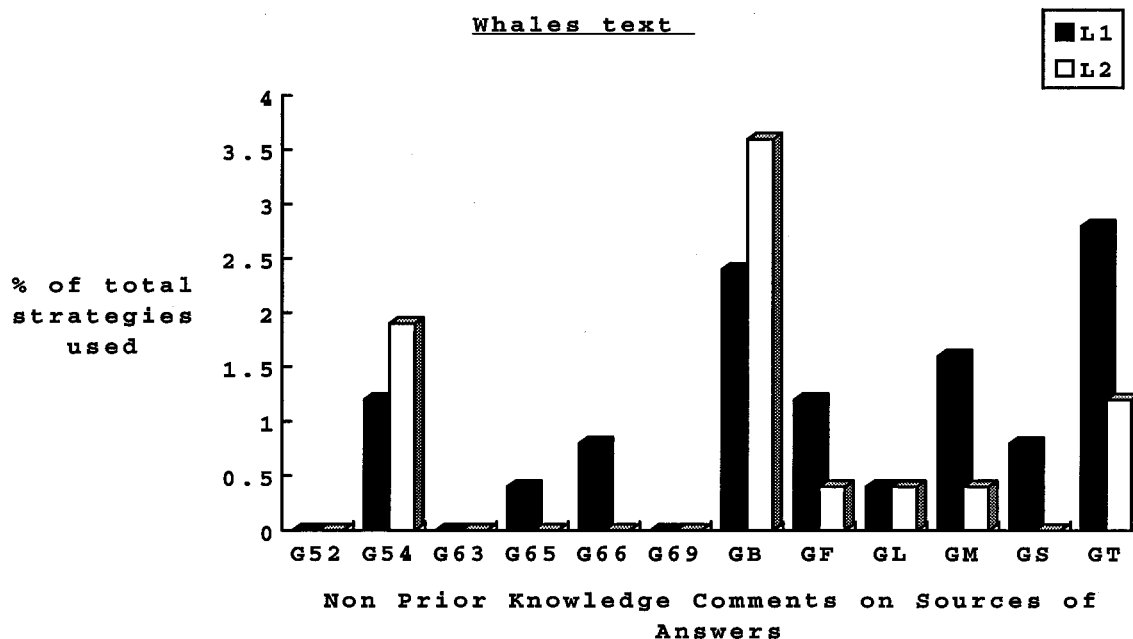
L1 students appeared to make more comments than L2 students did about questions (G66) and the senses (GS--hearing (G56) and seeing (G70)) as the source of their answers to Scriptally Implicit questions on Whales. However, L2 students apparently commented more frequently than L1 students did about their experience (G54) as the source of their answers to Scriptally Implicit questions on Whales.

L2 seemed to make more frequent comments than L1 students did about what they had learned (GL--learned from school (G57) and people (G64)) as the source of their answers to Scriptally Implicit questions on Insects.

There were two examples of apparent reversals in the frequency of use of some Comments on Sources of Answers. L1 students seemed to make more frequent comments than L2 students did about films (GF--films (G55) and television (G71)) and about myself (GM--mind (G58) and myself (G59)) as the sources of their answers to Scriptally Implicit questions on Whales. The reverse was the case in the Scriptally Implicit questions on Insects. L2 students apparently commented more frequently than L1 students about films (GF) and about myself (GM).

FIG. 29

L1 AND L2 READERS' USE OF NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS WHILE REPLYING TO SCRIPTALLY IMPLICIT QUESTIONS ON



Figures 27, 28 and 29 show a consistent pattern in L1 students apparently making more frequent references to the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)) as the source of their answers to all three types of questions. It was predictable that L1 students would comment on the text (GT) as their source of answers to Textually Explicit questions. Answers to Textually Explicit questions could be found in the text, and answers to Textually Implicit questions could be inferred from the text. However, answers to Scriptally Implicit questions could not be found in the text. The researcher interpreted this finding to mean that some L1 students seemed to believe their answers to Scriptally Implicit questions came from the text.

L2 students seemed to comment more frequently than L1 student did that books (GB--books (G53) and reading (G68)) were the sources of their answers to Scriptally Implicit questions on both texts. This finding is more in harmony with the definition of Scriptally Implicit questions, because readers had to use their own resources to answer this type of questions.

To summarize the findings in 4 (c):

L1 students appeared to use the quoting (A2) strategy more frequently than L2 students did in Textually Explicit questions on both texts. L2 students apparently used the

paraphrasing (A1) strategy more often than L1 students did in the Textually Implicit questions on both texts.

There was no consistent pattern of differences between the two language groups in their use of Non Prior Knowledge Interpretation strategies. In fact there was evidence of an apparent reversal with one language group appearing to use reasoning (B16) strategy more frequently while answering one type of question on a text, and the other language group apparently using the reasoning (B16) strategy more often while answering the same type of question on the other text.

L1 students seemed to comment on remembering (F49) more frequently than L2 students did in Textually Explicit and Textually Implicit questions on both texts. They apparently made more frequent comments than L2 students did about not knowing (F45) and not remembering (F46) in Textually Implicit and Scriptally Implicit questions on both texts.

L2 students appeared to comment more often than L1 students did about knowing (F41) in the Textually Explicit and Textually Implicit questions on both texts. They seemed to comment more frequently than L1 students did about getting the answer (F39) in Textually Implicit questions on both texts. They apparently made more frequent comments than L1 students did about thinking (F50) and about trying (F51) in Scriptally Implicit questions on both texts.

L1 students seemed to comment more often than L2 students did about the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)) as the source of their answers to all three types of questions on both texts.

L2 students apparently made more frequent comments than L1 students did about re-reading (G69) as their source of answers to Textually Explicit questions on both texts. They seemed to comment more frequently than L1 students did about books (GB--books (G53) and reading (G68)) as the source of their answers to Scriptally Implicit questions on both texts.

Question 4 (d) Differences between the three types of questions and the use of specific Non Prior Knowledge strategies by L1 and by L2 students.

It was decided to examine specific Non Prior Knowledge strategies in only those categories of strategies in which differences had been found in 4 (b) (see Fig. 16 and Fig. 17). Thus specific strategies in the categories of Evaluation (C), Monitoring of Understanding (D) and Attempts to Answer (E) were not analyzed

Table 41 presents L1 students' use of specific Non Prior Knowledge Explanation strategies while answering the three types of questions on the Whales text.

TABLE 41

L1 READERS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

		TE	L1 Whales TI	SI
Strategies				
A1	Paraphrasing	13 (10.0%)	3 (1.8%)	7 (2.9%)
A2	Quoting	12 (9.2%)	0 (0.0%)	1 (0.4%)
Total		25 (19.2%)	3 (1.8%)	8 (3.3%)

Table 42 presents L2 students' use of specific Non Prior Knowledge Explanation strategies while answering the three types of questions on the Whales text.

TABLE 42

L2 READERS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

		TE	L2 Whales TI	SI
Strategies				
A1	Paraphrasing	13 (9.2%)	6 (3.2%)	14 (5.5%)
A2	Quoting	9 (6.1%)	0 (0.0%)	4 (1.6%)
Total		22 (15.3%)	6 (3.2%)	18 (7.1%)

Fig. 30 illustrates graphically the data in Tables 41 and 42. Both L1 and L2 students apparently used the paraphrasing (A1) and the quoting (A2) strategies more frequently in the Textually Explicit questions than they did in the other two types of questions on the Whales text.

FIG. 30

USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI), AND SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE
WHALES TEXT

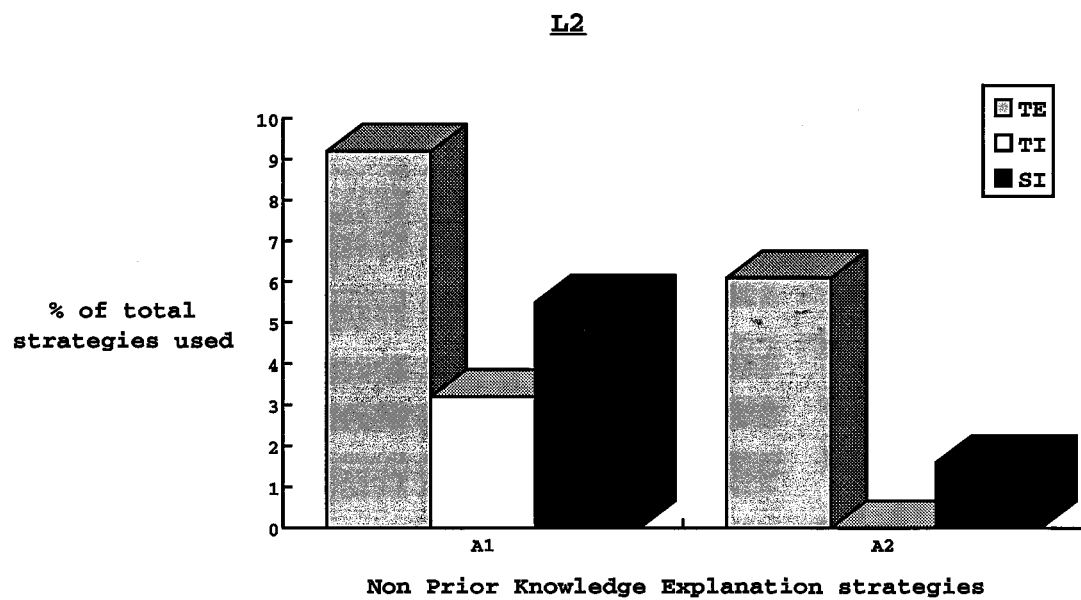
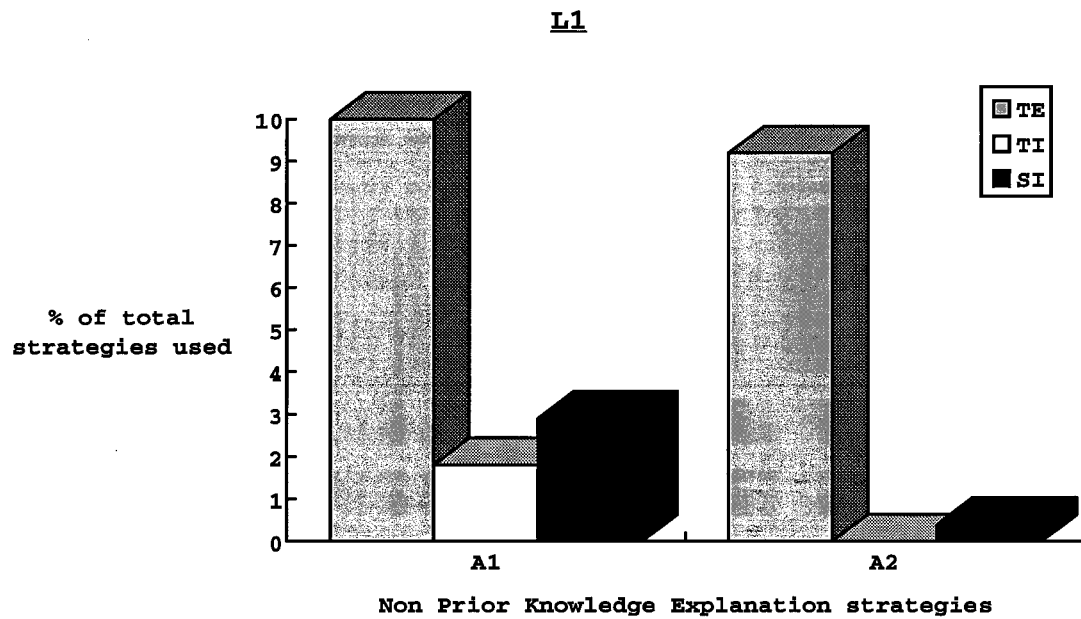


Table 43 provides the data of L1 students' use of specific Non Prior Knowledge Explanation strategies while answering the three types of questions on the Insects text

TABLE 43

L1 READERS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

		TE	L1 Insects TI	SI
Strategies				
A1	Paraphrasing	10 (6.1%)	3 (1.3%)	23 (9.6%)
A2	Quoting	15 (9.2%)	0 (0.0%)	0 (0.0%)
Total		25 (15.3%)	3 (1.3%)	23 (9.6%)

Table 44 presents L2 students' use of specific Non Prior Knowledge Explanation strategies while answering the three types of questions on the Insects text.

TABLE 44

L2 READERS' USE OF
NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

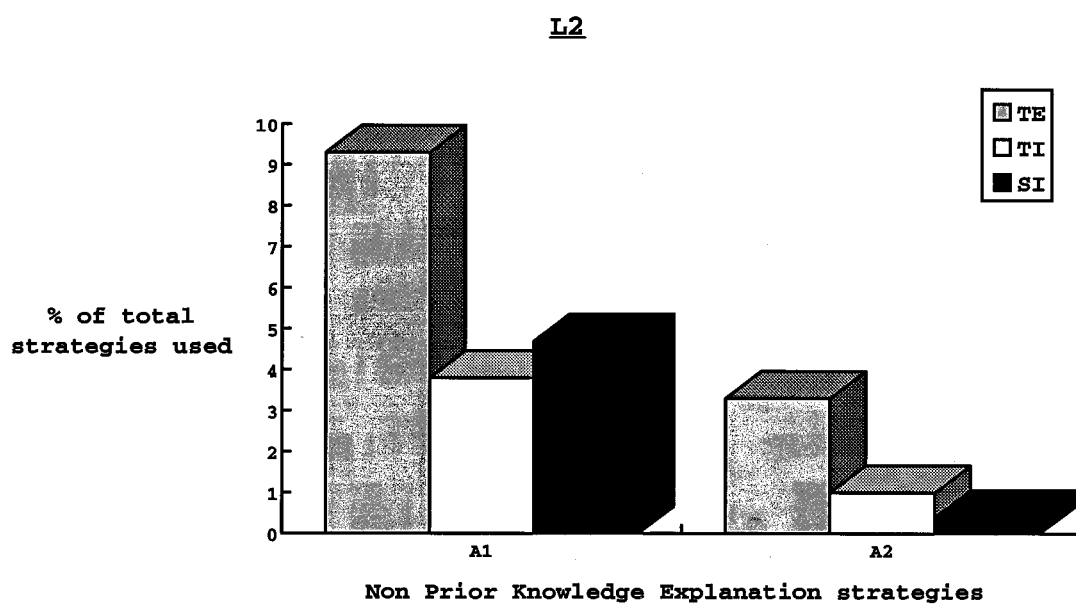
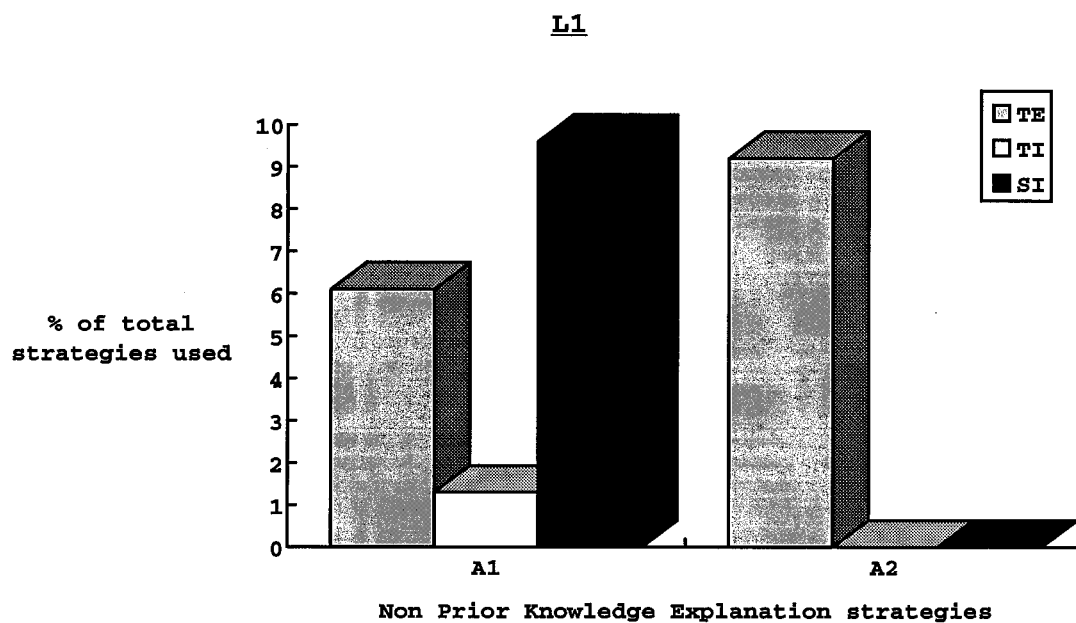
		TE	L2 Insects TI	SI
Strategies				
A1	Paraphrasing	17 (9.3%)	11 (3.8%)	12 (4.7%)
A2	Quoting	6 (3.3%)	3 (1.0%)	1 (0.4%)
Total		23 (12.6%)	14 (4.8%)	13 (5.1%)

Fig. 31 is based on the data in Tables 43 and 44. It shows that as in the Whales texts (see Fig. 30) both L1 and L2 students seemed to use the quoting (A2) strategy more frequently in the Textually Explicit questions than they did in the other two types of question on the Insects text.

L1 appeared to be different from L2 in their use of the paraphrasing (A1) strategy. L1 students apparently used it more frequently in the Scriptally Implicit questions, while L2 students seemed to use it more often in the Textually Explicit questions on the Insects texts. Both language groups apparently used the paraphrasing (A1) strategy more frequently in the Textually Explicit questions on the Whales text.

FIG. 31

USE OF NON PRIOR KNOWLEDGE EXPLANATION STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI), AND SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE
INSECTS TEXT



Figures 30 and 31 show that L1 and L2 students seemed to use the quoting (A2) strategy more frequently in the Textually Explicit questions than they did in the other two types of questions on both texts. Answers to Textually Explicit questions could be found in the text, and it is logical to expect that they would use the quoting (A2) strategy when they answered Textually Explicit questions.

Table 45 provides the data for L1 students' use of specific Non Prior Knowledge Interpretation strategies while answering the three types of questions on Whales.

TABLE 45

L1 READERS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L1 Whales TI	SI
B (II) Interpretation			
Non Prior Knowledge Category			
B 5 Confirming	0 (0.0%)	1 (0.5%)	1 (0.4%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 9 Expressing suppositions	2 (1.5%)	4 (2.3%)	12 (4.9%)
B11 Giving consequences	1 (0.8%)	8 (4.7%)	10 (4.2%)
B13 Making inferences	0 (0.0%)	16 (9.4%)	0 (0.0%)
B16 Reasoning	1 (0.8%)	16 (9.4%)	25 (10.4%)
B19 Summarizing	1 (0.8%)	0 (0.0%)	0 (0.0%)
Total	5 (3.9%)	45 (26.3%)	48 (19.9%)

Table 46 presents L2 students' use of specific Non Prior Knowledge Interpretation strategies while answering the three types of questions on the Whales text.

TABLE 46
L2 READERS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L2 Whales TI	SI
B (II) Interpretation			
Non Prior Knowledge Category			
B 5 Confirming	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 9 Expressing suppositions	0 (0.0%)	6 (3.3%)	4 (1.6%)
B11 Giving consequences	0 (0.0%)	9 (4.9%)	7 (2.8%)
B13 Making inferences	1 (0.7%)	18 (9.8%)	0 (0.0%)
B16 Reasoning	6 (4.2%)	15 (8.2%)	33 (12.9%)
B19 Summarizing	4 (2.8%)	0 (0.0%)	0 (0.0%)
Total	11 (7.7%)	48 (26.2%)	44 (17.3%)

Fig. 32 illustrates graphically the data in Tables 45 and 46.

L2 students appeared to use the summarizing (B19) strategy more often when they answered Textually Explicit questions than they did in the other two types of question on the Whales text.

L2 students and L1 students, to some extent, seemed to use the giving consequences (B11) strategy more frequently in the Textually Implicit questions than in the other two types of questions on the Whales text.

L1 and L2 students apparently used the making inferences (B13) strategy more frequently in the Textually Implicit questions than they did in the other two types of question on the Whales text.

Both language groups seemed to use the reasoning (B16) strategy more often in the Scriptally Implicit questions than they did in the other two types of questions on the Whales text.

L1 students appeared to differ from L2 students in that L1 students apparently used the expressing suppositions (B9) strategy more often in the Scriptally Implicit questions, while L2 students used this same strategy more frequently in the Textually Implicit questions on the Whales text.

FIG. 32

USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI), AND SCRIPTALLY IMPLICIT (SI)
QUESTIONS ON THE WHALES TEXT

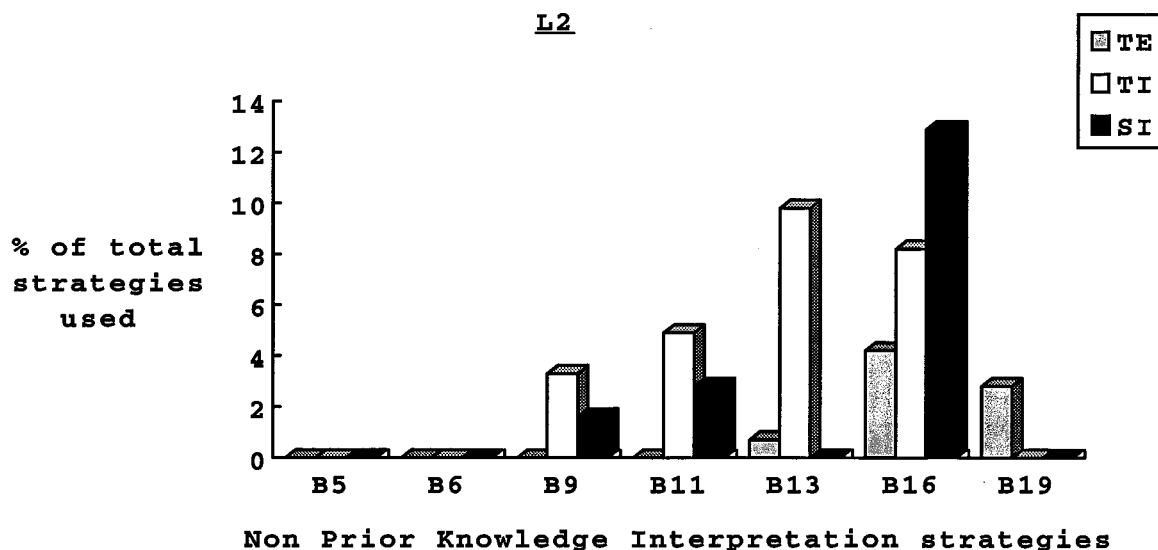
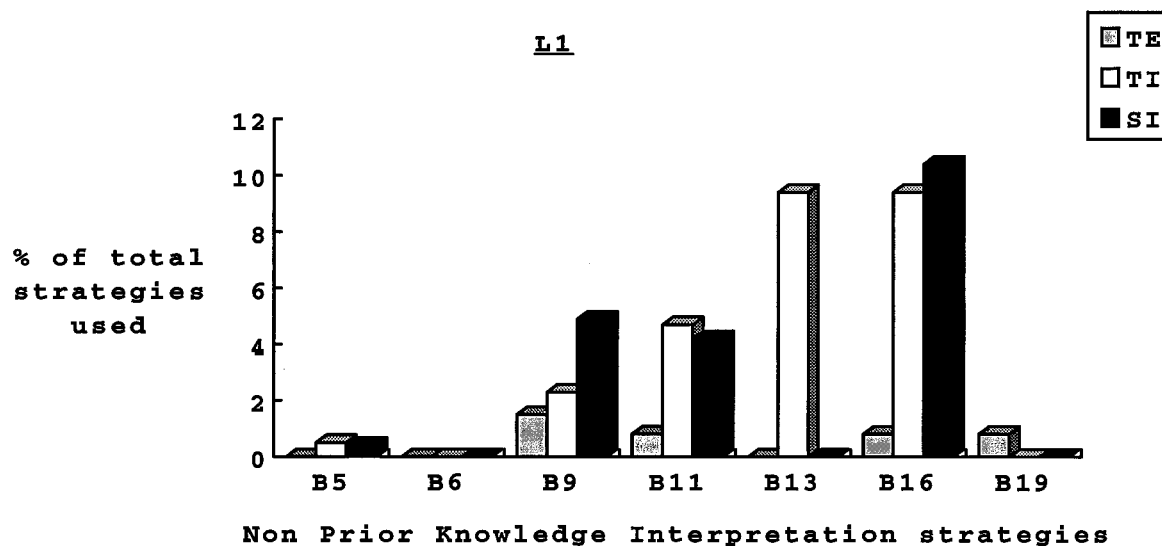


Table 47 presents L1 students' use of specific Non Prior Knowledge Interpretation strategies while answering the three types of question on the Insects text.

TABLE 47
L1 READERS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

	TE	L1 Insects TI	SI
B (II) Interpretation Non Prior Knowledge Category			
B 5 Confirming	0 (0.0%)	2 (0.9%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	1 (0.4%)	1 (0.4%)
B 9 Expressing suppositions	0 (0.0%)	2 (0.9%)	2 (0.8%)
B11 Giving consequences	0 (0.0%)	1 (0.4%)	3 (1.3%)
B13 Making inferences	0 (0.0%)	22 (9.8%)	2 (0.8%)
B16 Reasoning	2 (1.2%)	10 (4.4%)	26 (10.8%)
B19 Summarizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	2 (1.2%)	38 (16.8%)	34 (14.1%)

Table 48 gives L2 students' use of Non Prior Knowledge Interpretation strategies while answering the three types of questions on the Insects text.

TABLE 48

L2 READERS' USE OF
NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

	TE	L2 Insects TI	SI
B (II) Interpretation			
Non Prior Knowledge Category			
B 5 Confirming	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 6 Contradicting previous thought	0 (0.0%)	0 (0.0%)	0 (0.0%)
B 9 Expressing suppositions	1 (0.5%)	1 (0.3%)	4 (1.5%)
B11 Giving consequences	1 (0.5%)	0 (0.0%)	3 (1.2%)
B13 Making inferences	0 (0.0%)	21 (7.2%)	0 (0.0%)
B16 Reasoning	0 (0.0%)	15 (5.2%)	21 (8.2%)
B19 Summarizing	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	2 (1.0%)	37 (12.7%)	28 (10.9%)

Fig. 33 is based on the data in Tables 47 and 48. Both L1 and L2 students seemed to use the making inferences (B13) strategy more often in the Textually Implicit questions than in the other two types of question on the Insects text, just as they apparently did in the Textually Explicit questions on the Whales text (see Fig. 32).

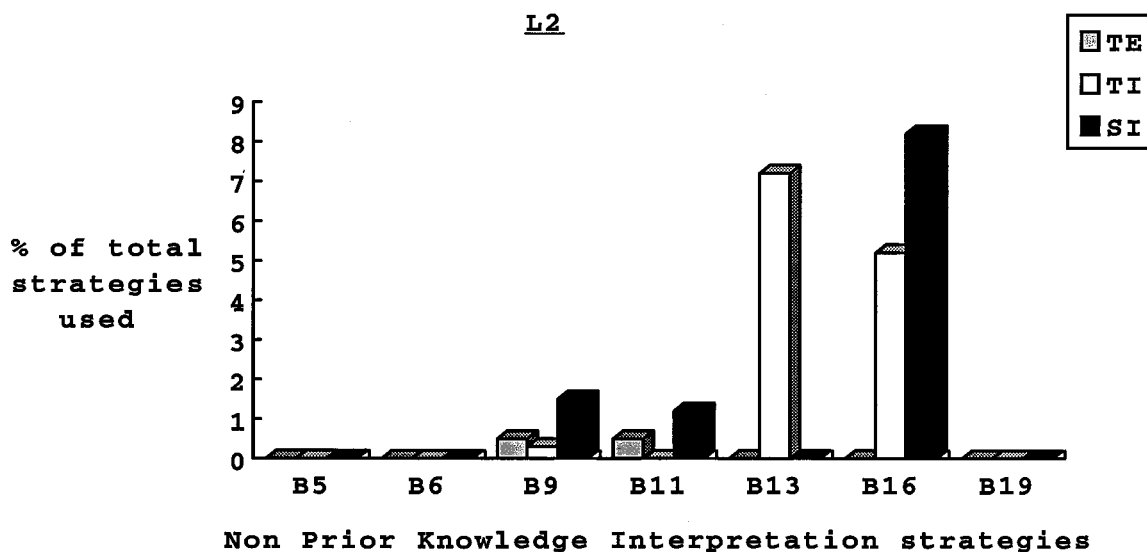
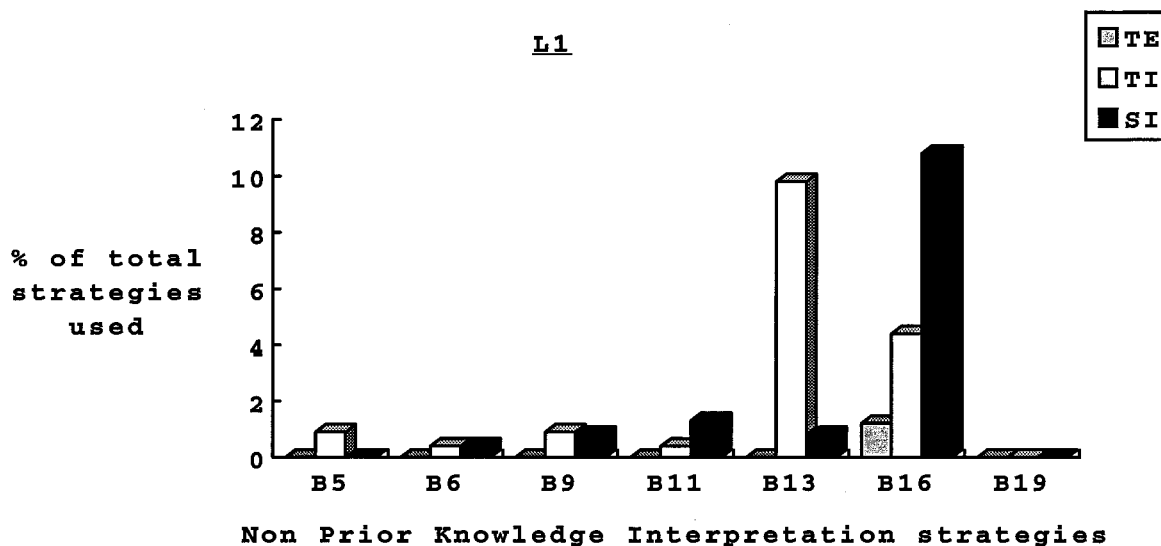
Both language groups appeared to use the reasoning (B16) strategy more frequently in the Scriptally Implicit questions than in the other two types of questions on the Insects text. It was noted in the Whales text, that they seemed to use the reasoning (B16) strategy more often in the Scriptally Implicit questions.

L1 and L2 students apparently used the giving consequences (B11) strategy more often in the Scriptally Implicit questions than they did in the other two types of questions on the Insects text. In the Whales text, they seemed to use this same strategy more frequently in the Textually Implicit questions.

L2 students, but not L1 students, appeared to use the expressing suppositions (B9) strategy more frequently in the Scriptally Implicit questions than in the other two types of questions on the Insects text, just as L1 students apparently did in the Scriptally Implicit questions on the Whales text.

FIG. 33

USE OF NON PRIOR KNOWLEDGE INTERPRETATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI), AND SCRIPTALLY IMPLICIT (SI)
QUESTIONS ON THE INSECTS TEXT



Figures 32 and 33 illustrate that both groups of students seemed to use the making inferences (B13) more often in the Textually Implicit questions on both texts. Textually Implicit questions invited inferences and both groups apparently used the making inferences (B13) strategy more frequently in the Textually Implicit questions on both texts.

Many Scriptally Implicit questions began with the word "Why..?", and so it is not surprising that both L1 and L2 students seemed to use the reasoning (B16) strategy more often when they answered Scriptally Implicit questions on both texts.

Table 49 presents L1 students' use of specific Non Prior Knowledge Comments on Strategies while answering the three types of questions on the Whales text.

TABLE 49
L1 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L1 Whales TI	SI
F39 Getting the answer	8 (6.1%)	10 (5.9%)	7 (2.9%)
F40 Guessing	0 (0.0%)	1 (0.6%)	5 (2.1%)
F41 Knowing	4 (3.1%)	3 (1.8%)	3 (1.2%)
F43 Not able to find the answer	0 (0.0%)	0 (0.0%)	0 (0.0%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	0 (0.0%)
F45 Not knowing	1 (0.8%)	3 (1.8%)	15 (6.2%)
F46 Not remembering	0 (0.0%)	4 (2.3%)	2 (0.8%)
F47 Not sure	0 (0.0%)	2 (1.1%)	2 (0.8%)
F48 Not willing to try	0 (0.0%)	2 (1.1%)	2 (0.8%)
F49 Remembering	5 (3.8%)	5 (2.9%)	3 (1.2%)
F50 Thinking	6 (4.6%)	5 (2.9%)	7 (2.9%)
F51 Trying	0 (0.0%)	0 (0.0%)	1 (0.4%)
Total	24 (18.49%)	35 (20.4%)	47 (19.3%)

L2 students' use of specific Non Prior Knowledge
Comments on Strategies while answering the three types of
questions on the Whales text is presented in Table 50.

TABLE 50
L2 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L2 Whales TI	SI
F39 Getting the answer	11 (7.6%)	17 (9.2%)	12 (4.7%)
F40 Guessing	1 (0.7%)	0 (0.0%)	4 (1.6%)
F41 Knowing	6 (4.2%)	6 (3.2%)	3 (1.1%)
F43 Not able to find the answer	0 (0.0%)	1 (0.6%)	0 (0.0%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	2 (0.8%)
F45 Not knowing	2 (1.4%)	2 (1.1%)	3 (1.1%)
F46 Not remembering	0 (0.0%)	2 (1.1%)	0 (0.0%)
F47 Not sure	0 (0.0%)	1 (0.6%)	0 (0.0%)
F48 Not willing to try	0 (0.0%)	1 (0.6%)	1 (0.4%)
F49 Remembering	3 (2.1%)	2 (1.1%)	3 (1.1%)
F50 Thinking	11 (7.6%)	8 (4.3%)	11 (4.3%)
F51 Trying	0 (0.0%)	1 (0.6%)	7 (2.8%)
Total	34 (23.6%)	41 (22.4%)	46 (17.9%)

Fig. 34 presents graphically the data in Tables 49 and 50.

Both L1 and L2 students appeared to comment about knowing (F41), remembering (F49) and thinking (F50) strategies more often in the Textually Explicit questions than they did in the other two types of questions on the Whales text. The researcher considered these findings to mean that both groups of students seemed to feel certain about their answers to Textually Explicit questions on the Whales text.

They apparently used the not remembering (F46) more frequently in the Textually Implicit questions than in the other two types of questions on the Whales text.

Both language groups seemed to use the guessing (F40) strategy more often in the Scriptally Implicit questions than in the other two types of questions on the Whales text. The researcher interpreted this finding to mean that both language groups appeared uncertain about their answers to the Scriptally Implicit questions on the Whales text.

There were apparent differences between the two groups. L1, but not L2 students, seemed to use the not knowing (F45) strategy more often in the Scriptally Implicit questions than in the other two types of questions on the Whales text. L2, but not L1 students, apparently commented more often about getting the answer (F39) in the Textually Implicit questions, and about trying (F51) in the Scriptally Implicit questions on the Whales text.

FIG. 34

USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI), AND SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE
WHALES TEXT

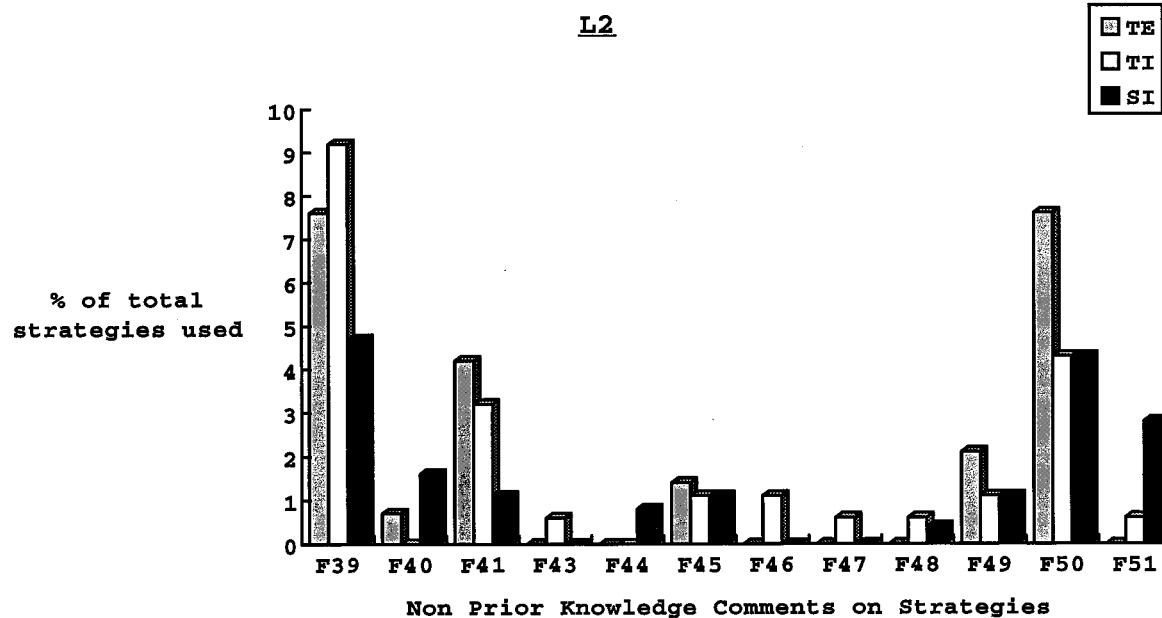
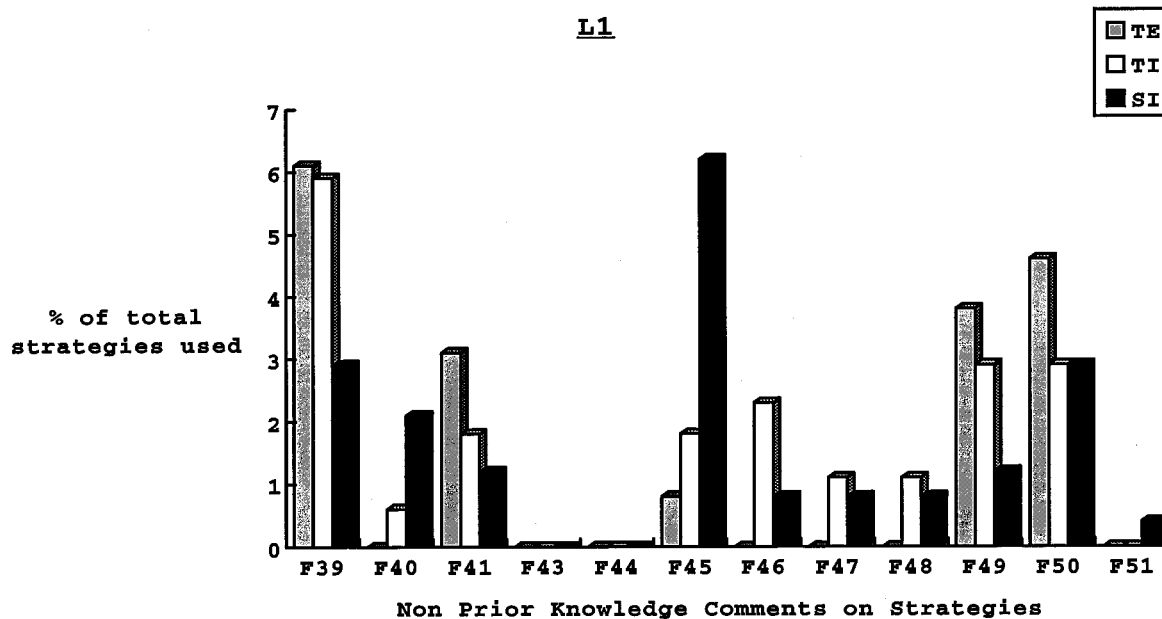


Table 51 presents L1 students' use of specific Non Prior Knowledge Comments on Strategies while answering the three types of questions on the Insects texts.

TABLE 51
 L1 READERS' USE OF
 NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
 WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
 (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
 ON THE INSECTS TEXT
 (Percentages in parentheses)

	TE	L1 insects TI	SI
F39 Getting the answer	11 (6.8%)	8 (3.5%)	10 (4.2%)
F40 Guessing	3 (1.8%)	3 (1.3%)	2 (0.8%)
F41 Knowing	1 (0.6%)	1 (0.4%)	2 (0.8%)
F43 Not able to find the answer	0 (0.0%)	0 (0.0%)	0 (0.0%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	1 (0.4%)
F45 Not knowing	4 (2.5%)	12 (5.3%)	7 (2.9%)
F46 Not remembering	0 (0.0%)	2 (0.9%)	3 (1.3%)
F47 Not sure	3 (1.8%)	0 (0.0%)	1 (0.4%)
F48 Not willing to try	3 (1.8%)	1 (0.4%)	4 (1.7%)
F49 Remembering	6 (3.7%)	5 (2.9%)	5 (2.1%)
F50 Thinking	12 (7.4%)	10 (4.4%)	17 (7.0%)
F51 Trying	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	43 (26.9%)	42 (18.4%)	52 (21.6%)

Table 52 provides the data of L2 students' use of specific Non Prior Knowledge Comments on Strategies while answering the three types of questions on the Insects text.

TABLE 52
L2 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

	TE	L2 Insects TI	SI
F39 Getting the answer	13 (7.1%)	14 (4.7%)	10 (3.9%)
F40 Guessing	0 (0.0%)	0 (0.0%)	1 (0.4%)
F41 Knowing	6 (3.2%)	2 (0.7%)	1 (0.4%)
F43 Not able to find the answer	0 (0.0%)	2 (0.7%)	1 (0.4%)
F44 Not able to think	0 (0.0%)	0 (0.0%)	0 (0.0%)
F45 Not knowing	1 (0.6%)	3 (1.0%)	4 (1.6%)
F46 Not remembering	0 (0.0%)	0 (0.0%)	1 (0.4%)
F47 Not sure	3 (1.6%)	2 (0.7%)	0 (0.0%)
F48 Not willing to try	2 (1.1%)	2 (0.7%)	4 (1.6%)
F49 Remembering	1 (0.6%)	0 (0.0%)	0 (0.0%)
F50 Thinking	7 (3.8%)	10 (3.4%)	20 (7.8%)
F51 Trying	8 (4.4%)	2 (0.7%)	4 (1.6%)
Total	41 (22.4%)	37 (12.6%)	46 (18.1%)

Fig. 35 is based on the data in Tables 51 and 52. Both language groups seemed to comment more frequently about getting the answer (F39) and not being sure (F47) in the Textually Explicit questions than in the other two types of questions on the Insects text.

L1 students and L2 students, to some extent, apparently commented about remembering (F49) more often in the Textually Explicit questions than they did in the other two types of questions on Insects.

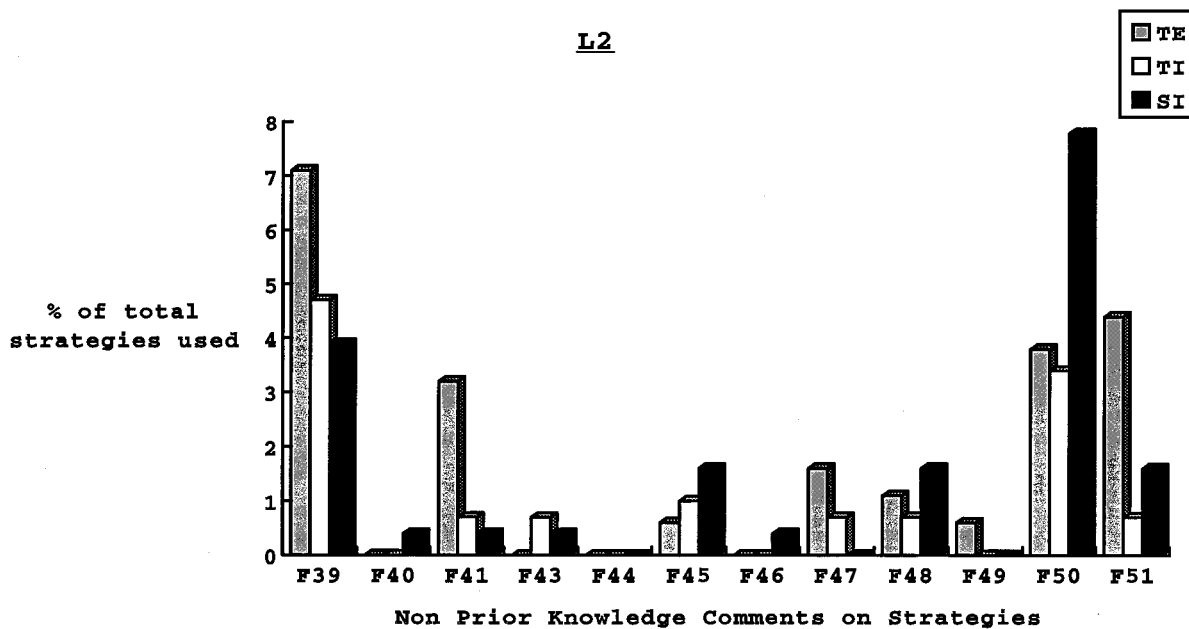
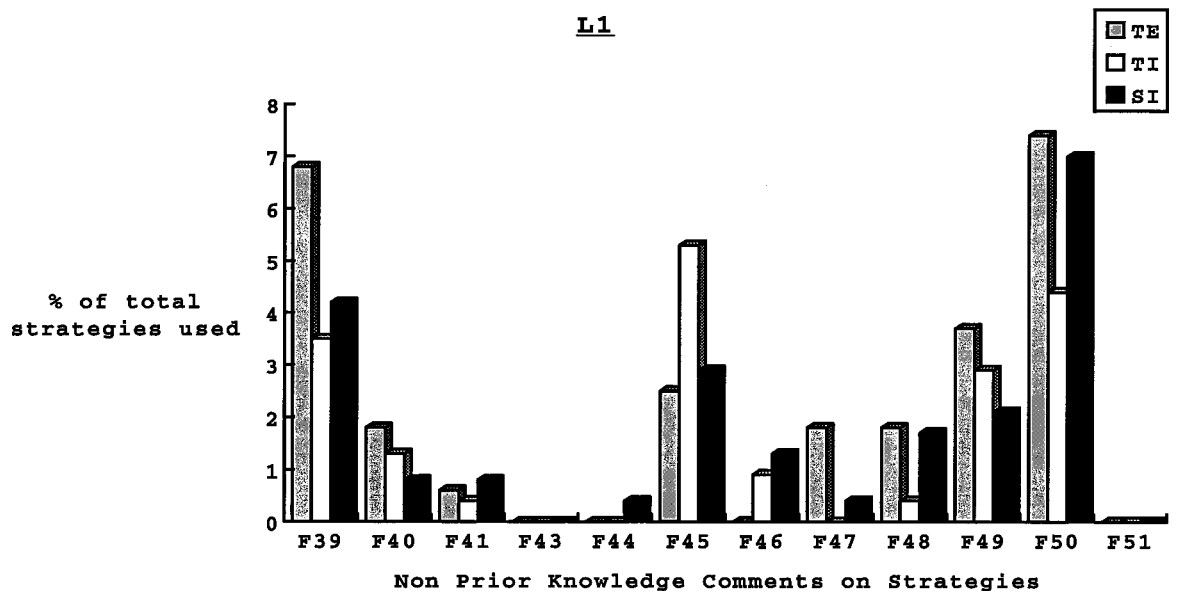
L2 students, but not L1 students, seemed to make more comments about trying (F51) in the Textually Explicit questions than they did in the other two types of questions on the Insects text.

L1 students differed from L2 students in that they appeared to make more comments about not knowing (F45) in the Textually Implicit questions on Insects. On the other hand, L2 student seemed to comment more frequently about not knowing (F45) in the Scriptally Implicit questions on Insects.

L1 students appeared to comment more often about thinking (F50) in the Textually Explicit questions on Insects. However, L2 students apparently made more frequent comments about thinking (F50) in the Scriptally Implicit questions on Insects.

FIG. 35

USE OF NON PRIOR KNOWLEDGE COMMENTS ON STRATEGIES WHILE
ANSWERING TEXTUALLY EXPLICIT (TE), TEXTUALLY IMPLICIT
(TI), AND SCRIPTALLY IMPLICIT (SI) QUESTIONS ON THE
INSECTS TEXT



Figures 34 and 35 do not show consistent patterns of differences between the three types of questions and the use of specific Non Prior Knowledge Comments on Strategies. The only consistent difference lay in L1 and L2 students' appearing to comment more frequently about remembering (F49) in the Textually Explicit questions than they did in the other two types of question on both texts. The researcher interpreted this finding to mean that both language groups seemed to feel that they were using their memory in their answers to Textually Explicit questions on both texts.

Table 53 provides the frequency counts of L1 students' use of the specific Non Prior Knowledge Comments on Sources of Answers while replying to the three types of questions on the Whales text.

TABLE 53
L1 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L1 Whales TI	SI
G52 Answer	0 (0.0%)	1 (0.6%)	0 (0.0%)
G53 Books	4 (3.0%)	5 (2.9%)	3 (1.2%)
G54 Experience	1 (0.8%)	0 (0.0%)	3 (1.2%)
G55 Films	1 (0.8%)	1 (0.6%)	3 (1.2%)
G56 Hearing	0 (0.0%)	0 (0.0%)	1 (0.4%)
G57 Learned from school	1 (0.8%)	0 (0.0%)	1 (0.4%)
G58 Mind	1 (0.8%)	0 (0.0%)	1 (0.4%)
G59 Myself	0 (0.0%)	2 (1.2%)	3 (1.2%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	0 (0.0%)
G64 People	3 (2.3%)	0 (0.0%)	0 (0.0%)
G65 Previous question	1 (0.8%)	0 (0.0%)	1 (0.4%)
G66 Questions	5 (3.9%)	4 (2.3%)	2 (0.8%)
G67 Quoting as proof	0 (0.0%)	4 (2.3%)	6 (2.4%)

TABLE 53 (Continued)

	TE	L1 Whales TI	SI
G68 Reading	2 (1.5%)	4 (2.3%)	3 (1.2%)
G69 Re-reading	0 (0.0%)	5 (2.9%)	0 (0.0%)
G70 Seeing	2 (1.5%)	0 (0.0%)	1 (0.4%)
G71 Television	1 (0.8%)	0 (0.0%)	0 (0.0%)
G72 Text	6 (4.6%)	5 (2.9%)	0 (0.0%)
G73 Text (paragraph format)	4 (3.0%)	2 (1.2%)	0 (0.0%)
G74 Text (sentence format)	12 (9.2)	11 (6.4%)	1 (0.4%)
Total	44 (33.9%)	44 (25.6%)	29 (11.6%)

Tables 54 presents L2 students' use of specific Non Prior Knowledge Comments on Sources of Answers while replying to the three types of questions on the Whales text.

TABLE 54
L2 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE WHALES TEXT
(Percentages in parentheses)

	TE	L2 Whales TI	SI
G52 Answer	0 (0.0%)	0 (0.0%)	0 (0.0%)
G53 Books	4 (2.8%)	7 (3.7%)	8 (3.2%)
G54 Experience	2 (1.4%)	0 (0.0%)	5 (1.9%)
G55 Films	0 (0.0%)	0 (0.0%)	0 (0.0%)
G56 Hearing	0 (0.0%)	0 (0.0%)	0 (0.0%)
G57 Learned from school	4 (2.8%)	1 (0.6%)	1 (0.4%)
G58 Mind	2 (1.4%)	1 (0.6%)	0 (0.0%)
G59 Myself	0 (0.0%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	0 (0.0%)
G64 People	0 (0.0%)	0 (0.0%)	0 (0.0%)
G65 Previous question	0 (0.0%)	0 (0.0%)	0 (0.0%)
G66 Questions	1 (0.7%)	0 (0.0%)	0 (0.0%)
G67 Quoting as proof	0 (0.0%)	1 (0.6%)	0 (0.0%)

TABLE 54 (Continued)

	TE	L2 Whales TI	SI
G68 Reading	3 (2.0%)	1 (0.6%)	1 (0.4%)
G69 Re-reading	2 (1.4%)	1 (0.6%)	0 (0.0%)
G70 Seeing	0 (0.0%)	0 (0.0%)	0 (0.0%)
G71 Television	0 (0.0%)	1 (0.6%)	1 (0.4%)
G72 Text	0 (0.0%)	4 (2.1%)	1 (0.4%)
G73 Text (paragraph format)	6 (4.1%)	6 (3.2%)	1 (0.4%)
G74 Text (sentence format)	4 (2.8)	4 (2.1%)	1 (0.4%)
Total	28 (19.4%)	27 (14.7%)	19 (7.5%)

Fig. 36 illustrates in graph form the information in Tables 53 and 54. Some cells were collapsed so that the data could be presented in one graph. Comments which were similar in nature were grouped together. These were:

GB Books	G53 books
	G68 reading
GF Films	G55 films
	G71 television
GL Learn	G57 learned from school
	G64 people
GM Myself	G58 mind
	G59 myself
GS Senses	G56 hearing
	G70 seeing
GT Text	G67 quoting as proof
	G72 text
	G73 text (paragraph format)
	G74 text (sentence format)

Both L1 and L2 students apparently commented more frequently that what they had learned (GL--learned from school (G57) and people (G64)) was the source of their answers to Textually Explicit questions than they did in the other two types of question on the Whales text.

There were apparent differences between the two language groups. L1 students seemed to comment more

frequently about the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)) as their source of answers to Textually Explicit questions than they did in the other two types of questions on the Whales text. On the other hand, L2 students appeared to make more frequent comments about the text (GT) in the Textually Implicit questions on the Whales text.

L1 students apparently commented more frequently about books (GB--books (G53) and reading (G68)) as their source of answers to Textually Implicit questions than they did in the other two types of questions on the Whales text. However, L2 students seemed to make more frequent comments about books (GB) in the Textually Explicit questions on the Whales text.

L1 students appeared to make more frequent comments about re-reading (G69) in the Textually Implicit questions on Whales. In contrast, L2 students seemed to comment more frequently about re-reading (G69) in the Textually Explicit questions on Whales.

L1 students, but not L2 students, apparently commented more often about questions (G66) in the Textually Explicit questions than in the other two types of questions on Whales.

L2 students, but not L1 students, seemed to make more comments about myself (GM--mind (G58) and myself (G59)) in the Textually Explicit questions than in the other two types of questions on Whales.

FIG. 36

USE OF NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF
ANSWERS WHILE REPLYING TO TEXTUALLY EXPLICIT (TE),
TEXTUALLY IMPLICIT (TI) AND SCRIPTALLY IMPLICIT
(SI) QUESTIONS ON THE WHALES TEXT

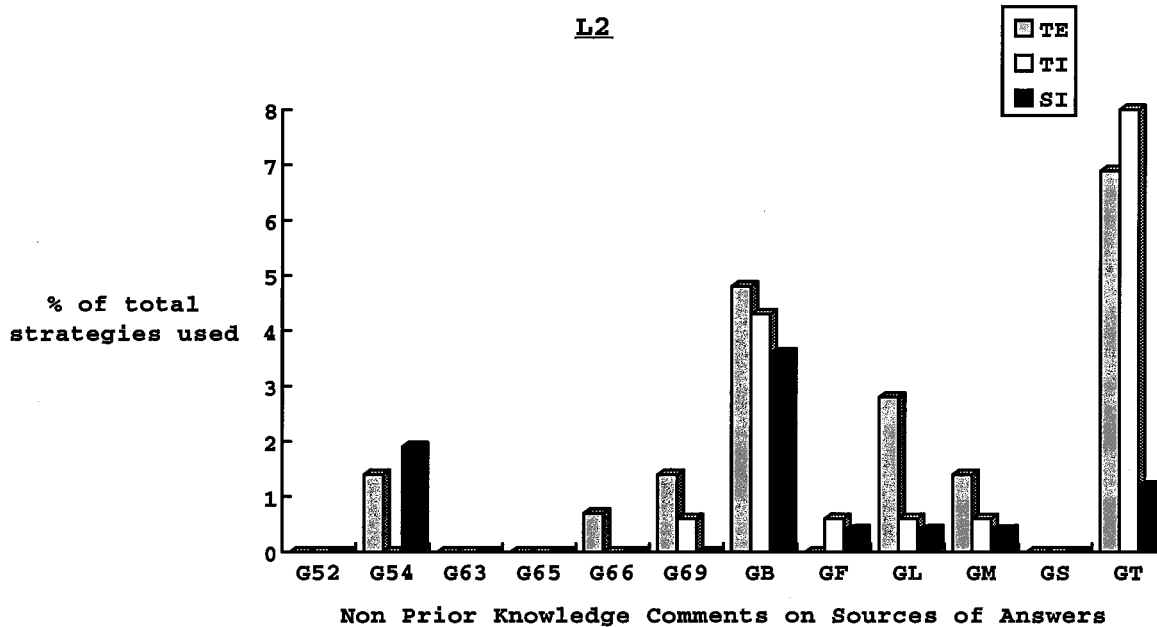
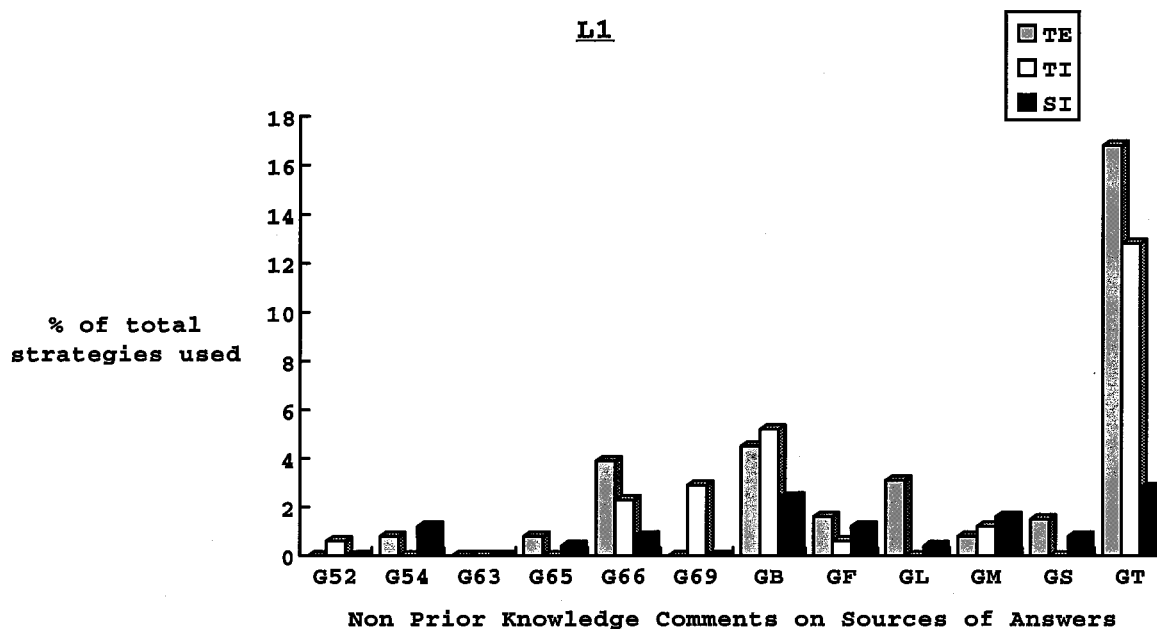


Table 55 gives the data of L1 students' use of specific Non Prior Knowledge Comments on Sources of Answers while replying to the three types of questions on the Insects text.

TABLE 55
 L1 READERS' USE OF
 NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
 WHILE REPLYING TO TEXTUALLY EXPLICIT (TE), TEXTUALLY
 IMPLICIT (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
 ON THE INSECTS TEXT
 (Percentages in parentheses)

	TE	L1 Insects TI	SI
G52 Answer	1 (0.6%)	0 (0.0%)	0 (0.0%)
G53 Books	4 (2.5%)	4 (1.8%)	4 (1.7%)
G54 Experience	1 (0.6%)	0 (0.0%)	0 (0.0%)
G55 Films	1 (0.6%)	2 (0.9%)	0 (0.0%)
G56 Hearing	0 (0.0%)	0 (0.0%)	0 (0.0%)
G57 Learned from school	3 (1.8%)	2 (0.9%)	2 (0.8%)
G58 Mind	0 (0.0%)	1 (0.4%)	1 (0.4%)
G59 Myself	1 (0.6%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	0 (0.0%)	0 (0.0%)	1 (0.4%)
G64 People	1 (0.6%)	3 (1.3%)	2 (0.8%)
G65 Previous question	0 (0.0%)	1 (0.4%)	0 (0.0%)
G66 Questions	1 (0.6%)	1 (0.4%)	0 (0.0%)
G67 Quoting as proof	2 (1.2%)	3 (1.3%)	0 (0.0%)

TABLE 55 (Continued)

	TE	L1 Insects TI	SI
G68 Reading	1 (0.6%)	0 (0.0%)	0 (0.0%)
G69 Re-reading	1 (0.6%)	0 (0.0%)	0 (0.0%)
G70 Seeing	6 (3.7%)	2 (0.9%)	2 (0.8%)
G71 Television	0 (0.0%)	2 (0.9%)	3 (1.3%)
G72 Text	4 (2.5%)	6 (2.7%)	1 (0.4%)
G73 Text (paragraph format)	5 (3.1%)	1 (0.4%)	1 (0.4%)
G74 Text (sentence format)	2 (1.2%)	4 (1.8%)	2 (0.8%)
Total	34 (20.8%)	32 (14.1%)	19 (7.8%)

Tables 56 presents L2 students' use of specific Non Prior Knowledge Comments on Sources of Answers while replying to the three types of questions on the Insects text.

TABLE 56
L2 READERS' USE OF
NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF ANSWERS
WHILE REPLYING TO TEXTUALLY EXPLICIT (TE), TEXTUALLY
IMPLICIT (TI) AND SCRIPTALLY IMPLICIT (SI) QUESTIONS
ON THE INSECTS TEXT
(Percentages in parentheses)

	TE	L2 Insects TI	SI
G52 Answer	0 (0.0%)	0 (0.0%)	0 (0.0%)
G53 Books	7 (3.8%)	4 (1.4%)	5 (1.9%)
G54 Experience	0 (0.0%)	0 (0.0%)	0 (0.0%)
G55 Films	0 (0.0%)	0 (0.0%)	1 (0.4%)
G56 Hearing	0 (0.0%)	1 (0.3%)	0 (0.0%)
G57 Learned from school	2 (1.1%)	4 (1.4%)	3 (1.2%)
G58 Mind	1 (0.6%)	0 (0.0%)	2 (0.8%)
G59 Myself	0 (0.0%)	0 (0.0%)	0 (0.0%)
G63 Not having seen	1 (0.6%)	1 (0.3%)	1 (0.4%)
G64 People	0 (0.0%)	1 (0.3%)	2 (0.8%)
G65 Previous question	0 (0.0%)	0 (0.0%)	0 (0.0%)
G66 Questions	1 (0.6%)	1 (0.3%)	0 (0.0%)
G67 Quoting as proof	0 (0.0%)	0 (0.0%)	0 (0.0%)

TABLE 56 (Continued)

	TE	L2 Insects TI	SI
G68 Reading	0 (0.0%)	0 (0.0%)	0 (0.0%)
G69 Re-reading	4 (2.1%)	7 (2.4%)	1 (0.4%)
G70 Seeing	0 (0.0%)	6 (2.1%)	2 (0.8%)
G71 Television	2 (1.1%)	0 (0.0%)	5 (1.9%)
G72 Text	4 (2.1%)	3 (1.0%)	2 (0.8%)
G73 Text (paragraph format)	7 (3.8%)	6 (2.1%)	0 (0.0%)
G74 Text (sentence format)	3 (1.6%)	2 (0.7%)	1 (0.4%)
Total	32 (17.4%)	36 (12.3%)	25 (9.8%)

Fig. 37 illustrates graphically the data in Tables 55 and 56. As in Fig. 36, comments that were similar in nature were grouped together so that the data could be presented in one graph.

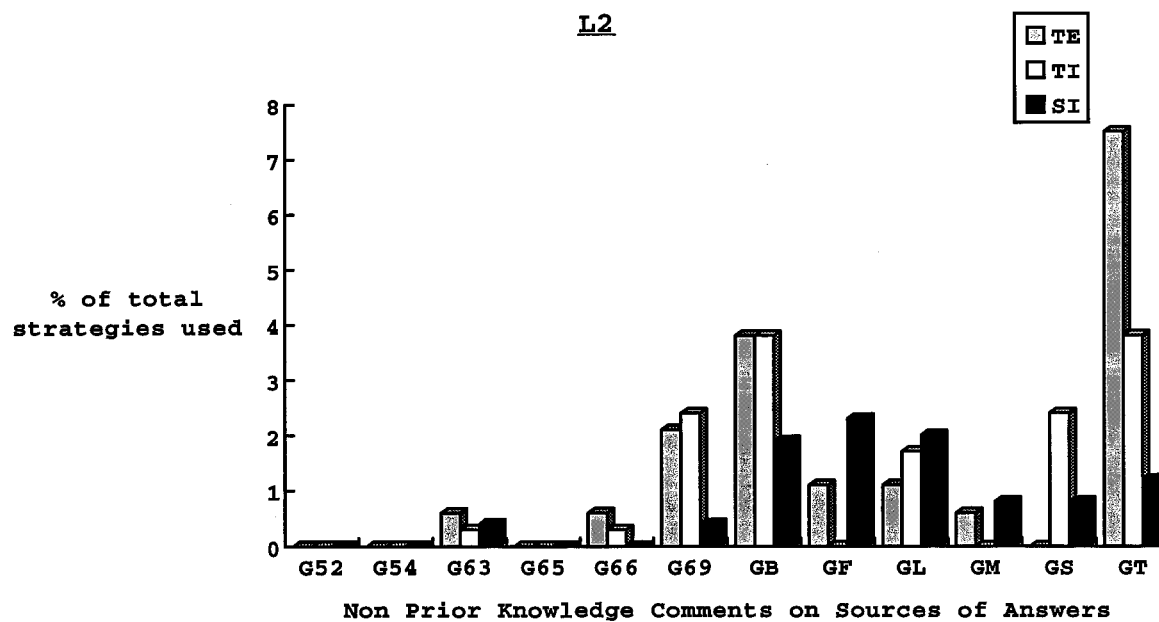
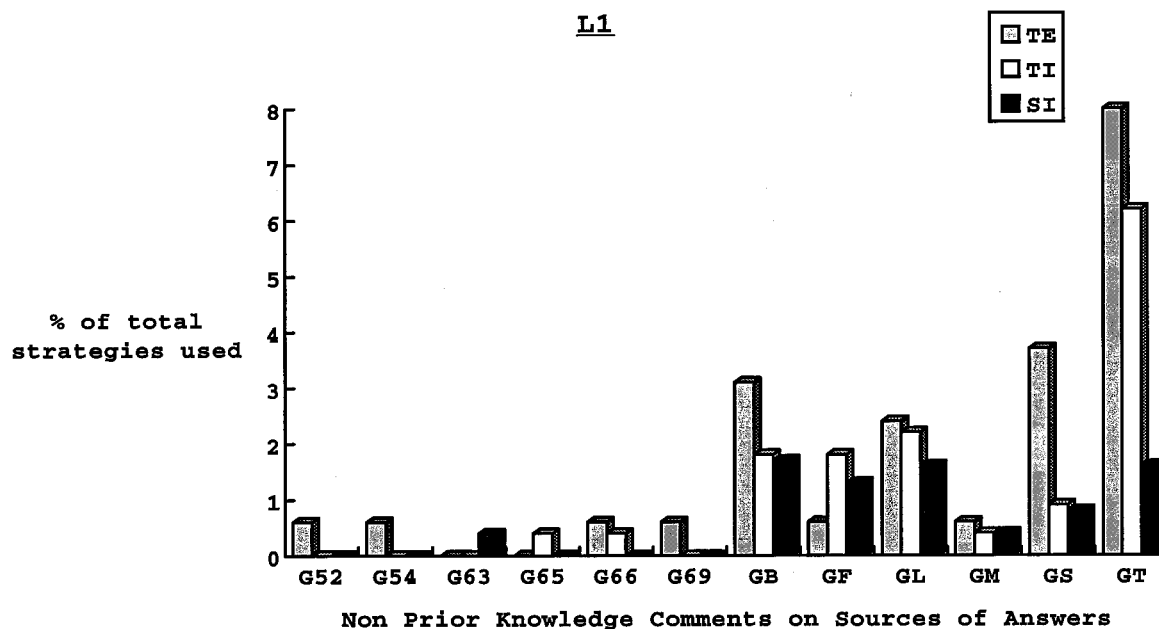
Both L1 and L2 students apparently commented more frequently about the text (GT--quoting as proof (G67), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)) as their source of answers to the Textually Explicit questions than in the other two types of question on the Insects text. This was the case with L1 students in the Textually Explicit questions on the Whales text. L2 students appeared to comment more often about the text (GT) in the Textually Implicit questions on Whales.

There were apparent differences between the two language groups. L1, but not L2 students, seemed to comment more often about books (GB--books (G53) and reading (G68)) and about the senses (GS--hearing (G56) and seeing (G70)) as their source of answers to Textually Explicit questions on the Insects text. However, L2 students appeared to comment more frequently about the senses (GS) in the Textually Implicit questions on the Insects text.

L1 students apparently made more frequent comments about films (GF--films (G55) and television (G71)) as their source of answers to Textually Implicit questions on the Insects text. In contrast, L2 students seemed to comment more frequently about films (GF) in the Scriptally Implicit questions on Insects.

FIG. 37

USE OF NON PRIOR KNOWLEDGE COMMENTS ON SOURCES OF
ANSWERS WHILE REPLYING TO TEXTUALLY EXPLICIT (TE),
TEXTUALLY IMPLICIT (TI), AND SCRIPTALLY IMPLICIT
(SI) QUESTIONS ON THE INSECTS TEXT



Figures 36 and 37 show that L1 students appeared to comment more frequently about the text (GT--quoting as proof (G7), text (G72), text (paragraph format) (G73) and text (sentence format) (G74)) as their source of answers to the Textually Explicit questions than in the other two types of question on both texts. This was the case with L2 students when they answered Textually Explicit questions on the Insects text, but not when they answered Textually Explicit questions on the Whales text.

Answers to Textually Explicit questions could be found in the text and so it is not surprising that L1 students, and to some extent L2 students, appeared to comment more frequently about the text (GT) when they answered Textually Explicit questions.

To summarize the findings of Question 4 (d):

Both L1 and L2 students seemed to use the quoting (A2) strategy more frequently in the Textually Explicit questions than they did in the other two types of questions on both texts.

Both language groups apparently used the making inferences (B13) strategy more often in the Textually Implicit than in the other two types of questions on both texts.

They appeared to make more frequent use of the reasoning (B16) strategy in the Scriptally Implicit

questions than they did in the other two types of questions on both texts.

They seemed to comment about remembering (F49) more frequently in the Textually Explicit questions than in the other two types of questions on both texts.

Both language groups apparently commented more frequently about the text (GT) as their source of answers to the Textually Explicit questions than in the other two types of question on the Insects text. L1 students, but not L1 students, also apparently made more frequent comments about the text (GT) in the Textually Explicit questions on the Whales text.

Question 4 (e) L1 and L2 readers' ratings of Question-answering Non Prior Knowledge strategy statements.

When readers had answered all questions on a text, the researcher administered the Question-Answering Rating Scale which appears as Appendix 3.

Readers' ratings received a score ranging from 1 when they disagreed strongly to 5 when they agreed strongly. Table 56 provides the mean scores for the ratings done by L1 and L2 students. A mean of 3.5 to 5.0 would indicate that the readers in that group agreed moderately or strongly with the statement being rated.

TABLE 57
MEAN RATINGS OF
NON PRIOR KNOWLEDGE QUESTION-ANSWERING STRATEGY STATEMENTS
 (Standard deviations in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
A. I understood the meaning of the questions.	3.70 (0.78)	4.10 (0.70)	3.80 (0.74)	4.10 (0.94)
C. I got the answers by remembering what I had just read.	4.20 (0.97)	4.20 (0.60)	4.10 (0.83)	4.00 (0.89)
E. The answers were from the sentences I just read.	4.20 (0.60)	3.00 (1.09)	3.90 (0.83)	3.80 (0.87)
F. I had to think a lot to answer some questions.	3.50 (0.80)	3.90 (1.13)	3.70 (0.78)	3.90 (1.22)
G. I had to use two sentences to answer some questions.	3.10 (1.04)	2.30 (1.10)	2.70 (1.10)	2.80 (1.32)
H. I was sure about my answers.	3.30 (1.05)	3.50 (0.80)	3.30 (0.90)	3.50 (1.11)
J. The answers just came to my mind.	3.20 (1.07)	3.80 (0.87)	3.10 (1.30)	3.40 (1.20)
K. I had to read the passage again to answer some questions.	2.40 (1.11)	3.00 (1.18)	2.80 (0.97)	2.90 (1.30)
I. I guessed some answers.	3.70 (0.78)	3.30 (1.26)	3.30 (1.18)	3.30 (1.26)
N. I do not know how I got the answers.	3.20 (0.97)	2.80 (1.16)	2.80 (0.74)	2.40 (0.91)

Non-parametric Kruskal-Wallis tests were performed to determine if there were any significant differences between L1 and L2 students in their scores from the rating of each Non Prior Knowledge strategy statement about question-answering strategies. No significant differences were found. Thus, data from the readers' rating of statements about strategies did not reveal the apparent differences between the groups of readers that were evident from the Think-Out-Loud (Questions) protocols.

There is, however, some evidence from the data based in the Strategy Rating Scale that reflects the question-answering model of Goldman and Duran (1988), and the findings from the Think-Out-Loud (Questions) protocols.

L1 and L2 students received a mean score of 4.2 when they rated statement (C), "I got the answers by remembering what I had just read" after having answered questions on the Whales text. The mean scores for the Insects questions were similar. They were 4.1 for L1 and 4.0 for L2 students. The readers' positive rating of this statement is in keeping with the model of question-answering proposed by Goldman and Duran (1988), who state that readers search their memory for answers to questions.

Both language groups seemed to comment more frequently about remembering (F49) in the Textually Explicit questions on both texts. According to the Goldman and Duran model of question-answering, it is not surprising that they would refer to their memory when they answered Textually

Explicit questions, for the answers to Textually Explicit questions could be found in the text.

In the Think-Out-Loud (Text) protocols L2 students seemed to be less inclined than L1 students to remark on their lack of knowledge. This pattern of not admitting their lack of knowledge is seen again in the mean scores of 4.1 for L2 when they agreed with statement (A), "I understood the meaning of the questions". There was evidence that one L2 student did not fully understand a question. Student #25, an L2 student, had a score of 5 when he rated statement (A), "I understood the meaning of the questions" after he answered questions on the Insects text yet he did not seem to understand Question 4, a Textually Implicit Question, "How is the baby bee different from the adult bee?" for he answered, "I can tell you about the ladybug".

L1 students' mean scores for Statement (A) were lower in agreement, at 3.70 for the Whales text and 3.80 for the Insects text. While this difference is not statistically significant, it does support the trend of L2's not commenting on their lack of knowledge and seems to suggest a greater confidence by L1 students in admitting some insecurity.

L2 students seemed reluctant to acknowledge any uncertainty. Their mean score for statement (H), "I was sure about my answers" was 3.50 for both texts. L1 students were less certain, with a score of 3.30 for both texts.

Question 4 (f) Results of correlational tests between readers' scores on Textually Explicit, Textually Implicit and Scriptally Implicit questions and their scores on rating Non Prior Knowledge strategy statements

Non-parametric Spearman correlational tests were performed to study the possibility of significant correlations between the readers' scores on the three types of questions and their scores while rating statements about Non Prior Knowledge strategies.

Only two results reached the .001 level of significance. One significant result was the correlation (see Table 58) between L1's scores on the Textually Implicit questions on the Insects text and their scores on rating reading strategy statement (E), "I read some sentences again that I didn't understand" after they had read the text ($r_s = .8777$, $N=10$, $p=.001$). This result is seen as being a logical response, as the answer to Textually Implicit Questions can be inferred from the text and re-reading the text could perhaps have made it easier for L1 students to obtain an answer. L1 students did seem, then, conscious of their reading strategies when answering Textually Implicit questions.

TABLE 58

LI STUDENTS' SCORES ON TEXTUALLY IMPLICIT QUESTIONS
ON THE INSECTS TEXT AND
THEIR RATINGS OF READING STRATEGY STATEMENT (E)
ABOUT RE-READING SENTENCES THAT WERE NOT UNDERSTOOD

Student	Insects Ratings of Reading Strategy Statement (E) (Score out of 5)	Insects Textually Implicit Questions (Score out of 6)
1	3	4
5	5	6
6	2	2
7	2	2
8	3	4
9	3	4
15	3	3
16	4	4
18	4	5
21	4	4

A second significant result to do with the three types of questions was the correlation (see Table 59) between L2's scores on the Scriptally Implicit questions on the Whales text and their rating of the Question-Answering strategy statement (C), "I got the answer by remembering what I had just read" ($r_s = .8682$, $N = 10$, $p = .001$). This is a surprising and quite unexpected result because the answers to Scriptally Implicit questions are not in the text and would not have been found by remembering what had been read. Apparently the L2 students found it difficult to differentiate between Prior Knowledge and material just read.

TABLE 59

L2 STUDENTS' SCORES ON SCRIPTALLY IMPLICIT QUESTIONS ON
THE WHALES TEXT AND
THEIR RATINGS OF QUESTION-ANSWERING STRATEGY STATEMENT (C)
ABOUT REMEMBERING WHAT HAD BEEN READ

Student	Whales Ratings of Question-Answering Strategy Statement (C) (Score out of 5)	Whales Scriptally Implicit Questions (Score out of 9)
2	5	9
3	5	8
10	3	4
13	4	6
14	4	5
22	4	4
23	4	5
25	5	8
26	4	6
27	4	5

Summary of Findings on Question Four

This section centred around the use of the Non Prior Knowledge Categories and strategies in Question-Answering, and described the findings from the analyses of readers' Think-Out-Loud (Questions) protocols while answering the three types of questions, their ratings of statements about answering questions, and the results of correlational tests between readers' scores on the three types of questions and their scores on rating statements about strategies.

When readers answered the three types of questions, they used all seven categories of Non Prior Knowledge strategies: Explanation, Interpretation, Evaluation, Monitoring of Understanding, Attempts to Answer, Comments on Strategies and Comments on Sources of Answers.

There were apparent differences between the language groups in the frequency of use of the categories of strategies.

L1 students seemed to use the Explanation category more often than L2 students did when they answered Textually Explicit questions on both texts. L2 students appeared to use this same category more frequently than L1 students did in the Textually Implicit questions on both texts.

L1 students apparently used the category of Comments on Sources of Answers more frequently than L2 students did in the Textually Explicit and Textually Implicit questions on both texts. They seemed to use the categories of Non Prior Knowledge Interpretation and Comments on Strategies more often than L2 students did in the Textually Implicit and Scriptally Implicit questions on the Insects text.

There were apparent differences between the three types of questions and the use of Non Prior Knowledge categories of strategies. These differences were predictable according to the definition of the questions.

Both L1 and L2 students seemed to use the categories of Explanation and Comments on Sources of Answers more

frequently in the Textually Explicit questions than in the other two types of questions on both texts. Answers to Textually Explicit questions could be found in the text and readers apparently used the Explanation and Comments on Sources of Answers categories more often in the Textually Explicit questions on both texts.

They seemed to use the Non Prior Knowledge Interpretation category more frequently in the Textually Implicit questions than in the other two types of questions on both texts. Textually Implicit questions would invite use of the Non Prior Knowledge Interpretation strategies as answers to Textually Implicit questions could be inferred from the text and both language groups apparently made more use of Non Prior Knowledge Interpretation strategies in the Textually Implicit questions on both texts.

There were apparent differences between the two language groups in their use of specific Non Prior Knowledge strategies.

L1 students seemed to use the quoting strategy more frequently than L2 did in the Textually Explicit questions on both texts.

L2 students appeared to use the paraphrasing strategy more often than L1 students did in the Textually Implicit question on both texts.

There was no consistent pattern of differences between L1 and L2 students in their use of specific Non Prior Knowledge Interpretation strategies.

L1 students seemed to comment more frequently than L2 students did about remembering in Textually Explicit and Textually Implicit questions on both texts. They apparently commented more often about not knowing and not remembering in Textually Implicit and Scriptally Implicit questions on both texts.

L2 students seemed to make more frequent comments than L1 students did about knowing in the Textually Explicit and Textually Implicit questions on both texts.

L1 students apparently made more comments than L2 students did about the text as their source of answers to all three types of questions on both texts.

L2 students appeared to comment more often than L1 students did that re-reading was the source of their answers to Textually Explicit questions on both texts. They apparently remarked that books were the sources of their answers to Scriptally Implicit questions on both texts.

There were apparent differences between the three types of questions and use of specific Non Prior Knowledge strategies.

Both language groups seemed to use the quoting strategy more often in the Textually Explicit questions than in the other two types of questions on both texts.

L1 and L2 students apparently used the making inferences strategy more frequently in the Textually Implicit questions than in the other two types of questions on both texts.

They seemed to use the reasoning strategy more often in the Scriptally Implicit questions than in the other two types of questions on both texts.

L1 and L2 students apparently commented more frequently about remembering in the Textually Explicit questions than in the other two types of questions on both texts.

There was no consistent pattern of differences between the three types of questions and the students' use of specific Comments on Sources of Answers.

The readers' ratings of the statements about strategies corroborate the findings from the Think-Out-Loud (Questions) protocols. They rated positively question-answering strategy statement (C), "I got the answers by remembering what I had just read" indicating that they felt that remembering the text helped them answer the question. This is in harmony with the model of question-answering proposed by Goldman and Duran (1988) in which memory plays an important role in readers' search for answers.

The results of the correlational tests between the readers' scores on the three types of questions and their scores on rating Non Prior Knowledge strategy statements are partly what would be expected. One result states that re-reading texts aided L1 students in answering Textually Implicit questions on the Insects text, a finding that is a not unlikely one.

The other result, which is unexpected, is the correlation between L2 students' scores to answers on Scriptally Implicit questions on the Whales text and their ratings of the question-answering Non Prior Knowledge strategy statement (C), "I got the answer by remembering what I had just read". This is surprising, since the answer to this type of question would not be found in the text. It is not, however, inconsistent with the profile of these L2 students who were judged to be text-bound in their use of Prior Knowledge and Non Prior Knowledge strategies when they read the two texts. Their mind set may have been towards respect for the text and its information.

If a teacher were to describe L1 and L2 students' Think-Out-Loud (T-O-L) responses to text and to questions, what might that description be? The researcher attempts now to describe L1 and L2 students' T-O-L responses to text, based on the data obtained from this exploratory case study.

- (a) L1 students might use their Prior Knowledge to interpret the text. They may give examples and visualize, adding new ideas to the text. Perhaps they might judge the truth of the statements in the text, and state that they agree or disagree with these statements. They may make comments on their knowledge or lack of knowledge of the text.
- (b) L2 students may perhaps try to explain the text. They might focus on the text, and use their Prior Knowledge

to add descriptive details to the text without adding a new idea to it. They might make inferences or linguistic connections with previous sentences. They may turn the sentences in the text into questions. They probably would not comment on their knowledge or lack of knowledge of the text.

The apparent differences between L1 and L2 students' T-O-L responses to questions are consistent with their T-O-L responses to text.

- (a) L1 students might use the words of the text while answering Textually Explicit questions. They may comment on not knowing the answers to Textually Explicit and Scriptally Implicit questions. They might remark that the text is the source of their answers to the three types of questions.
- (b) L2 students may add descriptive details to the text while answering all three types of questions. They might paraphrase the words of the text in their answers to Textually Implicit questions. They may express their misconceptions while answering Textually Explicit and Textually Implicit questions. They might comment about getting the answer to questions, and they may remark that they are thinking and trying to answer Scriptally Implicit questions. They may state that books are the sources of their answers to Scriptally Implicit questions.

There are thus decided differences in the way these two groups processed and answered the texts in this study.

The three types of questions did have an apparent effect on the students' use of strategies.

- (a) While answering Textually Explicit questions L1 and L2 students might use the Explanation category of strategies, making use of the words in the text.
- (b) While answering Textually Implicit questions L1 and L2 students might interpret the text, using the making inferences strategy.
- (c) While answering Scriptally Implicit questions, L1 and L2 students might use the reasoning strategy.

Chapter V following will present a summary of the findings, conclusions, discussions and recommendations of the study.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Chapter V includes a summary of findings, conclusions, discussion, recommendations for further research and implications for teaching strategies.

Summary of Findings

Classification One: Prior Knowledge Strategies

All Classification One questions were designed to elicit answers to the research questions about the role of Prior Knowledge in readers' responses to two short texts and questions on the texts.

Question One focussed on the role of Prior Knowledge in readers' response to the two short texts.

Question 1(a) Differences between L1 and L2 students in their use of Prior Knowledge strategies while reading two texts.

Data from readers' Think-Out-Loud (Text) protocols indicated that both L1 and L2 readers did use their Prior Knowledge while reading texts.

L1 students seemed to use the giving examples and visualizing strategies more frequently than L2 students did in both texts..

L2 students appeared to use the elaborating and providing facts strategies more often than L1 students while reading the Whales text.

Question 1 (b) L1 and L2 readers' judgments about their use of Prior Knowledge strategies while reading texts.

L1 and L2 students did not give significantly different ratings to statements about their use of Prior Knowledge strategies while reading.

In fact, mean rating scores showed clear similarity. Both L1 and L2 students believed they used their Prior Knowledge to help them understand both texts.

Question Two focussed on the role of Prior Knowledge in readers' answering of Textually Explicit, Textually Implicit and Scriptally Implicit questions.

Question 2 (a) Differences between L1 and L2 students in their use of Prior Knowledge strategies while answering each of the three types of questions on each text.

L1 and L2 readers' Think-Out-Loud (Questions) protocols indicated that all readers used their Prior Knowledge strategies while answering Textually Explicit, Textually Implicit and Scriptally Implicit questions.

L2 students apparently used the elaborating strategy more often than L1 students did in the Textually Explicit, Textually Implicit and Scriptally Implicit questions on both texts.

While answering Textually Explicit and Textually Implicit questions on both texts, L2 students appeared to make more frequent use of expressing misconceptions strategy than L1 students did.

Question 2 (b) Differences between the three types of questions of each text and the use of Prior Knowledge strategies by L1 and by L2 students.

Both language groups seemed to use the giving examples strategy more frequently in the Textually Explicit questions than they did in the other two types of questions on the Insects text.

L1 and L2 students appeared to use the elaborating strategy more frequently in the Textually Implicit questions on the Insects text and Scriptally Implicit questions on the Whales text.

They apparently made use of the stating probable ideas more often in the Scriptally Implicit questions than they did in the other two types of questions on the Whales text.

Question 2 (c) Readers' ratings of Question-Answering statements about use of Prior Knowledge.

There were no significant differences between L1 and L2 students' ratings of statements about their use of Prior Knowledge while answering questions.

There was a similarity in the mean scores of L1 and L2 students when they rated statement (B), "I knew the answers because they were about something my teacher or my mom or my dad had told me", after they had answered questions on the Whales text. They both agreed with statement (B).

There was no similarity in mean scores when L1 and L2 students rated the same statement (B) after they had answered questions on the Insects text.

Question 2 (d) Correlations between two types of Prior Knowledge assessments and scores on the three types of questions on each text.

Only one correlation approached significance and that was a negative correlation between L2 students' scores on the Prior Knowledge (Whales) Test and their scores on Textually Implicit questions on the Whales text.

Question 2 (e) Correlations between ratings on Prior Knowledge strategy statements and scores on the three types of questions on each text.

There was a negative correlation which approached significance between L2 students' scores on the Textually Implicit questions on Whales and their rating of Reading Strategy statement (P) that they knew a lot about Whales before they started reading the Whales text.

Classification Two: Non Prior Knowledge Strategies

All Classification Two questions were designed to elicit answers to the research questions about the role of Non Prior Knowledge strategies in readers' responses to two short texts and to questions on those texts.

Question Three focussed on the role of Non Prior Knowledge strategies in readers' response to the two texts.

Question 3 (a) Differences between L1 and L2 students in their use of the categories of Non Prior Knowledge strategies while reading the two texts.

Readers' Think-Out-Loud (Text) Protocols revealed that they used all seven categories of Non Prior Knowledge Strategies while reading texts. They used the categories of Explanation, Non Prior Knowledge Interpretation, Evaluation, Monitoring of Understanding, Attempts to Understand, Comments on Strategies and Comments on Sources of Knowledge.

The four categories which seemed to be most frequently used were Comments on Strategies, Interpretation of Text, Explanation, and Evaluation of Text.

Readers in this study appeared to use infrequently the categories of Monitoring of Understanding and Attempts to Understand.

L2 students apparently used the category of Explanation more often than L1 students did while reading the two texts.

L1 students seemed to use the Non Prior Knowledge Interpretation category more frequently than L2 students did on the Whales text. They appeared to make more Comments on Strategies than L2 students did on the Insects text.

Question 3 (b) Differences between L1 and L2 students in their use of specific Non Prior Knowledge strategies while reading the texts.

There were apparent differences between the two language groups in the use of specific strategies in the categories of Non Prior Knowledge strategies which were frequently used.

L2 students apparently made more frequent use of the specific Explanation strategies of paraphrasing and quoting than L1 students did on both texts.

L1 students seemed to use more frequently than L2 students did the Non Prior Knowledge Interpretation strategy of referring to previous sentences.

L2 students apparently employed more often than L1 students did the making inferences and reasoning strategies in the Non Prior Knowledge Interpretation category.

When both groups evaluated the texts, L1 students seemed to make more frequent use of the strategies of agreeing and judging the truth of statements, while L2 students appeared to use more often the questioning strategy.

In both texts L1 students apparently commented more frequently than L2 students did about knowing and not knowing information, while L2 students' comments about thinking seemed to exceed those made by L1 students.

Question 3 (c) Readers' rating of statements about Non Prior Knowledge reading strategies

There were no significant differences between L1 and L2 students' rating of statements about their use of Non Prior Knowledge strategies while reading.

There was, however, a marked similarity in the mean scores of L1 and L2 students after they read the Whales text and rated statements (O) and (L). Both groups agreed that while reading the Whales text they read some sentences more slowly (statement O) and that some difficult words became more clear as they read more sentences (statement L).

Both L1 and L2 students disagreed with statements (L) and (O) when they rated them for the Insects text.

Question Four focussed on the role of Non Prior Knowledge strategies when readers answered Textually Explicit, Textually Implicit and Scriptally Implicit questions.

Question 4 (a) Differences between L1 and L2 students in their use of Non Prior Knowledge categories of strategies while answering each of the three types of questions on each text.

L1 and L2 students used all seven categories of Non Prior Knowledge Strategies when they answered Textually Explicit, Textually Implicit and Scriptally Implicit questions. However, they seemed to use the Non Prior Knowledge strategies more often in the Textually Explicit than in the Scriptally Implicit questions.

L1 students apparently made more use than L2 students did of the categories of Explanation and Comments on Sources of Answers while answering Textually Explicit questions on both texts.

L1 students seemed to comment more often than L2 students did about the Sources of Answers in their answers to Textually Implicit questions on both texts .

L1 students apparently used the Non Prior Knowledge Interpretation category more frequently than L2 students did while answering Scriptally Implicit questions on both texts.

L2 students appeared to use the Explanation category more frequently than L1 students did in Textually Implicit questions on both texts.

Question 4 (b) Differences between the three types of questions on each text and use of the Non Prior Knowledge categories of strategies by L1 and by L2 students.

L1 and L2 students appeared to use more frequently the categories of Explanation and Comments on Sources of Answers while answering Textually Explicit questions on both texts than they did in the other two types of questions.

Both language groups seemed to make more frequent use of the Non Prior Knowledge Interpretation category in the Textually Implicit questions on both texts than they did in the other two types of questions.

Question 4 (c) Differences between L1 and L2 students in their use of specific Non Prior Knowledge strategies while answering each of the three types of questions on each text.

L1 students apparently used the quoting strategy in the Explanation category more often than L2 students in the Textually Explicit questions on both texts.

L2 students seemed to make more frequent use of the Explanation strategy of paraphrasing than L1 students did when they answered Textually Implicit questions on both texts.

There was no consistent pattern of differences between the two language groups in their use of specific Non Prior Knowledge Interpretation strategies. In fact, one

language group seemed to use the reasoning strategy more frequently while answering one type of question on a text, and the reverse would be the case with the other language group apparently using the reasoning strategy more often in the same type of question on the other text.

While answering Textually Explicit questions on both texts, L1 students appeared to comment more often about remembering, while L2 students apparently made more frequent comments about knowing.

In the Textually Implicit questions on both texts L1 students seemed to comment more frequently than L2 students did about not knowing, not remembering and remembering. L2 students apparently commented more often about getting the answer, and knowing in the Textually Implicit questions on both texts.

While answering Scriptally Implicit questions on both texts, L1 students appeared to make more frequent comments about not knowing and not remembering. L2 students seemed to comment more often about thinking and trying in Scriptally Implicit questions on both texts.

L1 students apparently commented more often than L2 students about the text as their Source of Answers to Textually Explicit, Textually Implicit and Scriptally Implicit questions on both texts.

L2 students seemed to make more frequent comments than L1 students did about re-reading in Textually Explicit

questions, and about books as their Sources of Answers to Scriptally Implicit questions on both texts.

Question 4 (d) Differences between the three types of questions on each text and use of specific Non Prior Knowledge strategies by L1 and by and L2 students.

When they answered Textually Explicit questions both language groups apparently used the quoting strategy, and commented about remembering more frequently than they did in the other two types of questions on both texts.

In the Textually Explicit questions on the Insects text L1 and L2 students seemed to comment more frequently about the text as their source of answers. This was also the case with L1 students, but not with L2 students, in the Textually Explicit questions on Whales. L2 students appeared to make more frequent comments about the text as the source of their answers to Textually Implicit questions on Whales.

In the Textually Implicit questions L1 and L2 students seemed to use the making inferences strategy more often than in the other two types of questions on both texts.

In the Scriptally Implicit questions both language groups apparently employed the reasoning strategy more frequently than they did in the other two types of questions on both texts.

Question 4 (e) L1 and L2 readers' ratings of Question-Answering Non Prior Knowledge strategy statements.

No significant differences were found between L1 and L2 students' ratings of Question-Answering statements about their use of Non Prior Knowledge strategies.

There was a similarity of mean scores in both L1 and L2 students' agreeing with statement (C), "I got the answers by remembering what I had just read" for questions on both texts.

Question 4 (f) Results of Correlational tests between readers' scores on Textually Explicit, Textually Implicit and Scriptally Implicit questions and their scores on rating Non Prior Knowledge strategy statements

Two correlations between readers' scores on the three types of questions and their ratings about statements were significant.

One was between L1 students' scores on Textually Implicit Questions on the Insects text and their rating of the Reading-Strategy statement (E), "I read some sentences again that I didn't understand".

The other was between L2 students' scores on Scriptally Implicit Questions on the Whales text and their rating of the Question-Answering Strategy statement (C), "I got the answers by remembering what I had just read".

Conclusions and Discussion

The study resulted in conclusions being drawn from the findings, methodology, materials and instruments, and the proposed Question-Answering model.

Conclusions and Discussion: Findings

One general conclusion was drawn from the study's extensive findings. This conclusion was:

L1 and L2 students seemed to use very different specific Prior Knowledge and specific Non Prior Knowledge strategies when they interacted with a text and when they answered questions on that text.

This conclusion speaks to the focus of the study: that is, the possible differences between L1 and L2 students as they interacted with texts and answered questions on text. This evidence is believed by the researcher to be the first such in-depth evidence obtained on primary L1 and L2 children.

The assumption has been made that if an L1 and L2 group score equally on a paper and pencil reading test, they can be considered to be using the same processes as they read. The study shows that this is not, in fact, correct.

When an "open-ended" procedure (such as T-O-L procedure) is used L2 children's responses seemed to be quite different from those of their L1 classmates.

The problem arises, of course, as to whether one should decide that one or other of the groups is using the "better" strategies. It might be assumed that L2 students, who are believed to be in the "weaker" language position, should be encouraged to react more like L1 students. However, this assumption may not be valid. It may be that L1 students should be encouraged to react more like L2 students. The study gives us no guidance on this problem. It simply supplies clear evidence of apparent differences when L1 and L2 students interacted with a text and answered questions on that text in a T-O-L procedure.

A number of more specific conclusions should also be discussed.

1. The Prior Knowledge strategies within the Interpretation category of strategies did play a role while both L1 and L2 students were reading the texts.

The L1 and L2 students were alike in that they used a number of specific Prior Knowledge strategies. They used such strategies as giving examples, providing facts and measurement, visualizing, elaborating, comparing, and generalizing strategies. These strategies were used as they

tried to "fill" in the "slots" of their script/schema in their attempt to understand the text. Their schema was acting as "ideational scaffolding for assimilating text information" as described by Anderson (1985, p. 376).

It may be noted here that readers in the study also used their Prior Knowledge in ways which were not described by Anderson (1985). Both L1 and L2 readers used the strategies of stating probable ideas, changing mind, and expressing misconceptions. Readers in the study did not always have correct information nor were they certain about their facts. They were, however, willing to express use of their Prior Knowledge even when what they knew was incorrect or uncertain.

The researcher also noted that the text did not change the misconceptions of some students who continued to use an inappropriate schema, a phenomenon which had been discussed by Rumelhart (1980). For example, Student #8 referred to "ivory" when he read Sentence 11 of Whales which referred to the many useful things made of blubber. Even though Sentence 12 of Whales was, "It is made into paint and soap", he held on to his misconception of "ivory" and said, "Some is made to paint and soap. And some is made to ivory". His schema/script was "incompatible" with the text, or the reverse could be true and the text was "incompatible" with his Prior Knowledge (Alvermann et al, 1985).

Readers in the study had not been told to summarize or re-tell information and this may have been the reason

they did not use their Prior Knowledge or schema for some of the functions described by Anderson (1985). They did not use it for "selective allocation of attention" (p. 376), for "editing and summarizing" (p. 377) and for "orderly searches of memory" (p. 376) or for "inferential reconstruction of information" (p. 377).

2. L1 and L2 readers seemed to differ in their use of specific Prior Knowledge strategies while they interacted with two texts.

L1 students appeared to use the giving examples and visualizing strategies frequently in both texts. L2 students apparently often used the elaborating, and providing facts strategies in the Whales text. L1 students were judged to be less "text-bound" than L2 students, who seemed to focus on the text and elaborated, or added descriptive details to the text. L1 students appeared to use the text as a springboard when they gave examples and visualized about the text.

3. There were similarities and differences in patterns of L1 and L2 readers' use of specific Prior Knowledge strategies for the three types of questions

Both L1 and L2 students seemed to use the specific Prior Knowledge strategies of stating probable ideas in the

Scriptally Implicit questions on Whales, and elaborating in the Textually Implicit questions on Insects and in the Scriptally Implicit questions on Whales. Apparently readers seemed to be uncertain about their ideas when they answered Scriptally Implicit questions on Whales, and they elaborated or added descriptive details to their answers on Textually Implicit questions on Insects and Scriptally Implicit questions on Whales.

One difference lay in the fact that L2 students, but not L1 students, appeared to use the expressing misconceptions strategy frequently in the Textually Implicit Questions on both texts. As an interesting side issue, a negative correlation which approached significance was found between L2 students' scores on Prior Knowledge (Whales) Test and their scores on Textually Implicit questions on Whales. These findings on Textually Implicit questions are in contrast to Jenkins' comment (1987) that L1 students in her study were not superior to L2 Science students in their performance on Textually Implicit Questions and that, "if Prior Knowledge is high, the task of untangling the syntax in order to comprehend TI questions would not be so difficult" (p. 73). Apparently in the study L2 students' Prior Knowledge sometimes did not seem adequate enough to assist them in answering Textually Implicit Questions.

Readers in this study were more like the Iranian students in Vahid-Ekbatani's study (1981) who performed less well than the American students did on inferential questions

when they read a culturally "neutral" text in their native language.

Another difference between L1 and L2 students was that L2 students apparently used the elaborating strategy more frequently than L1 students did while answering Textually Explicit, Textually Implicit and Scriptally Implicit questions on both texts. This was consistent with their text-bound approach when they read the two texts. L2 students, who seemed more focussed on the text than L1 students were, elaborated or added descriptive details to the text in their answers to the three types of questions.

4. Both L1 and L2 average Grade Three readers used all seven categories of Non Prior Knowledge strategies while interacting with texts.

They used the categories of Explanation, Interpretation, Evaluation, Monitoring of Understanding, Attempts to Understand, Comments on Strategies and Comments on Sources of Knowledge.

One of the seven categories which apparently was not frequently used was Monitoring of Understanding. This finding is consistent with the results in other research studies. Markham (1979) noted that among her subjects in Third to Sixth Grade, 96% of them failed to notice the contradiction in the essays that were read to them.

5. There were apparent differences between L1 and L2 students in their use of Non Prior Knowledge categories of strategies while reading the two texts.

L1 students appeared to use the Comments on Strategies category more frequently than L2 students on Insects. Apparently L1 students felt free to comment on their actions while reading the Insects texts.

L2 students seemed to use the Explanation of Text category more frequently than L1 students did. The researcher judged that L2 students seemed to be more "text-bound" than L1 students in their approach to both texts. This finding is in keeping with the results of Pritchard (1987) who commented that, "the only strategy the Palauans used significantly more often than the Americans was 'paraphrase'" (p. 126). Carrell (1988) had also remarked that L2 students were "text-bound".

6. There were apparent differences between L1 and L2 students in their use of specific Non Prior Knowledge strategies while reading texts.

While reading both texts, L1 students seemed to make more frequent use of the referring to previous sentences strategies. L2 students appeared to use more often the making inferences and reasoning strategies. The differences led the researcher to conclude that L1 students seemed less

focussed on the immediate text they were reading and referred to previous sentences. L2 students appeared to focus on the text when they made inferences between two sentences and gave reasons about what was stated in the sentence.

In both texts, L1 students seemed to use frequently the agreeing and judging the truth strategies. L2 students apparently made frequent use of the questioning strategy in both texts. The researcher judged that L1 students seemed to stand back from the text and evaluate it, while L2 students appeared to be more closely involved with the text, turning sentences into questions.

The apparent differences in L1 and L2 students' use of specific Interpretation and Evaluation strategies described in the preceeding paragraphs caused the researcher to conclude that L1 students seemed to be less "text-bound" than L2 students were.

In both texts L1 students appeared to comment frequently about knowing and not knowing, while L2 students apparently often commented about thinking. The researcher thought that L1 students seemed to feel free to comment on the state of their knowledge, while L2 students appeared to comment that they were performing the task of Thinking-Out-Loud.

The researcher believed that L1 students also felt more free, when they rated statements, to acknowledge their lack of understanding than L2 students were. While L2

students agreed with statement (A), "I understood all the sentences" for both texts, L1 students did not rate statement (A) as highly as L1 did after they read the Insects text.

Analysis of L1 and L2 students use of specific Comments on strategies and their ratings of statement (A) led the researcher to conclude that L1 student seemed to feel more free to admit their lack of knowledge and understanding than L2 students were.

7. There were apparent differences between the three types of questions and use of the categories of Non Prior Knowledge strategies by L1 and by L2 students.

There is evidence in the readers' use of Non Prior Knowledge categories of strategies that provides support of the definition of the three types of questions: Textually Explicit questions could be answered from the text; Textually Implicit questions required inferences on the text; and Scriptally Implicit questions required the readers to use their own resources.

Both L1 and L2 students seemed to use the Explanation category more frequently in the Textually Explicit questions than they did in the other two types of questions on both texts. Answers to this type of question could be found in the text and it was no surprise that readers would use the category of Explanation which included

the strategies of paraphrasing and quoting words of the text.

Both language groups appeared to use the Non Prior Knowledge Interpretation category more often in the Textually Implicit questions than in the other two types of questions on both texts. Answers to Textually Implicit questions would invite readers to make inferences on the text or use their own Interpretation.

Both L1 and L2 readers appeared to use the Non Prior Knowledge strategies more often in the Textually Explicit than in the Scriptally Implicit questions. Answers to Scriptally Implicit questions which could not be found in the text would invite readers to use their Prior Knowledge and not their Non Prior Knowledge strategies to answer these questions.

There is support in this conclusion for Wixson's comment (1983) that different types of questions influenced use of different strategies.

8. L1 and L2 readers' use of the specific Non Prior Knowledge strategies seemed to be sometimes alike and sometimes different when they answered the three types of questions.

In the Textually Explicit questions L1 and L2 students appeared to use the quoting strategy and commented about remembering more often than they did in the other two types

of questions on both texts. Answers to Textually Explicit questions could be found in the text, and it is not surprising that the students would use the quoting strategy and comment frequently about remembering when they answered Textually Explicit questions.

In the Textually Implicit questions on both texts both L1 and L2 students seemed to use the making inferences strategy frequently. Readers' use of this strategy fulfilled the expectation that Textually Implicit questions would invite use of the making inferences strategy.

In the Scriptally Implicit questions on both texts they apparently used the reasoning strategy often. Scriptally Implicit questions began with the word "Why.." and students seemed to react to this word by using the reasoning strategy.

L2 students differed from L1 students in that L2 students seemed to focus on the text apparently using the paraphrasing strategy more often than L1 students did while answering Textually Implicit questions on both texts.

L2 students, but not L1 students, seemed to comment more frequently about the text as their source of answers to Textually Implicit questions on the Whales text. L2 students, who apparently used the paraphrasing strategy more often in the Textually Implicit questions, also appeared to focus on the text as the source of their answers to Textually Implicit questions on Whales.

L2 students appeared to make more frequent comments than L1 students about getting the answer and knowing in the Textually Implicit questions on both texts. They seemed to comment more frequently than L1 students did about trying and thinking in the Scriptally Implicit questions on both texts. L2 students thus appeared to be more preoccupied than L1 students about the task of answering questions, just as the L2 students in the study by Padron, Knight and Waxman (1986) were concerned about the questions their teachers might ask them.

L1 students seemed to comment more frequently than L2 students did about not knowing and not remembering in the Textually Implicit and Scriptally Implicit questions on both texts. L1 students apparently felt more free to comment on their lack of knowledge.

As a comment on the conclusions discussed above, it may be said that the study has supplied evidence of what are considered to be apparent differences between L1 and L2 students in their use of Prior Knowledge strategies and Non Prior Knowledge strategies while they interacted with a text and answered questions on that text.

Conclusions and Discussion: Methodology

The conclusion was reached that the methodology was appropriate.

It had been decided to use an exploratory case study design to answer the research questions about L1 and L2 average Grade Three readers' use of Prior Knowledge and Non Prior Knowledge strategies while reading texts and while answering questions. The researcher believed that an in-depth study was required to answer the questions and that the use of a second measure would serve as a means of checking the findings of the first measure. The two measures chosen were the Think-Out-Loud procedure and the rating of strategy statements.

The Think-Out-Loud procedure was found to be a viable one with the students in the study. They were given one practice training with a passage not used in the analysis and most students felt comfortable about the procedure of Thinking-Out-Loud (T-O-L) after each sentence.

The rating scale procedure was also appropriate. The students in the study did not find it a difficult task to rate statements. They received one training in rating statements and were attracted to the visual aid in the form of five faces. In fact, one student commented that it was an easy task.

One drawback to using a rating scale was that the statements had to be created before the students had done their T-O-L. The researcher was not able to foresee exactly the types of strategies the students would use, although the third pilot study had provided insight into some strategies the students used. However, each group of students may use

certain strategies that are unique to that group, making it a difficult task to design, before students' Think-Out-Loud, statements which would coincide with students' Think-Out-Loud protocols.

Conclusions and Discussion: Materials and Instruments

It was concluded that both materials and instruments generally served their purposes well.

The two texts on Whales and Insects were adapted from Lipson (1981). The texts were interesting to the students and allowed them to Think-Out-Loud after each sentences.

The researcher concluded that the Whales text was more difficult than the Insects text for some students because of two words, "blubber" and "mammals". Students in the third pilot study had not commented that these two words were difficult and so no forewarning had been given that they would pose a challenge.

The Textually Explicit (TE), Textually Implicit (TI) and Scriptally Implicit (SI) questions proved to be neither extremely easy nor difficult for the students as seen in the range of scores, (1-3 for TE on Whales, 0-3 for TE on Insects; 4-6 for TI on Whales, 2-6 for TI on Insects; 3-9 for SI for Whales, 2-8 for SI on Insects). The researcher concluded that the readers found the questions on Insects

slightly more difficult than they did the questions on Whales.

The Coloured Progressive Matrices and Gates-MacGinitie Reading Test were instruments not designed by the researcher. The Coloured Progressive Matrices served its purpose to equate the two groups selected for the Sixth and Seventh Sessions. The Comprehension subtest of the Gates-MacGinitie Reading Test served its purpose in selecting students who were considered to be average readers and whose scores fell between the fourth and seventh stanines.

The Prior Knowledge Test seemed to serve its purpose of testing the students' knowledge of Whales and Insects. Students' scores ranged from 2-7 out of 8 items on Whales and Insects indicating that all students found it neither extremely easy nor very difficult.

The Free-telling of Whales and Insects gave the students the opportunity to describe what they knew about these two topics. The students were given time to prepare either mentally or in writing and most students made notes to themselves. Lipson's instructions (1981) were effective in that students went along with the belief that the researcher knew nothing about Whales and Insects and that they had a reason to tell what they knew. The two prompts allowed them to add whatever had been forgotten.

The scoring of free-telling was adapted from Langer and Nicolich (1981). There was a spread of scores ranging from 1-3 out of a maximum of 3.

The Question-Markers Matching Test was designed to assess the students' knowledge of some question-markers. Although the scores ranged from 0-5, the researcher felt that the test was difficult for some students who knew the correct answers to oral questions which contained the question-markers, but were unable to find the correct match when they did the Question-Markers Matching Test.

The Reading and Question-Answering Rating Scales were attractive to the students because of the visual aid in the form of five faces. The statements were read to the students and they all showed in their behaviour that they stopped and thought about the statements before they rated them. Some even made comments after their rating, giving reasons for their judgment. The range in scores from 1-5 on each statement also showed that students did not all react in the same way towards the statements.

Conclusions and Discussion: Proposed Question-Answering Model

Both L1 and L2 average Grade Three readers illustrated in their T-O-L (Questions) protocols and in their ratings of statement some of the stages of the Question-Answering model proposed in Chapter I.

The first stage of the Question-Answering model is when students try to comprehend the meaning of the question.

Students made reference to their understanding of the question in their T-O-L (Questions) protocol. Readers used the specific Monitoring of Understanding strategy of question not understood (0-.8% for Textually Explicit, 0-1.0% for Textually Implicit, and 0-.8% for Scriptally Implicit questions). While the percentage of use was not high, the students did indicate when they did not understand a question.

The second stage in question-answering is when readers categorize the type of question. Students in this study did not comment on their categorizing of questions. The researcher had attempted to tap this aspect of question-answering by designing the Question-Markers Matching Test. Although the students could answer orally questions which contained different types of question-markers, the metalinguistic nature of the Question-Markers Matching Test was difficult for some of the students in this study. The researcher concluded that the second stage of question-answering was not illustrated by the students in the study.

The third stage of answering question is when readers search in their memory for an answer. Readers used the remembering strategy in their T-O-L (Questions) protocols (.6-3.8% for Textually Explicit, 0-2.9% for Textually Implicit, and 0-2.1% for Scriptally Implicit Questions). Although the percentage of use was not high, there is still evidence that readers used their memory to find an answer. Readers' rating of Question-Answering strategy statement

(C), "I got the answer by remembering what I had just read" indicated that they agreed with the statement.

The fourth stage in question-answering is when readers cannot find an answer in their memory and search for alternate sources, for example the text. L2 students, but not L1 students, used the specific Attempts to Answer strategy of re-reading (.7-1.1% for Textually Explicit; 1.7-2.2% for Textually Implicit; and .4-1.2% for Scriptally Implicit questions on both texts). The support for this fourth stage exists although slight. Some readers experienced difficulty when they re-read the text to search for an answer to Textually Implicit questions on Insects. They may not have acquired the ability to "scan" the text. Garner et al (1985) who hypothesized about the stages in acquiring an efficient "lookback" strategy, considered the ability to scan as one which develops after undifferentiated re-reading, when one is not able to scan the text.

The fifth stage is when readers construct an answer that matches the type of question asked. There is no support for this stage, neither in readers' T-O-L (Questions) protocols nor in their ratings of statements. In fact the researcher did not devise any statement about this stage because the pilot studies had shown that it was difficult for students to rate statements about types of questions.

Monitoring the quality of one's answer was part of the proposed question-answering model. One reader in the study did monitor the quality of her answer. While answering

Question 7 of Whales Student #2, an L2 reader, said,
"...that maybe that was a good answer".

Suggestions for Further Research

A number of suggestions for further research can be drawn from the study.

1. The researcher devised a taxonomy of categories of strategies which readers used while interacting with texts and while answering questions on the texts. The researcher amalgated categories created by other researchers (Pereira, 1991) and new categories which emerged from the readers' T-O-L protocols. Other researchers might replicate the study with students of different age groups or reading ability and provide validation of the researcher's taxonomy for categorizing oral responses in T-O-L situations.
2. Researchers might replicate the study using the same texts and procedures with other students who are of average reading ability. This would provide further validity and reliability data on the findings of the study.
3. The focus of the study was the differences between L1 and L2 students and for this reason the researcher did not analyze in depth the data for differences between Male and Female readers. Initial subjective analysis of the data revealed what seemed to be some differences between

Male and Female readers. The researcher speculates whether other researchers replicating the study with a larger sample might find differences between Male and Female readers when they read texts and answer questions on them.

4. The proposed Question-Answering model was not fully validated by the students in the study. Evidence is lacking that students categorized questions before answering or that they matched the categories. Researchers in future may devise instruments or procedures which could test whether students do categorize the questions before they answer and whether they match their answers to the types of questions they categorized.

Implications for Teaching Strategies

In this study Textually Explicit, Textually Implicit and Scriptally Implicit Questions resulted in different strategies being used by these average L1 and L2 Grade Three readers just as Wixson (1983) commented that different types of questions resulted in different responses from her subjects. Similarly in this study there were Explanations in the form of quoting from the text when readers were answering Textually Explicit Questions, while there was use of the reasoning strategy when they answered Scriptally Implicit Questions. Thus if teachers wish to develop their

students' use of the reasoning strategy they might try to ask fewer Textually Explicit Questions and more Scriptally Implicit Questions, providing models for the strategy.

The three types of questions assessed what the researcher or a teacher would like to measure of readers' comprehension of the texts. But the three types of questions could not fully assess readers' comprehension of the text. The Think-Out-Loud (T-O-L) methodology, it was felt, was better able to capture what the readers' did to understand the text. The researcher believes that students' T-O-L (Text) protocols reveal their comprehension of the text to a fuller degree than simple direct questions would have or even by having the students' re-tell the text. When students re-tell the text, certain parts they are uncertain about or do not understand may be omitted in their account. This study has shown that it is not difficult for average L1 and L2 Grade Three readers to Think-Out-Loud. They were able to express their thoughts after one training session on the Dinosaurs text. Classroom teachers could use the Think-Out-Loud activity during the time they have individual reading conferences with their students. Teachers could tape their students' T-O-L and record their impressions of the T-O-L responses as a means of assessing their students' reading comprehension.

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APPENDIX 1

RESEARCHER-DEVELOPED PRIOR KNOWLEDGE TEST

Circle the best answer

1. A whale's eyes are:
 - a. small
 - b. medium-sized
 - c. big
2. A whale is:
 - a. a fish
 - b. a mammal
 - c. a reptile
3. Whales breathe through their:
 - a. gills
 - b. mouths
 - c. blowholes
4. A whale's hearing is:
 - a. poor
 - b. good
 - c. neither poor nor good.
5. Whales have a layer of blubber that is:
 - a. thick
 - b. thin
 - c. neither thick nor thin

6. The biggest whale is the:
- a. fin whale
 - b. gray whale
 - c. blue whale
7. Baleen whales have:
- a. no teeth
 - b. some teeth
 - c. many teeth
8. To the Inuit, whale meat tastes:
- a. terrible
 - b. delicious
 - c. neither terrible nor delicious

-
9. An insect has:
- a. two body parts
 - b. three body parts
 - c. four body parts
10. The body of most insects is covered by a shell which is:
- a. hard
 - b. soft
 - c. neither hard nor soft
11. Some insects make:
- a. wool
 - b. plastic
 - c. silk

12. Spiders have:
- a. four legs
 - b. six legs
 - c. eight legs
13. When a grasshopper first hatches from its egg it looks like:
- a. a worm
 - b. a caterpillar
 - c. a grasshopper
14. In winter one kind of Canadian butterfly goes to:
- a. Iceland
 - b. Mexico
 - c. England
15. Mosquitoes which suck blood are:
- a. only males
 - b. only females
 - c. both males and females
16. An ant which lays eggs is:
- a. a queen ant
 - b. a male ant
 - c. a worker ant
-
17. The word "dinosaur" means terrible:
- a. alligator
 - b. lizard
 - c. crocodile

18. When the dinosaurs lived it was:
 - a. warm
 - b. cold
 - c. neither warm nor cold
- 19 The brains of most dinosaurs were:
 - a. large
 - b. medium-sized
 - c. tiny
20. The most fierce dinosaur was the:
 - a. Corythosaurus
 - b. Tyrannosaurus
 - c. Ankylosaurus
21. Most giant plant-eating dinosaurs moved:
 - a. slow
 - b. fast
 - c. neither fast nor slow
- 22 The Triceratops protected themselves with their:
 - a. teeth
 - b. tails
 - c. horns
- 23 A meat-eating dinosaur was the:
 - a. Brontosaurus
 - b. Stegosaurus
 - c. Allosaurus

24 Dinosaurs died out about:

- a. 65 million years ago
 - b. 265 million years ago
 - c. 465 million years ago
-

25 New Guinea is near to:

- a. Africa
- b. South America
- c. Australia

26. Compared to the size of Greenland, New Guinea is:

- a. smaller
- b. the same
- c. larger

27. In New Guinea there is:

- a. no winter
- b. a short winter
- c. a long winter

28. Most meat which were eaten by the people in New Guinea came from:

- a. cows
- b. chickens
- c. pigs

29. Some people in New Guinea grow:

- a. bananas
- b. pears
- c. apples

30. Some people in New Guinea could make:
- a. long swords
 - b. stone axes
 - c. metal shields
31. Some people of New Guinea wore headdresses made of:
- a. sealskin
 - b. human hair
 - c. colored paper
32. At the fair held by the people of New Guinea, they:
- a. juggled balls
 - b. did tricks
 - c. showed their animals
-

33. Winter in the Far North is:
- a. short
 - b. long
 - c. neither short nor long
34. An igloo was made of:
- a. snow
 - b. rocks
 - c. brick
35. In summer the Inuit lived in:
- a. igloos
 - b. tents
 - c. trailers

36. The Inuit's sleds were pulled by:
- a. dogs
 - b. horses
 - c. bears
37. Hunters lived in igloos:
- a. all the time
 - b. in the summer
 - c. for a while
38. The Inuit made thread from the muscles of:
- a. a fox
 - b. a walrus
 - c. a caribou
39. The Inuit are well-known for their carvings of:
- a. coal
 - b. soapstone
 - c. gold
40. Nowadays most Inuit get their food by:
- a. hunting animals
 - b. fishing seals
 - c. shopping at a store

APPENDIX 2

QUESTION-MARKERS MATCHING TEST

Find the number on the right that best completes the statement on the left, and write that number in the blank next to the statement.

- | | |
|------------------------------------|---|
| ___ to answer "why" questions | 1. you tell the place that things happened. |
| ___ to answer "when" questions | 2. you tell the number of things. |
| ___ to answer "which" questions | 3. you tell the reasons that things are done. |
| ___ to answer "where" questions | 4. you tell the time that things happened. |
| ___ to answer "how many" questions | 5. you tell the names of things. |

APPENDIX 3

RESEARCHER-DEVELOPED READING STRATEGY RATING SCALE

Point to the face that best describes how you feel when you hear the following sentences.



STRONGLY
DISAGREE

1



DISAGREE

2



NEUTRAL

3



AGREE

4

STRONGLY
AGREE

5

- | | | | | | |
|---|---|---|---|---|---|
| A. I understood all the sentences. | 1 | 2 | 3 | 4 | 5 |
| B. I guessed what would come in the following sentences. | 1 | 2 | 3 | 4 | 5 |
| C. My guess about what would come in the next sentence was right | 1 | 2 | 3 | 4 | 5 |
| D. I used what I already knew to help me understand this passage. | 1 | 2 | 3 | 4 | 5 |
| E. I read some sentences again that I didn't understand. | 1 | 2 | 3 | 4 | 5 |
| F. I just went on reading when I came to some difficult words. | 1 | 2 | 3 | 4 | 5 |
| G. When I read I thought about something I had seen on the TV or in movies. | 1 | 2 | 3 | 4 | 5 |
| H. When I read some sentences I said to myself, "I don't get it". | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| I. I think the writer forgot to write some facts I know about (whales or insects) | 1 | 2 | 3 | 4 | 5 |
| J. I stopped and thought about the meaning of some hard sentences. | 1 | 2 | 3 | 4 | 5 |
| K. The writer made me remember some things that had happened to me. | 1 | 2 | 3 | 4 | 5 |
| L. Some difficult words became more clear after I read more sentences. | 1 | 2 | 3 | 4 | 5 |
| M. When I read some sentences, I remembered some facts my teacher or my mom or dad had told me. | 1 | 2 | 3 | 4 | 5 |
| N. I could "see" pictures in my head when I read some sentences. | 1 | 2 | 3 | 4 | 5 |
| O. I had to read some sentences more slowly than other sentences | 1 | 2 | 3 | 4 | 5 |
| P. I knew a lot about this subject before I started reading this passage. | 1 | 2 | 3 | 4 | 5 |
| Q. When I read some sentences, I thought some facts were missing, and I added or filled in those facts. | 1 | 2 | 3 | 4 | 5 |
| R. I read a book about (whales, or insects). | 1 | 2 | 3 | 4 | 5 |

RESEARCHER-DEVELOPED QUESTION-ANSWERING STRATEGY RATING SCALE

Point to the face that best describes how you feel when you hear the following sentences.



**STRONGLY
DISAGREE**

1



DISAGREE

2



NEUTRAL

3



AGREE

4



**STRONGLY
AGREE**

5

- | | | | | | |
|--|---|---|---|---|---|
| A. I understood the meaning of the questions | 1 | 2 | 3 | 4 | 5 |
| B. I knew the answers because they were about some things my teacher or my mom or dad had told me. | 1 | 2 | 3 | 4 | 5 |
| C. I got the answers by remembering what I had just read. | 1 | 2 | 3 | 4 | 5 |
| D. I got the ideas for the answers from watching TV or movies. | 1 | 2 | 3 | 4 | 5 |
| E. The answers were from the sentences I just read. | 1 | 2 | 3 | 4 | 5 |
| F. I had to think a lot to answer some questions. | 1 | 2 | 3 | 4 | 5 |
| G. I had to use two sentences in the passage to answer some questions. | 1 | 2 | 3 | 4 | 5 |
| H. I was sure about my answers. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| I. My answers came from what I have seen around me. | 1 | 2 | 3 | 4 | 5 |
| J. The answers just came to my mind. | 1 | 2 | 3 | 4 | 5 |
| K. I had to read the passage again to answer some questions | 1 | 2 | 3 | 4 | 5 |
| L. I guessed some answers. | 1 | 2 | 3 | 4 | 5 |
| M. Before I read the sentences, I already knew the facts to answer the questions. | 1 | 2 | 3 | 4 | 5 |
| N. I do not know how I got the answers. | 1 | 2 | 3 | 4 | 5 |

APPENDIX 4

PASSAGES AND QUESTIONS

DINOSAURS

Dinosaurs lived on the earth a long time ago. The earth was not the same then. It was warm all the time. More land was under water. There were lots of swamps, lakes, and plants.

There were many kinds of dinosaurs. Some even had wings. Some were only as large as chickens. Although some were as large as horses, others were giants. Some ate plants, and some ate meat. The meat-eating dinosaurs often ate the plant-eating dinosaurs. But the plant-eating dinosaurs had sharp horns and hard bones that covered their bodies. These made it hard for the meat-eating dinosaurs to kill the plant-eating dinosaurs.

The giant dinosaurs which were mostly plant-eaters lived in the swamps. The winged dinosaurs lived in many different places.

No man ever saw a dinosaur because dinosaurs died a long time before people came on the earth. No one knows for sure the reason why the dinosaurs died. Maybe it was because the earth got cold or maybe it was because there was not enough food for dinosaurs.

Adapted with permission from Lipson (1981)

1. When did the dinosaurs live?
(Textually Explicit Question).
2. Who ate the plant-eating dinosaurs?
(Textually Explicit Question).
3. How did the meat-eating dinosaurs kill other dinosaurs?
(Scriptally Implicit Question).
4. What did the giant dinosaurs mostly eat?
(Textually Explicit Question).
5. Why did the giant dinosaurs live in the swamps?
(Scriptally Implicit Question).
6. Why was it difficult for the meat-eating dinosaurs to
kill the plant-eating dinosaurs?
(Textually Implicit Question).
7. Why did the dinosaurs die?
(Textually Implicit Question).
8. How was the earth different when the dinosaurs lived?
(Textually Implicit Question).
9. How do we now know about dinosaurs?
(Scriptally Implicit Question).

INSECTS

There are more kinds of insects than any other kind of animals. Insects hatch from eggs. Some insects look like their parents when they are young, but others do not. A bee is an insect that looks like a worm when it hatches. Then it grows legs and wings. Grasshoppers hatch from eggs, and look like their parents when they are born.

All adult insects have six legs and three body parts. Many people think that spiders are insects. But spiders have two body parts and eight legs.

Some kinds of insects eat farmers' crops, and others carry sickness. But most insects are good friends to man. They carry seeds to make fruits and flowers grow. Bees make honey and wax. Other insects make cotton and silk.

Insects live in all parts of the world. A few kinds of insects go south for the winter. When winter comes in Canada, one kind of butterfly goes all the way to Mexico. Nobody knows how they find their way back each year.

Adapted with permission from Lipson (1981)

1. In which parts of the world do insects live?
(Textually Explicit Question).
2. How many legs and how many body parts does an insect have?
(Textually Explicit Question).
3. How many legs and how many body parts does a spider have?
(Textually Explicit Question).
4. How is the baby bee different from the adult bee?
(Textually Implicit Question).
5. How is an insect helpful to people?
(Textually Implicit Question).
6. How do insects carry seeds?
(Scriptally Implicit Question).
7. Why do some farmers not like insects?
(Textually Implicit Question).
8. Why do some insects go south in winter?
(Scriptally Implicit Question).
9. Why do you think there are more insects than any other kind of animals?
(Scriptally Implicit Question).

WHALES

The biggest animal on land or sea is the whale. Whales are huge animals with small eyes that are good for seeing under water.

Whales seem to be fishes, but they are mammals. A fish can get oxygen from water through its gills. But a mammal must take oxygen from the air. Whales can stay under water for fifteen minutes, but then they have to come up. They breathe through blowholes in the tops of their heads. The holes are open only when the whales come up.

Whales have fat called blubber. Whales that live in icy waters have lots of blubber. When whales are killed, the blubber is used to make many useful things. It is made into paint and soap. The meat is good to eat. Some parts are used to make perfume. Almost all of the whale is used.

Even though whales are very big, they are usually not killers. Whales live and play in groups, and they do not fight among themselves. They even seem to cry when one of their group dies.

Adapted with permission from Lipson (1981)

1. Which is the biggest living animal?
(Textually Explicit Question).
2. What are the eyes of the whale good for?
(Textually Explicit Question).
3. Why can the whale not stay under water for more than fifteen minutes?
(Textually Implicit Question).
4. What do whales breathe through?
(Textually Explicit Question).
5. When is the whale's blowhole closed?
(Textually Implicit Question).
6. Which part of the whale is used to make paint and soap?
(Textually Implicit Question).
7. Why do whales in icy waters have lots of blubber?
(Scriptally Implicit Question).
8. Why do you think a whale cries when another whale dies?
(Scriptally Implicit Question).
9. Why do you think some sailors are afraid of whales?
(Scriptally Implicit Question).

APPENDIX 5

SCORING OF ANSWERS TO QUESTIONS

Whales

1. Textually Explicit Question--1 point
 - whale or Blue Whale--1 point
 - no point: Killer or Beluga Whale
Elephant or other animals
2. Textually Explicit Question--1 point
 - seeing or looking under water--1 point
 - no point: seeing
going under water
catching food
3. Textually Implicit Question--2 points
 - doesn't have gills or is not a fish--2 points
 - or is a mammal or can't get air from water--2 points
 - or needs to get air/oxygen--2 points
(if a student mentions that it is a mammal and not a fish, the score would still be 2 points)
4. Textually Explicit Question--1 point
 - blowhole or breathing hole--1 point
5. Textually Implicit Question--2 points
 - under water--2 points
6. Textually Implicit Question--2 points
 - blubber--2 points
 - no point: fins
head
tail
middle
bubbler

7. Scriptally Implicit Question--3 points

- it is cold--2 points
 - or blubber keeps it from freezing--2 points
 - or blubber keeps it warm--2 points
 - or fat acts as an insulation--1 point
- (if a student mentions that it keeps it warm so it will not freeze, the score would still be 3 points)

8. Scriptally Implicit Question--3 points

- dead whale was a relative or part of the group--1 point
 - whale is sad--2 points
 - or it misses whale who died--2 points
 - or whales are like people at a funeral--2 points
- (if a student mentions whale is sad and misses whale who died, the score would still be 3 points)

9. Scriptally Implicit Question--3 points

- whales are dangerous--2 points
 - or whales might hurt them--2 points
 - or whales might damage the ship--2 points
 - or whales are big--1 point
- (if a student mentions that whales are dangerous and might damage the ship, the score would still be 3 points)

Insects

1. Textually Explicit Question--1 point
 - in all parts of the world--1 point
 - or in hot and cold places--1 point
 - no point: many parts
 - name of country or countries with no mention
 - that insects live in all parts of the world
2. Textually Explicit Question--1 point
 - 6 legs and 3 body parts--1 point
 - no point: if one part is incorrect
 - if spiders are mentioned
3. Textually Explicit Question--1 point
 - 8 legs and 2 body parts--1 point
 - no point: if one part is incorrect
4. Textually Implicit Question--2 points
 - baby bee looks like a worm--1 point
 - adult bee has legs and wings--1 point
 - no point: baby bee is smaller than adult bee
5. Textually Implicit Question--2 points
 - carry seeds to make fruits and flowers grow--1 point
 - bees make honey or honey and wax--1 point
 - or some insects make silk--1 point
 - or some insects eat other harmful insects--1 point
 - (if a student mentions that bees make honey and silk, some insects eat harmful insects and other insects carry seeds to make fruits and flowers grow, the score would still be 2 points)
6. Scriptally Implicit Questions--3 points
 - stick to them--3 points
 - or their legs--3 points
 - or bees have what is called "pollen baskets"--3 points
 - or mouth--1 point
 - no point: back
 - (if a students mentions legs and mouth, the score would still be 3 points)

7. Textually Implicit Question--2 points

- insects eat farmers' crops--2 points
 - or carry sickness to their animals--1 point
 - or bother them and/or their animals--1 point
 - or bite them--1 point
- (if a student mentions that insects eat farmers' crops and carry sickness to their animals, the score would still be 2 points)

8. Scriptally Implicit Question--3 points

- it is cold in the north--2 points
 - or they will freeze--2 points
 - or it is warmer in the south--2 points
 - or can't find food where it is cold--1 point
- (if a student mentions that it is cold in the north and warmer in the south, the score would still be 3 points)

9. Scriptally Implicit Question--3 points

- insects are found everywhere--2 points
 - or insects adapt well to different climates--2 points
 - or insects are small or can fit in many places--2 points
 - or animals are big or take a lot of room--2 points
 - or insects lay many eggs or multiply quickly--2 points
 - or insects survive in spite of men's attempts to destroy them--2 points
 - no point: there are many insects
 there are more animals
- (if a student mentions more than one of the suggested answers, the score would still be 3 points)

APPENDIX 6

STUDENTS' SEX, AGE, LANGUAGE PREDOMINANTLY SPOKEN AT HOME,
SCHOOL ATTENDED

Group 1

Student	Sex		Age		Home Language		School (Y or Z)
	M	F	Yrs	Mths	English	Others	
1		F	8	4	English		Z
2		F	8	0		Croatian	Z
3	M		8	0		Chinese	Z
6	M		8	5	English		Z
7		F	8	7	English		Z
8	M		8	7	English		Z
21		F	7	11	English		Z
22		F	8	7		Punjabi	Y
23	M		8	2		Vietnamese	Z
26		F	8	5		Chinese	Z

Group 2

Student	Sex		Age		Home Language		School (Y or Z)
	M	F	Yrs	Mths	English	Others	
5		F	8	4	English		Z
9		F	8	7	English		Z
10		F	8	4		Vietnamese	Z
13	M		8	1		Punjabi	Z
14		F	8	2		Chinese	Z
15	M		8	10	English		Y
16	M		8	6	English		Z
18	M		8	7	English		Z
25	M		8	7		Punjabi	Y
27		F	8	6		Punjabi	Y

APPENDIX 7

SCORES ON COLOURED PROGRESSIVE MATRICES,
 GATES-MACGINITIE READING (COMPREHENSION SUBTEST),
 QUESTION-MARKERS MATCHING TEXT,
 PRIOR KNOWLEDGE (WHALES) TEST,
 PRIOR KNOWLEDGE FREE-TELLING (WHALES),
 PRIOR KNOWLEDGE (INSECTS) TEST,
 PRIOR KNOWLEDGE FREE-TELLING (INSECTS).

Group 1

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Tests										
Coloured Progressive Matrices	33	19	34	33	31	30	18	26	29	31
Gates-MacGinitie (Comprehension Subtest)	56	50	61	56	43	60	54	55	54	50
Question-Markers Matching Test	5	1	5	5	3	3	5	3	0	5
Prior Knowledge (Whales) Test	6	4	6	7	6	6	5	4	7	6
Prior Knowledge Free-Telling (Whales)	3	3	3	2	1	3	2	1	2	3
Prior Knowledge (Insects) Test	4	2	5	4	4	5	7	3	4	5
Prior Knowledge Free-Telling (Insects)	2	2	3	2	1	3	2	2	2	2

APPENDIX 7 (Continued)

Group 2

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Tests										
Coloured Progressive Matrices	34	30	30	25	26	24	32	34	25	28
Gates-MacGinitie (Comprehension Subtest)	60	45	54	53	61	43	58	60	48	53
Question-Markers Matching Test	3	1	2	0	3	2	1	0	1	5
Prior Knowledge (Whales) Test	7	7	7	5	4	6	7	6	2	5
Prior Knowledge Free-Telling (Whales)	3	3	3	3	2	2	1	2	2	1
Prior Knowledge (Insects) Test	4	6	5	6	5	4	5	7	2	3
Prior Knowledge Free-Telling (Insects)	3	1	2	3	2	1	1	2	3	1

APPENDIX 8

SCORES ON TEXTUALLY EXPLICIT QUESTIONS (WHALES),
 TEXTUALLY IMPLICIT QUESTIONS (WHALES),
 SCRIPTALLY IMPLICIT QUESTIONS (WHALES),
 TEXTUALLY EXPLICIT QUESTIONS (INSECTS),
 TEXTUALLY IMPLICIT QUESTIONS (INSECTS),
 SCRIPTALLY IMPLICIT QUESTIONS (INSECTS),

Group 1

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Questions										
Textually Explicit (Whales)	3	3	2	3	3	2	1	3	1	2
Textually Implicit (Whales)	4	6	4	6	6	4	6	6	4	4
Scriptally Implicit (Whales)	7	9	8	8	5	5	4	4	5	6
Textually Explicit (Insects)	2	3	2	2	0	2	3	2	0	1
Textually Implicit (Insects)	4	3	4	2	2	4	4	4	2	3
Scriptally Implicit (Insects)	4	7	7	6	3	2	4	6	4	3

APPENDIX 8 (Continued)

Group 2

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Questions										
Textually Explicit (Whales)	2	3	2	2	2	3	3	3	1	3
Textually Implicit (Whales)	6	6	4	4	6	4	6	6	6	6
Scriptally Implicit (Whales)	5	6	4	6	5	3	7	7	8	5
Textually Explicit (Insects)	3	3	0	3	2	0	3	3	2	1
Textually Implicit (Insects)	6	4	2	3	5	3	4	5	5	4
Scriptally Implicit (Insects)	4	5	2	5	4	8	8	8	5	7

APPENDIX 9

RATINGS OF READING STRATEGY STATEMENTS
AFTER HAVING READ THE WHALES TEXT

Group 1

Read Whales text in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Statement										
A Understood all sentences	3	3	4	4	1	4	3	4	4	5
B Guessed following sentences	4	3	5	2	3	5	2	2	3	1
C Guess was right	3	4	2	2	2	5	4	2	5	2
D Used prior knowledge to help understand	4	5	5	5	4	3	2	4	4	4
E Re-read sentences not understood	3	3	4	4	4	3	4	2	4	2
F Went on reading after some difficult words	3	1	4	4	4	4	2	4	5	2
G Thought about something on T.V. or movies	3	2	5	4	2	3	2	4	5	2
H Said, "I don't get it"	4	3	4	4	2	4	2	4	3	2
I The writer forgot to write facts I know	3	4	4	2	3	2	2	4	4	2
J Thought about the meaning of some hard sentences	4	4	4	4	3	4	2	2	2	2
K Remembered things that had happened	3	3	4	4	3	1	2	2	4	1
L Difficult words became more clear after reading more sentences	4	3	4	4	4	3	4	4	5	2

Appendix 9 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Statement										
M Remembered facts told by teacher or parents	4	5	5	4	2	4	2	2	4	2
N Could "see" pictures	4	4	5	4	4	2	2	4	4	4
O Read some sentences more slowly	4	4	4	4	4	4	4	4	4	2
P Knew a lot about whales before reading passage	3	3	4	2	2	5	2	2	4	4
Q Filled in facts that were missing	2	3	4	2	3	4	2	2	5	2
R Read a book about whales	4	5	2	4	4	2	2	4	5	4

APPENDIX 9 (Continued)

Group 2

Read Whales text in the seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Statement										
A Understood all sentences	3	3	4	3	5	5	3	4	4	4
B Guessed following sentences	4	2	4	3	1	1	2	3	3	1
C Guess was right	4	2	3	3	1	5	2	3	3	2
D Used prior knowledge to help understand	5	4	4	2	3	5	5	4	5	5
E Re-read sentences not understood	2	2	4	3	4	5	4	4	5	1
F Went on reading after some difficult words	1	4	3	1	1	5	2	3	4	4
G Thought about something on T.V. or movies	1	3	3	1	1	5	2	4	5	5
H Said, "I don't get it"	4	4	3	3	1	5	3	4	3	2
I The writer forgot to write facts I know	4	1	3	4	1	1	2	4	1	4
J Thought about the meaning of some hard sentences	3	3	4	3	1	5	4	4	4	3
K Remembered things that had happened	1	2	3	1	1	5	2	2	1	2
L Difficult words became more clear after reading more sentences	3	4	4	3	1	5	4	3	5	5

Appendix 9 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Statement										
M Remembered facts told by teacher or parents	5	2	4	4	3	5	4	3	5	2
N Could "see" pictures	5	4	4	1	4	5	4	4	5	5
O Read some sentences more slowly	1	4	3	5	3	5	2	3	5	3
P Knew a lot about whales before reading passage	5	2	3	3	3	5	2	4	2	2
Q Filled in facts that were missing	3	2	3	3	1	1	2	4	1	4
R Read a book about whales	5	3	4	5	3	5	4	3	5	5

APPENDIX 10

RATINGS OF READING STRATEGY STATEMENTS
AFTER HAVING READ THE INSECTS TEXT

Group 1

Read Insects text in the seventh session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Statement										
A Understood all sentences	3	3	5	3	2	4	3	4	4	4
B Guessed following sentences	4	2	5	2	3	2	3	2	4	2
C Guess was right	2	4	2	2	3	2	2	2	5	2
D Used prior knowledge to help understand	4	3	5	5	4	2	2	2	4	4
E Re-read sentences not understood	3	4	1	2	2	3	4	2	2	2
F Went on reading after some difficult words	3	1	1	4	2	5	2	2	4	2
G Thought about something on T.V. or movies	2	2	5	4	3	3	2	4	5	4
H Said, "I don't get it"	4	5	1	4	4	3	2	2	3	2
I The writer forgot to write facts I know	2	1	1	2	3	3	2	2	4	2
J Thought about the meaning of some hard sentences	5	2	4	4	4	3	4	2	2	2
K Remembered things that had happened	3	4	2	2	3	4	2	2	5	2
L Difficult words became more clear after reading more sentences	4	1	5	4	4	3	2	2	4	2

Appendix 10 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Statement										
M Remembered facts told by teacher or parents	5	5	5	4	4	4	2	4	5	4
N Could "see" pictures	4	5	5	2	2	3	2	2	4	4
O Read some sentences more slowly	3	3	1	2	4	2	4	2	4	2
P Knew a lot about insects before reading passage	2	4	2	2	2	3	2	2	5	4
Q Filled in facts that were missing	2	2	1	2	3	2	2	2	4	2
R Read a book about insects	4	5	5	2	3	3	2	2	5	4

APPENDIX 10 (Continued)

Group 2

Read Insects text in the sixth session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Statement										
A Understood all sentences	3	4	4	3	5	5	3	4	5	4
B Guessed following sentences	4	3	4	3	1	3	2	3	4	2
C Guess was right	3	2	4	4	1	5	2	2	3	1
D Used prior knowledge to help understand	5	4	5	5	5	5	5	4	5	5
E Re-read sentences not understood	5	3	4	3	1	3	4	4	5	3
F Went on reading after some difficult words	1	4	4	3	2	4	4	4	2	1
G Thought about something on T.V. or movies	4	3	4	4	4	4	4	3	3	2
H Said, "I don't get it"	5	4	3	3	1	3	3	2	4	2
I The writer forgot to write facts I know	5	4	3	5	2	5	2	2	5	5
J Thought about the meaning of some hard sentences	3	4	4	3	1	4	4	4	1	4
K Remembered things that had happened	3	2	4	1	1	4	4	3	2	5
L Difficult words became more clear after reading more sentences	1	4	3	3	1	5	4	3	2	1

Appendix 10 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Statement										
M Remembered facts told by teacher or parents	5	2	4	5	1	1	3	4	5	2
N Could "see" pictures	5	4	4	1	5	4	4	4	5	5
O Read some sentences more slowly	1	4	4	3	3	4	1	4	4	3
P Knew a lot about insects before reading passage	5	2	3	5	2	5	2	4	4	5
Q Filled in facts that were missing	3	3	3	3	1	2	3	4	1	1
R Read a book about insects	5	4	4	5	1	4	4	4	4	4

APPENDIX 11

RATINGS OF QUESTION-ANSWERING STRATEGY STATEMENTS
AFTER HAVING ANSWERED QUESTIONS ON THE WHALES TEXT

Group 1

Answered questions on the Whales text in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Statement										
A Understood meaning of questions	4	3	5	4	4	4	2	4	4	4
B Answers were about things told by teacher or parents	3	5	5	4	4	4	4	2	5	4
C Answers from remembering what had been read	5	5	5	4	3	4	2	4	4	4
D Got ideas for answers from T.V. or movies	1	2	5	5	3	4	2	4	4	2
E Answers were from sentences	3	3	5	4	4	4	4	2	5	2
F Thought a lot to answer some questions	3	4	5	4	4	3	4	4	4	4
G Used two sentences in passage to answer some questions	3	2	5	4	3	4	2	2	3	2
H Sure about answers	4	4	4	2	4	4	2	4	3	2
I Answers came from what had been seen	3	1	5	5	4	4	2	4	4	2
J Answers just came to mind	4	4	4	2	3	2	4	2	3	4
K Re-read passage to answer some questions	4	4	5	2	2	2	4	2	3	2

Appendix 11 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Statement										
L Guessed some answers	3	5	4	4	4	4	4	2	3	2
M Already knew facts to answer questions	2	3	5	3	3	4	2	2	4	4
N Not know how got the answers	4	4	2	4	3	4	4	2	3	2

Appendix 11 (Continued)

Group 2

Answered questions on the Whales text in the
seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Statement										
A Understood meaning of questions	4	3	5	3	5	5	3	4	5	4
B Answers were about things told by teacher or parents	4	4	4	3	2	5	3	4	5	5
C Answers from remembering what had been read	5	4	3	4	4	5	5	5	5	4
D Got ideas for answers from T.V. or movies	1	2	4	1	2	5	2	2	5	2
E Answers were from sentences	5	4	3	2	3	5	5	4	2	3
F Thought a lot to answer some questions	3	3	4	5	3	5	2	4	5	1
G Used two sentences in passage to answer some questions	4	2	3	1	2	5	2	2	1	2
H Sure about answers	3	3	3	3	4	5	4	2	5	3
I Answers came from what had been seen	4	4	3	3	3	5	3	2	5	4
J Answers just came to mind	4	4	4	3	4	1	4	4	5	5
K Re-read passage to answer some questions	1	2	4	1	4	1	4	2	3	2

Appendix 11 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Statement										
L Guessed some answers	4	4	4	1	3	5	2	3	5	4
M Already knew facts to answer questions	4	2	3	3	2	5	4	2	1	3
N Not know how got the answers	3	3	3	1	4	1	4	2	5	2

APPENDIX 12

**RATINGS OF QUESTION-ANSWERING STRATEGY STATEMENTS
AFTER HAVING ANSWERED QUESTIONS ON THE INSECTS TEXT**

Group 1

**Answered questions on the Insects text
in the seventh session**

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Statement										
A Understood meaning of questions	3	2	5	4	3	4	3	4	4	4
B Answers were about things told by teacher or parents	4	4	5	4	3	3	4	4	5	4
C Answers from remembering what had been read	4	5	5	4	4	4	2	4	4	4
D Got ideas for answers from T.V. or movies	1	1	5	4	3	3	2	4	5	2
E Answers were from sentences	2	4	5	4	4	4	4	4	4	4
F Thought a lot to answer some questions	4	3	5	4	3	4	4	2	5	2
G Used two sentences in passage to answer some questions	3	2	5	2	3	4	2	2	4	2
H Sure about answers	3	5	2	3	4	4	2	2	4	2
I Answers came from what had been seen	4	1	5	4	4	3	2	4	5	2
J Answers just came to mind	1	2	5	2	4	3	4	2	4	4
K Re-read passage to answer some questions	3	4	1	2	3	4	2	2	5	2

Appendix 12 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Statement										
L Guessed some answers	2	4	1	2	4	4	4	2	4	2
M Already knew facts to answer questions	1	2	1	2	2	4	2	2	5	2
N Not know how got the answers	3	4	1	2	4	3	4	2	3	2

Appendix 12 (Continued)

Group 2

Answered questions on the Insects text in the sixth session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Statement										
A Understood meaning of questions	5	4	4	5	3	5	3	4	5	5
B Answers were about things told by teacher or parents	3	2	4	5	2	5	2	3	5	4
C Answers from remembering what had been read	5	4	4	3	4	5	4	5	5	2
D Got ideas for answers from T.V. or movies	3	2	4	1	5	5	3	2	5	1
E Answers were from sentences	3	5	3	3	4	5	4	4	5	2
F Thought a lot to answer some questions	4	2	4	3	5	5	4	3	5	5
G Used two sentences in passage to answer some questions	4	3	3	1	2	1	2	2	5	2
H Sure about answers	3	2	4	4	4	5	4	3	5	3
I Answers came from what had been seen	1	4	3	5	3	5	5	4	5	2
J Answers just came to mind	4	4	4	2	2	1	5	3	5	4
K Re-read passage to answer some questions	2	3	4	1	4	5	2	2	3	3

Appendix 12 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Statement										
L Guessed some answers	5	4	4	3	3	4	3	1	5	5
M Already knew facts to answer questions	3	2	3	3	3	4	1	4	5	4
N Not know how got the answers	3	2	3	3	3	3	2	2	1	2

APPENDIX 13

CATEGORIES OF READING AND QUESTION-ANSWERING STRATEGIES

@ indicates that it is a reading strategy only.

* indicates that it is a question-answering strategy only.

A. Explanation of Text or Question

- A1. Paraphrasing--paraphrasing or changing a few words without changing the meaning of the text or of the question.

Example from Insects Sentence 6.

Text: Grasshoppers hatch from eggs, and look like their parents when they are born.

Student #14: "...and they look like their parents."

Example from Insects Question 6.

Question: How is an insect helpful to people?

Student #23: "Some insects are helpful to people in ..."

- A2. Quoting--quoting or using words of the text or of the question.

Example from Whales Sentence 15.

Text: Almost all of the whale is used.

Student #27: "Almost all of the whale is used."

Example from Whales Question 9.

Question: Why do you think some sailors are afraid of whales?

Student #22: "Um, some sailors are, um, afraid of whales..."

B. Interpretation of text or question

B3. Changing mind--changing one's mind.

Example from Insects Sentence 2.

Text: Insects hatch from eggs.

Student #16: "...or years, or months after they make a cocoon..."

Example from Insects Question 9.

Question: Why do you think there are more insects than any other kind of animals?

Student #3: "And the ants lay probably like 30, or 20 eggs a day...."

B4. Comparing--comparing with another thing.

Example from Whales Sentence 2.

Text: Whales are huge animals with small eyes that are good for seeing under water.

Student #21: "M-m...we can hardly see under water."

Example from Insects Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes?

Student #16: "...they are sort of like humans."

B5. Confirming--confirming what one has previously

thought.

Example from Insects Sentence 17.

Text: When winter comes in Canada, one kind of butterfly goes all the way to Mexico.

(Student #25 had said, "It's the one, the can (?), the moth.")

Student #25: "Yah, the moth goes."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

(Student #6 had been asked how he got the answer. He replied that he had thought).

Student #6: "I did, yah."

- B6. Contradicting previous thought--contradicting what one has previously said.

Example from Whales Sentence 16.

Text: Even though whales are very big, they are usually not killers.

(Student #5 had said, "I don't know".)

Student #5: "...but I know...."

Example from Insects Question 5.

Question: How is an insect helpful to people?

(Student #6 had said, "Well I, I know it is,")

Student #6: "...I don't know..."

- B7. Elaborating--elaborating or adding descriptive details.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #3: "...and it's really big and fat."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

Student #2: "...is already grown-up..."

- B8. Expressing misconceptions--stating some things which are misconceptions.

Example from Whales Sentence 11.

Text: When whales are killed, the blubber is used to make many useful things.

Student #8: "...like to make, to make ivory."

Example from Whales Question 4.

Question: What do whales breathe through?

Student #3: "Their gills."

- B9. Expressing suppositions--stating suppositions.

Example from Insects Sentence 5.

Text: Then it grows legs and wings.

Student #23: "If one wing falls off..."

Example from Insects Question 6.

Question: How do insects carry seeds?

Student #26: "So if they carry in the mouth..."

- B10. Generalizing--stating a generalization.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #16: "...because, um, everybody knows...."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #26: "...because everybody use (sic) their eye for seeing."

B11. Giving consequences--stating consequences.

Example from Whales Sentence 10.

Text: Whales that live in icy waters have lots of blubber.

Student #13: "So they can stay warm."

Example from Whales Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes?

Student #9: "....then it would suffocate."

B12. Giving examples--giving instances or examples.

Example from Insects Sentence 16.

Text: A few kinds of insects go south for the winter.

Student #18: "Monarch Butterflies."

Example from Insects Question 5.

Question: How is an insect helpful to people?

Student #18: "And some of them is (sic) called... ladybug."

B13. Making inferences--making inferences or linguistic connections with something previously mentioned.

Example from Insects Sentence 12.

Text: They carry seeds to make fruits and flowers

grow.

Student #14: "....the insect that makes fruits and flowers..."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

Student #5: "Doesn't have legs and wings." (Text did not mention baby bee. Sentence 5 was, "Then it grows legs and wings").

- B14. Providing facts--giving facts or making an accurate statement.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #8: "...and because in (sic), the biggest whale of all is the Blue Whale."

Example from Whales Question 1.

Question: Which is the biggest living animal?

Student #26: "...the Blue Whale is."

- B15. Providing measurement--giving specifics of numbers, dates or time.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #8: "It (the Blue Whale) is at least a hundred feet long."

Example from Insects Question 9.

Question: Why do you think there are more insects than any other kind of animals?

Student #3: "Cause the adult insects sometimes, like, lay up to 1000."

B16. Reasoning--giving reason or cause.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #13: "...because...um, they keep on growing faster."

Example from Whales Question 5.

Question: When is the whale's blowhole closed?

Student #2: "Cause the water could get in their, er, holes."

@ B17. Referring to previous sentences--referring back to previous sentences in the text or to what one has said previously.

Example from Whales Sentence 11.

Text: When whales are killed, the blubber is used to make many useful things.

Student #18: "...like, I said in the last one..."

B18. Stating probable ideas--stating an idea as a probability.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #16: "...or probably even smaller than that."

Example from Whales Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes?

Student #3: "He will probably, might, suffer."

B19. Summarizing--summarizing sometimes in one word what the sentence or answer is about.

Example from Insects Sentence 1.

Text: There are more kinds of insects than any other kind of animals.

Student #14: "I'm thinking about insects."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #21: "Seeing."

B20. Visualizing--making pictures or imaging.

Example from Whales Sentence 14.

Text: Some parts are used to make perfume.

Student #9: "That makes me think of...of a bottle.."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

Student #9: "I pictured a big bee to a little bee."

C. Evaluation of Text or Question

C21. Agreeing--agreeing with the text or question.

Example from Insects Sentence 1.

Text: There are more kinds of insects than any other kind of animals.

Student #8: "Yes, there is (sic) lots of insects."

Example from Insects Question 1.

Question: Why do you think there are more insects than any other kind of animals?

Student #16: "Well, I really think..." (and then he went on, "that the insects that outnumber the, the, the...animals.")

C22 Disagreeing--disagreeing with the text or the question.

Example from Whales Sentence 6.

Text: Whales can stay under water for fifteen minutes, but then they have to come up.

Student #8: "No, a whale could stay under for, like, an hour."

Example from Insects Question 9.

Question: Why do you think there are more insects than any other kind of animals?

Student #26: "I think there are many more animals than insects."

C23. Doubting--expressing doubt about the text or the question.

Example from Insects Sentence 6.

Text: Grasshoppers hatch from eggs, and look like their parents when they are born.

(Student #16 had said, "The parents are way more bigger than a little baby.")

Student #16: "So they don't look exactly like them."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #5: "...like they don't use their eyes for seeing that much."

- C24. Expressing personal reactions--giving one's personal reaction.

Example from Whales Sentence 13.

Text: The meat is good to eat.

Student #21: "I don't like whale, whale meat."

Example from Whales Question 9.

Question: Why do you think some sailors are afraid of whales?

(Student #2 had given her reasons, but added that she thought whales did not do things like jump up on boats and then spoke of her experiences at the Stanley Park aquarium).

Student #2: "And it is so much fun."

- * C25. Judging quality--judging that an answer is good or not.

Example from Whales Question 7.

Question: Why do whales in icy waters have lots of blubber?

Student #2: "...that maybe that was a good answer."

- @ C26. Judging truth--judging that something is true or not.

Example from Insects Sentence 5.

Text: Then it grows legs and wings.

Student #5: "That's true..." (and then added, "A bee grows legs and wings.")

- @ C27. Questioning--projecting or asking questions about the

text.

Example from Insects Sentence 8.

Text: Many people think that spiders are insects.

Student #10: "...why people think " (and then added,
" that the spiders are insects?")

D. Monitoring of One's Understanding

- @ D28. Decoding difficult--stating that one has difficulty decoding a word.

Example from Whales Sentence 17.

Text: Whales live and play in groups, and they do not fight among themselves.

Student #7: "I don't understand that one. This one, the "t"..." (pointed at "themselves")."

- * D29. Task not difficult--commenting that the task is not difficult.

Example from Whales Question 6.

Question: Which part of the whale is used to make paint and soap.

(Student #10 had said that the answer could be obtained from the text but did not wish to look back in the paper. The researcher then asked if it was too hard to find it).

Student #10: "No."

- D30. Text/Question difficult--commenting that the text or question is difficult.

Example from Whales Sentence 1.

Text: Even though whales are very big, they are usually not killers.

Student #1: "The whole sentence is hard."

Example from Whales Question 7.

Question: Why do people in icy waters have lots of blubber.

Student #2: "Ooh, that's tough."

- D31. Text/Question not understood--remarking that one has not understood the text or the question.

Example from Whales Sentence 9.

Text: Whales have fat called blubber.

Student #23: "I don't understand."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #5: "I don't really get it."

- @ D32. Text understood--commenting that one has understood the text.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #5: "...I get that..."

E. Attempts to Understand Text or to Answer Question

- @ E33. Ask someone--asks help from the researcher or states that one would ask for help.

Example from Insects Sentence 6.

Text: Grasshoppers hatch from eggs, and look like their parents when they are born.

Student #15: (Before he read "Grasshoppers" he asked the researcher what it was).

- * E34. Question repeated--asks researcher to repeat the question.

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

Student #6: "Can you say that please..." (then added that he had forgotten).

- E35. Re-read-- re-reads text.

Example from Whales Sentence 2.

Text: Whale are huge animals with small eyes that are good for seeing under water.

(Student #16 said he didn't know that whales had small eyes).

Student #16: "Um." (Read sentence again, adding "very" before "good").

Example from Whales Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes?

Student #14: "Just read a little bit...." (when she was asked how she got the answer.)

- * E36. Re-read text (paragraph format)--re-read text which was in the paragraph format.

Example from Whales Question 6.

Question: Which part of the whale is used to make paint and soap?

Student #14: (Looked at paper with paragraphs, then answered the question).

- @ E37. Skip sentence--states that one would skip the sentence.

Example from Whales Sentence 9.

Text: Whales have fat called blubber.

(Student #23 had said he didn't understand this sentence, and the researcher asked him what he would do if didn't understand something).

Student #23: "Er...skip."

- @ E38. Think--states that one would think or think hard.

Example from Whales Sentence 8.

Text: The holes are open only when the whales come up.

(Student #7 had said she didn't know that one. The researcher asked how could she help herself).

Student #7: "Thinking."

F. Comments on Strategies

- F39. Getting the answer--stating that one got the answer.

Example from Insects Sentence 2.

Text: Insects hatch from eggs.

Student #5: "And I, er, got that out of a book from my teacher."

Example from Insects Question 1.

Question: In which parts of the world do insects live?

Student #2: "And I got that from the paper."

F40. Guessing--saying that one guesses.

Example from Whales Sentence 13.

Text: The meat is good to eat.

(Student #5 had commented that she didn't think so. Then she told how she got that thought).

Student #5: "I guessed."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

(The researcher asked Student #7 how she got the answer).

#7: "Um, um, I guessed..."

F41. Knowing--stating that one knows something.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #16: "I know that."

Example from Whales Question 5.

Question: When is the whale's blowhole closed?

(The researcher asked Student #8 how he got the answer).

Student #8: "It...I...know."

@ F42. Not able to answer--stating that one can't answer.

Example from Whales Sentence 13.

Text: The meat is good to eat.

(The researcher had asked Student #5 why she said she guessed that she thought the meat was not good to eat. She replied that she didn't know if the meat was good to eat or not)

Student #5: "I can't answer that question."

- * F43. Not able to find the answer--saying that one can't find the answer in the text.

Example from Insects Question 6.

Question: How do insects carry seeds?

(Student #14 looked for the answer in the text).

Student #14: "It doesn't say anything in the paper."

- F44. Not able to think--stating that one can't think or that one does not have a thought.

Example from Insects Sentence 18.

Text: Nobody knows how they find their way back each year.

Student #21: "M-m, not thinking about anything."

Example from Insects Question 9.

Question: Why do you think there are more insects than any other kind of animals?

(Student #8 had said that he was trying to think of an answer).

Student #18: "But I couldn't find it."

- F45. Not knowing--expressing one's lack of knowledge.

Example from Insects Sentence 4.

Text: A bee is an insect that looks like a worm when

it hatches.

Student #6: "But, like, I don't know that too much."

Example from Insects Question 1.

Question: In which parts of the world do insects live?

Student #10: "I don't know."

F46. Not remembering--saying that one can't remember or that one forgot.

Example from Insects Sentence 16.

Text: A few insects go south for the winter.

Student #6: "...I just forget."

Example from Insects Question 5.

Question: How is an insect helpful to people?

Student #6: "...I forget..." (and added "how they carry them.")

F47. Not sure--saying that one is not sure.

Example from Whales Sentence 2.

Text: Whales are huge animals with small eyes that are good for seeing under water.

Student #2: "Um, well, I'm not quite sure about that one..."

Example from Whales Question 9.

Question: Why do you think some sailors are afraid of whales?

(Student #5 had given her answer, and then she said she had guessed).

Student #5: "...that might be true, that might not."

F48. Not willing to try--saying "No" when asked if one would like to try.

Example from Whales Sentence 8.

Text: The holes are open only when the whales come up.

(Student #7 had said she didn't know that one and was asked how she would help herself and if she would like to try).

Student #7: "No."

Example from Insects Question 6.

Question: How do insects carry seeds?

(Student #1 had said she didn't know the answer, and was asked if she would like to try).

Student #1: "No."

F49. Remembering--saying that one remembers.

Example from Insects Sentence 17.

Text: When winter comes in Canada, one kind of butterfly goes all the way to Mexico.

Student #6: "...because the, um, that on the piece of paper (?) and I remembered." (#6 later explained that he had remembered from the *Prior Knowledge Test* that one of the choices was Mexico).

Example from Insects Question 2.

Question: How many legs and how many body parts does an insect have?

Student #8: "I remembered it" (when asked how he got the answer).

F50. Thinking--stating that one is thinking.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #9: "That made me think of...one of those big Blue Whales."

Example from Whales Question 8.

Question: Why do you think a whale cries when another whale dies.

Student #13: "Think." (when he was asked how he got the answer).

F51. Trying--expressing one's willingness to try.

Example from Insects Sentence 10.

Text: Some kinds of insects eat farmers' crops, and others carry sickness.

(Student #13 had said the sentence was too hard, and that he would have to think to help himself. The researcher asked if would like to try to think).

Student #13: "Okay."

Example from Insects Question 4.

Question: How is the baby bee different from the adult bee?

(Student #10 had said she could get the answer by looking at the paper. The researcher asked if she would like to try to look at the paper).

Student #10: "Okay."

G. Comments on Sources of Knowledge or of Answers

- * G52. Answer--refers to "answer".

Example from Insects Question 2.

Question: How many legs and how many body parts does a spider have?

(Student #8 had said he remembered the answer. The researcher asked where he remembered it).

Student #8: "The answer."

- G53. Book--states that one has read a book.

Example from Whales Sentence 17.

Text: Whales live and play in groups, and they do not fight among themselves.

(Student #6 had said he had seen on paper what the whales did. The researcher asked where he had seen this).

Student #6: "In books and stuff."

Example from Whales Question 1.

Question: Which is the biggest living animal?

(Student #1 was asked where she got the answer).

Student #1: "I looked in books."

- G54. Experience--refers to one's experience.

Example from Insects Sentence 6.

Text: Grasshoppers hatch from eggs, and look like their parents when they are born.

Student #5: "And I got that at Science World..."

Example from Insects Question 1.

Question: In which parts of the world do insects live?

(Student #6 was asked how he got the answer).

Student #6: "And I go to U. S. A. and things...."

G55. Film--states that one has seen a movie or a film show.

Example from Insects Sentence 13.

Text: Bees make honey and wax.

Student #16: "Once I saw a movie...."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

(Student #15 was asked how he got the answer).

Student #15: "I saw the movie."

G56. Hearing--says that one has heard something with no mention of who told it.

Example from Whales Sentence 13.

Text: The meat is good to eat.

(Student #6 had said the meat was good to eat).

Student #6: "I heard."

Example from Whales Question 9.

Question: Why do you think some sailors are afraid of whales?

(Student #6 told how he got his answer).

Student #6: "I heard..." (And he said that he had heard of a whale tipping a boat over).

G57. Learned from school--states that one has learned

from a teacher or one has learned it in a certain Grade.

Example from Insects Sentence 1.

Text: There are more kinds of insects than any other kind of animals.

Student #25: "And I studied about in my Grade Two class."

Example from Insects Question 9.

Question: Why do you think there are more insects than any other kind of animals?

Student #3: "And er, and, er, she (the Grade Two teacher) told us..." (and then he recounted what he had learned).

- * G58. Mind--says that one got the answer from one's mind, or brain, or one's head.

Example from Insects Question 6.

Question: How do insects carry seeds?

Student #27: "I just think from my brain..."

- * G59. Myself--states that the answer came from "myself".

Example from Whales Question 7.

Question: Why do whales in icy waters have lots of blubber?

(Student #18 was asked how he got the answer).

Student #18: "From myself."

- @ G60. Not having experienced--says that one has not experienced something.

Example from Insects Sentence 17.

Text: When winter comes in Canada, one kind of butterfly goes all the way to Mexico.

(Student #16 said that Mexico was a hot country).

Student #16: "I've never been to it."

- @ G61. Not having learned--says that one has not learned something.

Example from Whales Sentence 2.

Text: Whales are huge animals with small eyes that are good for seeing under water.

(Student #2 said she was not sure about that).

Student #2: "...because we haven't learned that."

- @ G62. Not having read--states that one has not read.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

(Student #25 said he was not sure).

Student #25: "...because, um, I haven't read about whales or anything yet."

- G63. Not having seen--says that one has not seen something.

Example from Whales Sentence 1.

Text: The biggest animal on land or sea is the whale.

Student #16: "I never saw a Blue Whale."

Example from Insects Question 1.

Question: In which parts of the world do insects live?

Student #3: "But I've never seen any insect live in the North Pole."

G64. People--mentions that one has been told something by a person who is not a teacher.

Example from Whales Sentence 9.

Text: Whales have fat called blubber.

(Student #5 had said she got her thought from having gone to the Stanley Park aquarium).

Student #5: "The lady who took care of the whales told me."

Example from Whales Question 4.

Question: What do whales breathe through?

(Student #1 was asked how she got the answer).

Student #1: " My dad told me."

* G65. Previous Answer--refers to a previous answer.

Example from Insects Question 5.

Question: How is an insect helpful to people?

(Student #9 was asked how she got the answer).

Student #9: "Because the last answer is a bee."

* G66. Questions--refers to "questions".

Example from Whales Question 6.

Question: Which part of the whale is used to make paint and soap?

(Student #8 was asked how he got the answer).

Student #8: "Looked at the questions."

* G67. Quoting as proof--quotes from sentences or refers to the number of the sentence as support of one's answer.

Example from Whales Question 6.

Question: Which part of the whale is used to make paint and soap?

(Student #5 said she got the answer from one of the sentences, and that sentences 11 and 12 went together).

Student #5: (Read sentences 11 and 12 out loud).

G68. Reading--refers to the act of reading.

Example from Whales Sentence 3.

Text: Whales seem to be fishes, but they are mammals.

Student #5: "I have read that".

Example from Whales Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes.

(Student #15 was asked how he got the answer).

Student #15: " I read it."

* G69. Re-reading--says that one has re-read.

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

(Student #14 was asked how she got the answer).

Student #14: "Um, I looked back on the paper."

G70. Seeing--states that one has seen something.

Example from Insects Sentence 1.

Text: There are more kinds of insects than any other kind of animals.

(Student #25 said he agreed with the sentence).

Student #25: "...because I've seen it."

Example from Whales Question 9.

Question: Why do you think some sailors are afraid of whales?

(Student #9 was asked how she got the answer).

Student #9: "Um, because I've seen a couple of um men being afraid of whales."

G71. Television--says that one has watched a T. V. show.

Example from Whales Sentence 16.

Text: Even though whales are very big, they are usually not killers.

Student #25: "...like, I've seen on T. V."

Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #6: "...and I knew from watching T. V..."

* G72. Text--says that one got the answer from "the paper" and no mention is made of the format of the text.

Example from Whales Question 6.

Question: Which part of the whale is used to make paint and soap?

(Student #15 said he got the answer from reading. He was asked where he read it).

Student #15: "On the paper."

* G73. Text (Paragraph format)--states that one got the answer from the text in the paragraph format.

Example from Insects Question 2.

Question: How many legs and how many body parts does an insect have?

(Student #10 was asked how she got the answer).

Student #10: "This paper right next to me." (Pointed at paper with paragraphs).

- * G74. Text (Sentence Format)--says that one got the answer from the text in the numbered sentence format. Example from Whales Question 2.

Question: What are the eyes of the whale good for?

Student #22: "Um, I got the answer by reading this paper." (Pointed at papers with sentences).

H. Miscellaneous

- H75. Incomplete--one's thought is not complete.

Example from Whales Sentence 2.

Text: Whales are huge animals with small eyes that are good for seeing under water.

Student #23: "...and they, they use their.."

Example from Whales Question 3.

Question: Why can the whale not stay under water for more than fifteen minutes?

Student #16: "And they, so they um, er, get, um..."

- @ H76. Loss of place--loses one's place while reading and skips a sentence or sentences.

Example from Insects Sentence 17.

Text: When winter comes in Canada, one kind of butterfly goes all the way to Mexico.

Student #10: (Read a few words). "No, I did that."

- H77. Relating with the researcher--relates to such things

as the researcher's request to be louder or saying that one is finished.

Example from Insects Sentence 6.

Text: Grasshoppers hatch from eggs, and look like their parents when they are born.

(Student #3 had Thought-Out-Loud and at the end he said these words).

Student #3: "and...that's it."

Example from Insects Question 5.

Question: How is an insect helpful to people?

(Student #6 was asked not to lower his voice).

Student #6: "Okay."

APPENDIX 14

FREQUENCY COUNTS OF READING STRATEGIES
USED WHILE READING THE WHALES TEXT

Group 1

Read Whales text in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	20	10	14	0	2	0	4	8	6
A 2 Quoting	0	4	3	4	0	0	1	1	2	2
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	0	2	1	0	6	11	0	4	0
B 5 Confirming	0	0	0	0	1	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	1	18	19	7	5	5	2	0	5	7
B 8 Expressing misconceptions	0	8	3	4	4	5	0	3	8	0
B 9 Expressing suppositions	0	1	1	1	7	3	0	0	1	1
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	1	1	4	5	6	1	0	1	4	2
B12 Giving examples	0	0	0	0	0	2	0	0	0	1
B13 Making inferences	0	4	4	3	1	2	1	5	4	9
B14 Providing facts	0	12	15	2	4	15	0	1	10	3
B15 Providing measurement	0	0	0	0	0	2	0	0	1	0
B16 Reasoning	4	13	10	9	0	5	0	2	3	3
B17 Referring to previous sentences	0	1	0	3	1	0	0	0	0	0

Appendix 14 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
B18 Stating probability	0	6	2	3	0	0	0	0	0	1
B19 Summarizing	0	0	0	1	1	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	2
C. Evaluation Category										
C21 Agreeing	0	5	1	37	0	18	0	0	0	13
C22 Disagreeing	0	2	0	0	0	5	0	0	1	2
C23 Doubting	0	1	0	1	0	1	0	1	1	1
C24 Expressing personal reactions	0	5	0	1	0	1	1	0	0	0
C26 Judging truth	0	0	0	0	0	3	0	0	0	0
C27 Questioning	0	0	0	0	0	0	0	27	0	0
D. Monitoring Of Understanding Category										
D28 Decoding difficult	0	0	0	0	1	0	0	0	0	0
D30 Text difficult	2	0	0	0	0	0	0	0	0	0
D31 Text not understood	1	0	0	0	1	0	0	0	6	0
D32 Text understood	0	0	0	0	0	0	0	0	0	0
E. Attempts To Understand Category										
E33 Ask someone	0	0	0	0	1	0	0	0	0	0
E35 Re-read	0	0	1	1	0	0	1	0	1	0
E37 Skip sentence	0	0	0	0	0	0	0	0	2	0
E38 Think	0	0	0	0	2	0	0	0	0	0
F. Comments on Strategies Category										
F39 Getting the answer	0	1	0	0	0	0	0	0	0	0
F40 Guessing	0	0	0	0	0	0	0	0	0	0
F41 Knowing	0	5	0	0	0	3	0	0	0	0
F42 Not able to answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	1	0	0	2	0	7	0	0	0

Appendix 14 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
F45 Not knowing	1	2	0	22	7	2	0	1	0	3
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	0	6	1	1	0	0	0	0	0	0
F48 Not willing to try	1	0	0	0	5	0	1	0	0	0
F49 Remembering	0	1	0	0	0	0	0	0	0	0
F50 Thinking	0	12	29	1	2	1	0	20	0	21
F51 Trying	0	1	0	0	0	0	0	0	0	0

G. Comments On Sources of Knowledge Category

G53 Book	0	0	0	1	0	0	0	0	0	0
G54 Experience	0	2	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	1	0	0	0	0	0	0
G57 Learned from school	0	3	0	0	0	0	0	0	0	0
G60 Not having experienced	0	0	1	2	0	0	0	0	0	1
G61 Not having learned	0	2	0	0	0	0	0	0	0	0
G62 Not having read	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	2	0	0	0	0	0	0
G70 Seeing	0	0	0	0	0	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0

H. Miscellaneous Category

H75 Incomplete	0	16	9	6	0	9	2	9	14	2
H76 Loss of place	0	0	0	0	0	0	1	0	1	0
H77 Relating with the researcher	2	12	3	9	12	5	2	13	3	5

Appendix 14 (Continued)

Group 2

Read Whales text in the seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	3	2	2	0	11	11	12	3	10	19
A 2 Quoting	2	0	0	0	6	1	2	0	4	4
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	1	2	0	0	1
B 4 Comparing	0	0	0	1	0	0	7	3	1	18
B 5 Confirming	0	0	0	0	0	0	1	3	0	0
B 6 Contradicting previous thought	1	0	0	0	0	0	1	0	0	0
B 7 Elaborating	8	16	0	3	2	4	10	4	14	23
B 8 Expressing misconceptions	2	4	0	4	0	29	8	4	8	14
B 9 Expressing suppositions	2	0	0	0	0	0	18	0	0	5
B10 Generalizing	0	0	0	0	0	0	3	0	0	0
B11 Giving consequences	0	0	0	5	0	0	17	0	2	7
B12 Giving examples	1	3	0	0	1	24	0	0	2	3
B13 Making inferences	4	9	3	2	5	9	7	5	6	7
B14 Providing facts	5	4	0	1	0	1	8	8	6	8
B15 Providing measurement	0	0	0	0	0	0	4	0	2	3
B16 Reasoning	1	4	0	8	0	0	7	3	4	12
B17 Referring to previous sentences	0	1	0	0	0	1	10	4	2	1

Appendix 14 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F44 Not able to think	2	0	0	2	0	0	0	12	0	0
F45 Not knowing	15	0	0	0	0	1	10	6	10	2
F46 Not remembering	1	0	0	0	0	0	0	0	0	0
F47 Not sure	2	1	0	0	0	0	0	1	1	0
F48 Not willing to try	0	0	0	0	1	0	0	0	0	0
F49 Remembering	0	0	0	0	0	0	0	0	0	0
F50 Thinking	0	14	21	0	16	0	8	8	6	0
F51 Trying	0	0	0	0	0	0	0	0	0	0

G. Comments On Sources of Knowledge Category

G53 Book	1	0	0	0	0	0	0	0	0	0
G54 Experience	2	1	0	0	0	0	1	0	1	0
G55 Film	0	0	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	0	0	0	1	0	0	0
G57 Learned from school	0	0	0	0	0	0	0	0	3	0
G60 Not having experienced	0	0	0	0	0	0	1	2	1	0
G61 Not having learned	0	0	0	0	0	0	0	0	0	0
G62 Not having read	0	0	0	0	0	0	0	0	1	0
G63 Not having seen	0	0	0	0	0	0	1	0	0	0
G64 People	1	0	0	0	0	0	3	0	2	0
G68 Reading	1	0	0	0	0	0	0	0	1	0
G70 Seeing	0	0	0	0	1	0	0	0	2	0
G71 Television	0	0	0	0	0	0	0	0	1	0

H. Miscellaneous Category

H75 Incomplete	16	5	2	4	2	4	21	8	11	26
H76 Loss of place	0	0	0	0	0	0	0	0	0	1
H77 Relating with the researcher	30	6	8	3	7	27	4	9	5	6

APPENDIX 15

FREQUENCY COUNTS OF READING STRATEGIES
USED WHILE READING THE INSECTS TEXT

Group 1

Read Insects text in the seventh session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	7	20	23	4	5	0	4	14	11
A 2 Quoting	0	3	5	0	0	1	0	5	3	2
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	1	1	0	0	0	0	0	2
B 4 Comparing	0	5	4	1	0	1	5	0	6	1
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	1	0	0	0	0	0	0
B 7 Elaborating	1	21	34	37	16	19	2	0	22	4
B 8 Expressing misconceptions	0	11	9	2	4	10	0	0	14	6
B 9 Expressing suppositions	0	1	13	1	0	3	0	0	4	0
B10 Generalizing	0	0	0	1	0	0	0	0	0	1
B11 Giving consequences	0	3	9	1	0	4	1	0	6	1
B12 Giving examples	0	1	3	1	3	5	0	0	2	1
B13 Making inferences	0	0	1	0	1	0	0	4	0	0
B14 Providing facts	2	4	19	1	3	18	1	0	18	10
B15 Providing measurement	0	2	3	2	0	1	0	0	2	0
B16 Reasoning	4	11	14	5	0	2	4	0	4	6
B17 Referring to previous sentences	0	0	0	2	0	0	0	1	0	3

Appendix 15 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
B18 Stating probability	0	6	12	5	0	0	0	0	0	3
B19 Summarizing	0	0	0	0	0	0	1	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
<u>C. Evaluation Category</u>										
C21 Agreeing	0	3	1	30	0	17	0	0	0	7
C22 Disagreeing	0	0	1	5	0	5	0	0	0	14
C23 Doubting	0	0	0	0	0	1	1	0	0	0
C24 Expressing personal reactions	0	0	3	0	1	0	0	0	0	0
C26 Judging truth	0	4	0	0	0	2	0	0	0	0
C27 Questioning	0	0	0	0	0	0	0	24	0	0
<u>D. Monitoring Of Understanding Category</u>										
D28 Decoding difficult	0	0	0	0	0	0	0	0	0	0
D30 Text difficult	0	0	0	0	0	0	0	0	0	0
D31 Text not understood	0	0	0	0	1	0	0	0	0	0
D32 Text understood	0	0	0	0	0	0	0	0	0	0
<u>E. Attempts To Understand Category</u>										
E33 Ask someone	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	0	0	1	0	0	0	0	1	1
E37 Skip sentence	0	0	0	0	0	0	0	0	0	0
E38 Think	0	0	0	0	0	0	1	0	0	0
<u>F. Comments on Strategies Category</u>										
F39 Getting the answer	0	2	0	0	0	0	0	0	0	0
F40 Guessing	0	0	0	0	0	0	0	0	0	0
F41 Knowing	0	6	0	13	0	0	0	0	0	1
F42 Not able to answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	1	1	0	1	1	0	4	0	0	1

Appendix 15 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
F45 Not knowing	11	0	3	15	2	1	4	0	0	3
F46 Not remembering	0	1	0	13	0	0	0	0	0	0
F47 Not sure	0	4	1	10	0	0	0	0	0	0
F48 Not willing to try	0	0	0	0	0	0	0	0	0	0
F49 Remembering	0	0	0	1	0	0	0	0	0	0
F50 Thinking	0	7	43	6	1	0	0	18	0	15
F51 Trying	0	0	0	0	0	0	0	0	0	0

G. Comments On Sources of Knowledge Category

G53 Book	0	2	0	0	0	0	0	0	0	0
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	0	2	0	0	0	0	0	0	0	0
G60 Not having experienced	0	0	0	0	0	0	0	0	0	0
G61 Not having learned	0	0	0	0	0	0	0	0	0	0
G62 Not having read	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	3	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G70 Seeing	0	0	0	0	0	1	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0

H. Miscellaneous Category

H75 Incomplete	0	14	32	25	3	16	0	8	21	4
H76 Loss of place	0	0	0	0	1	1	0	0	0	0
H77 Relating with the researcher	3	3	5	14	9	2	1	1	4	6

Appendix 15 (Continued)

Group 2

Read Insects text in the sixth session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	3	5	5	1	14	6	14	3	9	18
A 2 Quoting	3	0	4	0	1	0	2	0	0	4
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	1	0	0	0	1	3	0	0	5
B 4 Comparing	0	1	0	2	0	5	4	1	0	10
B 5 Confirming	0	0	0	0	0	0	0	0	1	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	5	15	0	5	1	2	51	14	11	72
B 8 Expressing misconceptions	3	10	1	1	1	30	5	2	10	11
B 9 Expressing suppositions	1	0	0	0	0	0	3	0	2	3
B10 Generalizing	0	0	0	0	0	0	0	0	1	1
B11 Giving consequences	0	0	0	2	0	0	2	2	2	8
B12 Giving examples	0	4	0	0	0	9	11	12	7	3
B13 Making inferences	2	1	1	0	5	1	0	2	1	3
B14 Providing facts	8	6	0	4	0	0	30	21	12	15
B15 Providing measurement	1	0	0	0	0	0	1	0	0	2
B16 Reasoning	3	0	0	9	0	0	10	1	3	8
B17 Referring to previous sentences	3	1	0	0	0	0	6	4	1	0

Appendix 15 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F44 Not able to think	0	0	0	1	0	0	1	4	0	0
F45 Not knowing	8	0	0	0	0	6	16	2	3	1
F46 Not remembering	0	0	0	1	0	0	4	3	1	0
F47 Not sure	1	0	0	0	0	0	2	1	3	0
F48 Not trying	0	0	0	0	0	0	0	0	0	0
F49 Remembering	0	0	0	0	0	0	0	0	0	0
F50 Thinking	1	17	24	0	16	0	12	2	3	0
F51 Trying	0	0	0	1	0	0	0	1	0	0

G. Comments On Sources of Knowledge Category

G53 Book	5	0	0	0	0	0	0	0	0	1
G54 Experience	2	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	3	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	1	0	0	0	0	0	0	0	2	0
G60 Not having experienced	0	0	0	0	0	0	1	0	0	0
G61 Not having learned	0	0	0	0	0	0	0	0	0	0
G62 Not having read	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	1	0
G64 People	0	0	0	0	0	0	0	0	0	0
G68 Reading	1	3	0	0	0	0	0	0	0	0
G70 Seeing	3	0	0	0	0	0	0	0	1	0
G71 Television	0	0	0	0	0	0	0	0	0	0

H. Miscellaneous Category

H75 Incomplete	9	6	2	4	1	3	30	12	2	31
H76 Loss of place	0	0	2	0	0	1	0	0	0	0
H77 Relating with the researcher	11	1	11	2	9	15	9	22	2	2

APPENDIX 16

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE WHALES TEXT

Group 1

Answered Textually Explicit questions on the Whales text
in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	1	1	1	1	1	0	2	2	1
A 2 Quoting	2	2	0	1	2	0	1	2	0	1
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	0	2	0	0	0	0	0	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting										
previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	0	7	8	0	0	1	0	0	1	1
B 8 Expressing										
misconceptions	0	0	2	0	0	0	1	0	0	0
B 9 Expressing										
suppositions	0	0	0	0	0	0	0	0	0	0
B10 Generalizing	0	0	0	0	0	0	0	0	0	1
B11 Giving										
consequences	0	0	0	0	0	0	0	0	0	0
B12 Giving										
examples	0	0	0	0	0	0	0	0	0	0
B13 Making										
inferences	0	0	0	0	0	0	0	0	0	1
B14 Providing										
facts	1	0	4	1	0	1	0	0	1	6
B15 Providing										
measurement	0	1	0	0	0	0	0	0	0	0
B16 Reasoning	0	2	2	0	0	0	0	0	1	1

Appendix 16 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	2	0	0	2	0	0	2	0	0
G74 Text (sentence format)	0	0	0	1	0	2	2	1	0	0
<u>H. Miscellaneous Category</u>										
H75 Incomplete	0	0	0	2	0	0	0	0	0	1
H77 Relating with the researcher	0	2	1	0	1	3	0	0	0	0

Appendix 16 (Continued)

Group 2

Answered Textually Explicit questions on the Whales text
in the seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	1	3	1	1	2	1	4	1	0	2
A 2 Quoting	0	1	1	0	0	2	1	2	1	2
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	1	0
B 4 Comparing	0	0	0	0	0	0	1	0	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	2	1	1	0	0	0	2	0	3	0
B 8 Expressing misconceptions	0	0	0	0	1	0	0	0	1	0
B 9 Expressing suppositions	0	0	0	0	0	0	2	0	0	0
B10 Generalizing	3	0	0	0	0	0	0	0	0	0
B11 Giving consequences	0	0	0	0	0	0	1	0	0	0
B12 Giving examples	0	0	0	0	0	0	0	0	0	0
B13 Making inferences	0	0	0	0	0	0	0	0	0	0
B14 Providing facts	0	0	0	1	0	0	2	0	0	0
B15 Providing measurement	0	0	0	0	0	0	0	0	0	0
B16 Reasoning	0	0	0	0	0	0	1	0	0	0

Appendix 16 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
B18 Stating probability	0	0	0	0	0	0	0	0	0	0
B19 Summarizing	0	0	0	1	1	0	0	0	1	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
<u>C. Evaluation Category</u>										
C21 Agreeing	0	0	0	0	0	0	0	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	1	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	0	0	0	0	0	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
<u>D. Monitoring Of Understanding Category</u>										
D29 Task not difficult	0	0	0	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	0	0
D31 Question not understood	1	0	0	0	0	0	0	0	0	0
<u>E. Attempts To Answer Category</u>										
E34 Question repeated	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	0	0	0	0	0	0	0	0	0
E36 Re-read (paragraph format)	0	0	0	0	1	0	0	0	0	0
<u>F. Comments on Strategies Category</u>										
F39 Getting the answer	1	2	0	0	0	0	2	0	1	2
F40 Guessing	0	0	0	0	0	0	0	0	1	0
F41 Knowing	1	0	0	3	0	0	1	0	0	0

Appendix 16 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	0	0	0	0	0	0	0	0	0	0
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	1	0	0	0	0	0	0	0	2	0
F48 Not willing to try	0	0	0	0	0	0	0	0	0	0
F49 Remembering	0	0	0	0	1	0	3	0	0	1
F50 Thinking	0	1	0	0	0	0	2	0	0	0
F51 Trying	0	0	0	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	1	0	3	0	0	0	0	0	0	0
G54 Experience	1	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	1	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	1	0	0	0	0	0	0	0	1	0
G58 Mind	0	0	0	0	1	0	0	0	0	1
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	1	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	1	0	0	0
G66 Questions	0	0	0	0	0	0	2	1	0	1
G67 Quoting as proof	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	0	2	2	0	0	0	0
G69 Re-reading	0	0	1	0	1	0	0	0	0	0
G70 Seeing	0	0	0	0	0	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0
G72 Text	0	0	0	0	0	1	0	5	0	0
G73 Text (paragraph format)	0	0	1	0	1	2	0	0	0	0
G74 Text (sentence format)	0	3	0	0	0	0	3	1	1	2

Appendix 16 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	1	0	0	0	0	1	1	0	0	0
H77 Relating with the researcher	2	0	1	0	0	1	1	0	1	1

APPENDIX 17

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE WHALES TEXT

Group 1

Answered Textually Implicit questions on the Whales text
in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	2	0	0	0	0	0	0	2	0
A 2 Quoting	0	0	0	0	0	0	0	0	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	1	0	0	0	0	0
B 4 Comparing	0	0	0	0	0	4	0	0	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting										
previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	0	4	5	2	0	1	0	0	0	3
B 8 Expressing										
misconceptions	0	0	3	0	0	1	0	0	3	0
B 9 Expressing										
suppositions	0	2	2	0	0	0	0	0	0	1
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving										
consequences	0	2	3	0	0	0	1	0	0	2
B12 Giving										
examples	0	0	0	0	0	0	0	0	0	0
B13 Making										
inferences	1	2	2	2	2	1	2	2	1	2
B14 Providing										
facts	0	0	0	0	0	4	0	0	0	5
B15 Providing										
measurement	0	1	0	0	0	0	0	0	0	0
B16 Reasoning	1	5	6	2	1	2	1	1	1	0

Appendix 17 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2

Strategy

F. Comments on Strategies Category

F39 Getting the answer	0	4	0	3	0	0	0	3	5	0
F40 Guessing	0	0	0	0	0	0	0	0	0	0
F41 Knowing	0	3	0	1	0	1	0	0	0	0
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	1	0	0	1	0	0	0	0	1	0
F46 Not remembering	0	1	0	0	0	0	0	0	0	0
F47 Not sure	0	1	0	0	0	0	0	0	0	0
F48 Not willing to try	2	0	0	0	0	0	0	0	1	0
F49 Remembering	0	1	0	0	0	0	0	0	0	0
F50 Thinking	0	3	3	0	0	1	1	0	0	1
F51 Trying	0	0	0	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	3	0	0	1	0	0	0	0	5	0
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	0	1	0	0	0	0	0	0	0	0
G58 Mind	0	0	0	0	0	0	0	0	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	1	0	0	0	0
G67 Quoting as proof	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	1	0	0	0	0	0	0
G69 Re-reading	0	0	0	0	0	0	0	0	0	0
G70 Seeing	0	0	0	0	0	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0
G72 Text	0	3	0	1	0	0	0	0	0	0

Appendix 17 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	0	0	0	2	0	0	2	0	0
G74 Text (sentence format)	0	0	0	2	2	0	2	1	0	0
<u>H. Miscellaneous Category</u>										
H75 Incomplete	0	1	1	0	0	0	0	0	3	0
H77 Relating with the researcher	0	2	0	1	0	0	1	1	2	0

Appendix 17 (Continued)

Group 2

Answered Textually Implicit Questions on the Whales text
in the seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	0	0	0	1	0	3	0	0	1
A 2 Quoting	0	0	0	0	0	0	0	0	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	0	0	0	0	0	1	0	0	1
B 5 Confirming	0	0	0	0	0	0	1	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	3	0	0	0	3	0	4	0	0	0
B 8 Expressing misconceptions	0	0	0	3	0	1	0	0	0	0
B 9 Expressing suppositions	0	2	0	0	0	0	2	0	1	0
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	2	2	0	1	0	0	3	0	1	0
B12 Giving examples	0	0	0	0	0	0	0	0	0	0
B13 Making inferences	0	2	1	1	2	1	3	2	2	3
B14 Providing facts	1	0	0	0	0	0	2	0	0	1
B15 Providing measurement	0	0	0	0	0	0	1	0	0	0
B16 Reasoning	3	0	1	0	1	1	4	1	0	0

Appendix 17 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
B18 Stating probability	0	0	0	0	0	0	0	0	0	0
B19 Summarizing	0	0	0	0	0	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
C. Evaluation Category										
C21 Agreeing	0	0	0	0	0	0	0	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	0	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	1	0	0	0	0	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
D. Monitoring Of Understanding Category										
D29 Task not difficult	0	0	1	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	1	0
D31 Question not understood	1	0	0	0	0	0	0	0	0	0
E. Attempts To Answer Category										
E34 Question repeated	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	1	0	0	0	0	1	0	0	0
E36 Re-read (paragraph format)	0	0	1	0	2	0	0	0	0	0
F. Comments on Strategies Category										
F39 Getting the answer	3	0	0	0	0	0	4	0	2	3
F40 Guessing	0	1	0	0	0	0	0	0	0	0
F41 Knowing	0	0	0	3	0	0	1	0	0	0

Appendix 17 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F43 Not able to find answer	0	0	1	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	1	0	1	0	0	0	0	0	0	0
F46 Not remembering	1	0	1	0	0	0	3	0	0	0
F47 Not sure	0	0	0	0	0	0	2	0	0	0
F48 Not willing to try	0	0	0	0	0	0	0	0	0	0
F49 Remembering	0	0	0	0	1	0	5	0	0	0
F50 Thinking	0	2	0	0	0	0	1	0	1	0
F51 Trying	0	0	1	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	1	0	0	0
G53 Book	0	0	0	0	0	1	0	0	1	1
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	1	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	0	0	0	0	0	0	0	0	0	0
G58 Mind	0	0	0	0	0	0	0	0	0	1
G59 Myself	0	0	0	0	0	0	0	2	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	1	0	0	0	0	0	2	0	0	0
G67 Quoting as proof	3	0	0	0	1	0	1	0	0	0
G68 Reading	0	0	0	0	1	2	1	0	0	0
G69 Re-reading	2	0	0	0	1	0	3	0	0	0
G70 Seeing	0	0	0	0	0	0	0	0	0	0
G71 Television	0	0	1	0	0	0	0	0	0	0
G72 Text	0	0	0	0	1	1	1	2	0	0
G73 Text (paragraph format)	0	0	2	0	1	0	0	0	0	1
G74 Text (sentence format)	2	1	0	0	1	0	2	0	2	0

Appendix 17 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	1	0	1	0	0	0	3	0	1	0
H77 Relating with the researcher	2	0	3	0	1	2	3	1	1	0

APPENDIX 18

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE WHALES TEXT

Group 1

Answered Scriptally Implicit questions on the Whales text
in the sixth session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	1	1	4	2	0	0	0	3	0	1
A 2 Quoting	0	2	0	0	0	0	0	1	1	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	0	0	0	0	0	0	0	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	1	12	12	2	0	10	2	2	4	4
B 8 Expressing misconceptions	0	0	0	0	0	0	0	0	0	0
B 9 Expressing suppositions	0	0	0	0	1	1	0	0	1	1
B10 Generalizing	0	0	0	1	0	0	0	0	0	0
B11 Giving consequences	0	1	0	0	1	2	1	0	1	2
B12 Giving examples	0	0	0	0	0	0	0	0	0	0
B13 Making inferences	0	0	0	0	0	0	0	0	0	0
B14 Providing facts	0	0	0	1	0	0	0	0	0	1
B15 Providing measurement	0	1	0	0	0	1	0	0	0	0
B16 Reasoning	4	5	7	5	2	4	0	1	4	3

Appendix 18 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2

Strategy

F. Comments on Strategies Category

F39 Getting the answer	0	3	0	3	0	0	0	2	1	0
F40 Guessing	0	0	0	1	2	0	0	0	0	0
F41 Knowing	0	0	0	0	0	1	0	0	0	0
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	2	0	0
F45 Not knowing	0	0	0	0	0	1	2	1	0	0
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	0	0	0	0	0	0	0	0	0	0
F48 Not willing to try	0	0	0	0	0	0	1	0	1	0
F49 Remembering	0	3	0	0	0	0	0	0	0	0
F50 Thinking	0	5	4	0	0	2	2	0	0	0
F51 Trying	0	0	0	0	0	0	0	3	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	2	0	0	1	0	0	0	2	3	0
G54 Experience	0	5	0	0	0	2	0	0	0	0
G55 Film	0	0	0	0	0	2	0	0	0	0
G56 Hearing	0	0	0	1	0	0	0	0	0	0
G57 Learned from school	1	1	0	0	0	0	0	0	0	0
G58 Mind	0	0	0	0	1	0	0	0	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	0	0	0	0
G67 Quoting as proof	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G69 Re-reading	0	0	0	0	0	0	0	0	0	0
G70 Seeing	0	0	0	0	0	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0
G72 Text	0	1	0	0	0	0	0	0	0	0

Appendix 18 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	0	0	0	0	0	0	0	0	0
G74 Text (sentence format)	0	0	0	0	0	0	0	1	0	0
<u>H. Miscellaneous Category</u>										
H75 Incomplete	0	2	2	0	2	3	1	2	4	3
H77 Relating with the researcher	2	1	3	0	0	1	0	1	1	1

Appendix 18 (Continued)

Group 2

Answered Scriptally Implicit questions on the Whales text
in the seventh session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	0	1	2	0	0	3	1	0	2
A 2 Quoting	0	2	0	0	0	0	1	0	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	0	0	0	0	0	0	0	2	3
B 5 Confirming	1	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	3	1	1	0	0	1	13	2	6	4
B 8 Expressing misconceptions	0	1	0	0	0	0	1	0	0	2
B 9 Expressing suppositions	2	2	0	0	0	0	6	0	1	1
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	2	2	0	1	0	0	1	1	1	1
B12 Giving examples	0	0	0	0	0	0	0	0	0	0
B13 Making inferences	0	0	0	0	0	0	0	0	0	0
B14 Providing facts	0	0	0	0	0	0	3	1	0	4
B15 Providing measurement	0	0	0	0	0	0	0	0	0	1
B16 Reasoning	3	2	3	1	0	1	2	2	4	5

Appendix 18 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
B18 Stating probability	3	1	0	1	3	1	7	0	0	1
B19 Summarizing	0	0	0	0	0	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
C. Evaluation Category										
C21 Agreeing	0	0	0	0	0	0	0	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	2	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	0	0	0	0	2	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
D. Monitoring Of Understanding Category										
D29 Task not difficult	0	0	0	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	0	0
D31 Question not understood	2	0	0	0	0	0	0	0	0	0
E. Attempts To Answer Category										
E34 Question repeated	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	0	0	0	1	0	0	0	0	0
E36 Re-read (paragraph format)	0	0	0	0	1	0	0	0	0	0
F. Comments on Strategies Category										
F39 Getting the answer	0	0	0	0	0	0	4	0	3	3
F40 Guessing	1	1	0	0	0	0	0	0	3	1
F41 Knowing	0	0	0	2	0	1	1	0	1	0

Appendix 18 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	2	0	0	0	0	2	3	3	1	6
H77 Relating with the researcher	5	2	4	3	2	3	12	3	1	2

APPENDIX 19

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
ON THE INSECTS TEXT

Group 1

Answered Textually Explicit questions on the Insects text
in the seventh session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	2	5	2	0	3	1	2	1	3
A 2 Quoting	2	1	0	1	1	0	1	0	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	1	0	1	0	0	0
B 4 Comparing	0	0	3	0	0	0	0	0	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	0	0	6	2	0	1	1	0	1	0
B 8 Expressing misconceptions	0	0	6	2	3	0	1	1	3	2
B 9 Expressing suppositions	0	0	1	0	0	0	0	0	0	0
B10 Generalizing	0	0	1	0	0	0	0	0	0	0
B11 Giving consequences	0	0	1	0	0	0	0	0	0	0
B12 Giving examples	0	0	1	3	0	2	0	0	0	0
B13 Making inferences	0	0	0	0	0	0	0	0	0	0
B14 Providing facts	0	0	4	0	0	0	1	0	0	1
B15 Providing measurement	0	0	2	0	1	1	2	0	0	0
B16 Reasoning	0	0	0	2	0	0	0	0	0	0

Appendix 19 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2

Strategy

F. Comments on Strategies Category

F39 Getting the answer	0	4	0	2	0	0	0	1	3	0
F40 Guessing	0	0	0	0	2	0	0	0	0	0
F41 Knowing	0	1	0	1	0	0	0	0	0	1
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	1	0	0	1	0	0	0	0	0	0
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	0	0	0	0	1	0	0	0	0	0
F48 Not willing to try	1	0	0	0	2	0	0	0	0	0
F49 Remembering	0	0	0	2	0	1	0	0	0	0
F50 Thinking	0	0	0	0	1	3	2	0	0	5
F51 Trying	0	0	6	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	1	0	0	0	0
G53 Book	2	0	0	0	0	0	0	0	3	0
G54 Experience	0	0	0	1	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	1	1	0	1	0	0	1	0	0	0
G58 Mind	0	0	0	0	0	0	0	0	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	1	0	0	0	0	0	0	0
G64 People	0	0	0	1	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	0	0	0	0
G67 Quoting as proof	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G69 Re-reading	0	0	0	0	1	0	0	0	0	0
G70 Seeing	0	0	0	2	0	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	0	0	0
G72 Text	0	3	0	1	0	0	0	0	0	0

Appendix 19 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	1	0	0	2	0	0	3	0	0
G74 Text (sentence format)	0	1	0	0	0	0	0	0	0	0
H. Miscellaneous Category										
H75 Incomplete	0	0	8	2	0	0	0	0	0	1
H77 Relating with the researcher	0	0	2	2	3	2	0	0	2	5

Appendix 19 (Continued)

Group 2

**Answered Textually Explicit questions on the Insects text
in the sixth session**

[illegible]

Appendix 19 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
B18 Stating probability	0	0	0	0	0	0	6	0	0	0
B19 Summarizing	0	0	0	0	0	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
<u>C. Evaluation Category</u>										
C21 Agreeing	0	0	0	0	0	0	0	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	1	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	0	0	0	0	0	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
<u>D. Monitoring Of Understanding Category</u>										
D29 Task not difficult	0	0	0	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	0	0
D31 Question not understood	0	0	0	0	0	0	0	0	0	0
<u>E. Attempts To Answer Category</u>										
E34 Question repeated	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	0	0	0	0	0	0	0	0	0
E36 Re-read (paragraph format)	0	0	0	0	2	0	0	0	0	0
<u>F. Comments on Strategies Category</u>										
F39 Getting the answer	3	0	0	0	1	0	4	2	1	3
F40 Guessing	1	0	0	0	0	0	0	0	0	0
F41 Knowing	0	0	0	2	0	0	0	0	1	1

Appendix 19 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	2	0	1	0	0	0	0	0	0	0
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	0	0	2	0	1	2	0	0	0	0
F48 Not willing to try	0	0	2	0	0	0	0	0	0	0
F49 Remembering	0	0	0	0	0	0	3	0	0	1
F50 Thinking	1	0	0	1	1	0	4	1	0	0
F51 Trying	0	0	0	0	2	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	1	0	2	0	0	1	0	0	2	0
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	1	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	0	0	0	0	0	0	0	0	1	0
G58 Mind	0	0	0	0	0	0	0	0	0	1
G59 Myself	0	0	0	0	0	0	0	1	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	0	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	1	0	0	1
G67 Quoting as proof	0	0	0	0	0	0	2	0	0	0
G68 Reading	0	0	0	0	0	1	0	0	0	0
G69 Re-reading	0	0	2	0	2	0	0	0	0	0
G70 Seeing	1	2	0	0	0	1	0	0	0	0
G71 Television	0	0	2	0	0	0	0	0	0	0
G72 Text	0	1	0	0	0	0	0	2	0	1
G73 Text (paragraph format)	0	3	2	0	0	0	0	0	0	1
G74 Text (sentence format)	0	0	0	0	0	0	2	0	1	1

Appendix 19 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	0	0	0	0	1	1	4	0	1	1
H77 Relating with the researcher	1	1	2	1	3	0	0	1	3	0

APPENDIX 20

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
ON THE INSECTS TEXT

Group 1

Answered Textually Implicit questions on the Insects text
in the seventh session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	2	2	1	0	0	0	0	3	1
A 2 Quoting	0	0	0	0	0	0	0	2	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	0
B 4 Comparing	0	1	0	0	0	0	0	0	0	0
B 5 Confirming	0	0	0	2	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	1	0	0	0	0	0	0
B 7 Elaborating	1	9	30	4	3	0	4	0	2	3
B 8 Expressing misconceptions	0	4	2	2	4	3	0	0	5	1
B 9 Expressing suppositions	0	0	1	1	0	0	0	0	0	0
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	0	0	0	0	0	0	0	0	0	0
B12 Giving examples	0	0	1	0	0	0	0	0	1	1
B13 Making inferences	2	1	2	1	0	1	3	2	1	1
B14 Providing facts	0	0	1	0	0	1	0	0	0	4
B15 Providing measurement	0	1	0	0	0	0	0	0	0	0
B16 Reasoning	1	1	1	0	1	2	0	3	1	1

Appendix 20 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
B18 Stating probability	0	1	0	1	0	0	0	0	0	0
B19 Summarizing	0	0	0	0	0	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
<u>C. Evaluation Category</u>										
C21 Agreeing	0	0	0	0	0	0	0	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	0	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	0	0	0	0	0	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
<u>D. Monitoring Of Understanding Category</u>										
D29 Task not difficult	0	0	0	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	0	0
D31 Question not understood	0	0	0	0	0	0	0	0	0	0
<u>E. Attempts To Answer Category</u>										
E34 Question repeated	0	0	0	1	0	0	0	0	0	0
E35 Re-read	0	0	0	0	0	0	0	0	0	0
E36 Re-read (paragraph format)	0	2	0	0	0	0	0	0	0	0

Appendix 20 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2

Strategy

F. Comments on Strategies Category

F39 Getting the answer	0	5	0	0	0	0	0	1	3	0
F40 Guessing	0	0	0	0	3	0	0	0	0	0
F41 Knowing	0	0	0	1	0	0	0	0	0	0
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	1	1	0	5	1	0	0	0	0	0
F46 Not remembering	0	0	0	2	0	0	0	0	0	0
F47 Not sure	0	2	0	0	0	0	0	0	0	0
F48 Not willing to try	0	1	0	1	0	0	0	0	0	0
F49 Remembering	0	0	0	0	0	2	0	0	0	0
F50 Thinking	0	3	4	3	0	1	2	0	0	0
F51 Trying	0	1	0	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	2	0	0	1	0	0	0	0	2	0
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	0	1	0	0	0
G56 Hearing	0	0	1	0	0	0	0	0	0	0
G57 Learned from school	1	0	1	0	1	0	0	0	1	0
G58 Mind	0	0	0	0	0	0	0	0	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	0	0	0	0	0	0	0
G64 People	1	1	0	1	0	0	0	0	0	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	0	0	0	0
G67 Quoting as proof	0	0	0	0	0	0	1	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G69 Re-reading	0	1	0	0	0	0	0	0	0	0
G70 Seeing	0	0	5	0	0	0	0	0	0	0
G71 Television	0	0	0	1	0	0	0	0	0	0
G72 Text	0	2	0	3	0	0	1	0	0	0

Appendix 20 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	0	0	1	0	0	0	3	0	0
G74 Text (sentence format)	0	0	0	0	0	1	0	0	0	0
<u>H. Miscellaneous Category</u>										
H75 Incomplete	0	5	2	4	0	0	0	0	3	1
H77 Relating with the researcher	1	3	6	7	7	3	2	2	2	6

Appendix 20 (Continued)

Group 2

Answered Textually Implicit questions on the Insects text
in the sixth session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	0	0	0	0	0	2	0	1	2
A 2 Quoting	0	0	0	0	0	0	0	0	0	1
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	1	0
B 4 Comparing	0	0	0	0	0	0	0	2	0	3
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	4	5	0	1	1	1	11	2	6	7
B 8 Expressing misconceptions	0	2	0	0	0	3	0	0	9	8
B 9 Expressing suppositions	0	0	0	0	0	0	1	0	0	0
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	0	0	0	0	0	0	1	0	0	0
B12 Giving examples	0	1	0	0	0	0	1	1	0	0
B13 Making inferences	4	3	1	1	5	1	5	2	4	3
B14 Providing facts	1	2	0	0	0	1	1	2	3	3
B15 Providing measurement	0	0	0	0	0	0	0	0	0	0
B16 Reasoning	2	0	3	2	0	1	1	2	1	2

Appendix 20 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
F43 Not able to find answer	0	0	2	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	0	0	0	0	0
F45 Not knowing	1	0	1	1	0	0	4	0	0	0
F46 Not remembering	0	0	0	0	0	0	0	0	0	0
F47 Not sure	0	0	0	0	0	0	0	0	0	0
F48 Not willing to try	0	0	1	0	0	0	0	0	0	0
F49 Remembering	0	0	0	0	0	0	3	0	0	0
F50 Thinking	0	3	0	3	0	0	0	1	0	0
F51 Trying	0	0	1	0	0	0	0	0	0	0
G. Comments On Sources of Answers Category										
G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	0	0	0	0	0	0	1	0	1	1
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	0	0	0	0	1	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	0	0	0	0	1	0	0	0	1	0
G58 Mind	0	0	0	0	0	0	0	1	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	0	1	0	0	0	0	0	0
G64 People	1	0	0	0	0	0	0	0	0	0
G65 Previous answer	0	1	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	1	0	0	1
G67 Quoting as proof	0	0	0	0	0	0	2	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G69 Re-reading	0	0	2	0	2	0	0	0	0	2
G70 Seeing	0	0	0	1	0	2	0	0	0	0
G71 Television	0	0	0	0	0	1	0	0	0	0
G72 Text	0	0	0	0	0	0	0	2	1	0
G73 Text (paragraph format)	0	0	2	0	0	0	0	0	0	1
G74 Text (sentence format)	2	0	0	0	0	0	1	0	1	1

Appendix 20 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	0	0	0	0	0	0	2	1	5	5
H77 Relating with the researcher	5	1	1	2	2	2	2	2	6	2

APPENDIX 21

FREQUENCY COUNTS OF QUESTION-ANSWERING STRATEGIES
USED WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTIONS
ON THE INSECTS TEXT

Group 1

Answered Scriptally Implicit questions on the Insects text
in the seventh session

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
<hr/>										
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	1	5	5	0	3	0	1	3	0
A 2 Quoting	0	0	0	0	0	0	0	1	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	5	0	0	0	0	0	0	0
B 4 Comparing	0	3	0	3	0	0	0	1	0	0
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	1	0	0	0	0	0	0
B 7 Elaborating	0	1	15	7	1	0	1	0	8	7
B 8 Expressing misconceptions	0	1	1	0	0	1	1	0	0	1
B 9 Expressing suppositions	0	0	2	0	0	0	0	0	0	2
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	0	0	2	0	0	1	0	0	0	1
B12 Giving examples	0	0	1	0	0	0	0	0	0	0
B13 Making inferences	0	0	0	0	0	0	0	0	0	0
B14 Providing facts	0	8	2	0	2	0	0	1	2	1
B15 Providing measurement	0	0	3	0	0	0	0	0	1	0
B16 Reasoning	2	4	6	4	1	1	5	2	2	1

Appendix 21 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2

Strategy

F. Comments on Strategies Category

F39 Getting the answer	0	3	1	1	0	0	0	0	1	0
F40 Guessing	0	0	0	0	1	0	0	0	0	0
F41 Knowing	0	0	0	1	0	0	0	0	0	0
F43 Not able to find answer	0	0	0	0	0	0	0	0	0	0
F44 Not able to think	0	0	0	0	0	1	0	0	0	0
F45 Not knowing	1	0	1	2	0	1	0	0	0	0
F46 Not remembering	0	0	0	2	0	0	0	0	0	0
F47 Not sure	0	0	0	1	0	0	0	0	0	0
F48 Not willing to try	2	0	0	0	0	2	0	0	0	0
F49 Remembering	0	0	0	0	0	2	0	0	0	0
F50 Thinking	0	4	5	2	0	3	3	1	0	5
F51 Trying	0	0	0	0	0	0	0	0	0	0

G. Comments On Sources of Answers Category

G52 Answer	0	0	0	0	0	0	0	0	0	0
G53 Book	2	0	0	1	0	0	0	0	2	0
G54 Experience	0	0	0	0	0	0	0	0	0	0
G55 Film	0	1	0	0	0	0	0	0	0	0
G56 Hearing	0	0	0	0	0	0	0	0	0	0
G57 Learned from school	1	1	1	1	0	0	0	0	0	0
G58 Mind	0	0	0	0	0	0	0	0	0	0
G59 Myself	0	0	0	0	0	0	0	0	0	0
G63 Not having seen	0	0	1	0	0	0	0	0	0	0
G64 People	1	0	0	0	1	0	0	0	1	0
G65 Previous answer	0	0	0	0	0	0	0	0	0	0
G66 Questions	0	0	0	0	0	0	0	0	0	0
G67 Quoting as proof	0	0	0	0	0	0	0	0	0	0
G68 Reading	0	0	0	0	0	0	0	0	0	0
G69 Re-reading	0	0	0	0	0	0	0	0	0	0
G70 Seeing	0	0	1	0	1	0	0	0	0	0
G71 Television	0	0	0	0	0	0	0	4	0	0
G72 Text	0	2	0	0	0	0	0	0	0	0

Appendix 21 (Continued)

Student	1	2	3	6	7	8	21	22	23	26
Language	L1	L2	L2	L1	L1	L1	L1	L2	L2	L2
Strategy										
G73 Text (paragraph format)	0	0	0	0	1	0	0	0	0	0
G74 Text (sentence format)	0	0	0	0	0	1	0	0	0	0
H. Miscellaneous Category										
H75 Incomplete	0	2	1	1	3	0	0	2	2	4
H77 Relating with the researcher	1	1	3	3	4	1	2	2	4	3

Appendix 21 (Continued)

Group 2

Answered Scriptally Implicit questions on the Insects text
in the sixth session

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
<u>A. Explanation Category</u>										
A 1 Paraphrasing	0	4	0	0	0	1	4	6	1	1
A 2 Quoting	0	0	0	0	0	0	0	0	0	0
<u>B. Interpretation Category</u>										
B 3 Changing mind	0	0	0	0	0	0	0	0	0	2
B 4 Comparing	1	0	0	0	0	1	0	1	1	2
B 5 Confirming	0	0	0	0	0	0	0	0	0	0
B 6 Contradicting previous thought	0	0	0	0	0	0	0	0	0	0
B 7 Elaborating	1	0	1	0	0	1	18	5	5	4
B 8 Expressing misconceptions	1	3	0	1	0	2	2	0	2	1
B 9 Expressing suppositions	0	0	0	0	0	0	2	0	0	0
B10 Generalizing	0	0	0	0	0	0	0	0	0	0
B11 Giving consequences	1	0	0	0	0	0	1	0	0	0
B12 Giving examples	0	4	0	0	0	0	2	0	0	2
B13 Making inferences	0	0	0	0	0	0	0	2	0	0
B14 Providing facts	0	4	0	1	0	2	0	2	1	2
B15 Providing measurement	0	0	0	0	0	0	1	0	1	1
B16 Reasoning	2	1	1	1	1	2	6	2	1	2

Appendix 21 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2
Strategy										
B18 Stating probability	1	0	0	0	2	0	4	0	0	0
B19 Summarizing	0	0	0	0	0	0	0	0	0	0
B20 Visualizing	0	0	0	0	0	0	0	0	0	0
<u>C. Evaluation Category</u>										
C21 Agreeing	0	0	0	0	0	0	1	0	0	0
C22 Disagreeing	0	0	0	0	0	0	0	0	0	0
C23 Doubting	2	0	0	0	0	0	0	0	0	0
C24 Expressing personal reactions	0	0	0	0	0	0	0	0	0	0
C25 Judging quality	0	0	0	0	0	0	0	0	0	0
<u>D. Monitoring Of Understanding Category</u>										
D29 Task not difficult	0	0	0	0	0	0	0	0	0	0
D30 Question difficult	0	0	0	0	0	0	0	0	0	0
D31 Question not understood	0	0	0	0	0	0	0	0	0	0
<u>E. Attempts To Answer Category</u>										
E34 Question repeated	0	0	0	0	0	0	0	0	0	0
E35 Re-read	0	0	0	0	0	0	0	0	0	0
E36 Re-read (paragraph format)	0	0	0	0	3	0	0	0	0	0
<u>F. Comments on Strategies Category</u>										
F39 Getting the answer	2	2	0	0	0	0	4	1	3	2
F40 Guessing	1	0	0	0	0	0	0	0	0	1
F41 Knowing	0	1	0	1	0	0	0	0	0	0

Appendix 21 (Continued)

Student	5	9	10	13	14	15	16	18	25	27
Language	L1	L1	L2	L2	L2	L1	L1	L1	L2	L2

Strategy

H. Miscellaneous Category

H75 Incomplete	0	4	0	0	1	3	8	1	0	3
H77 Relating with the researcher	1	1	1	2	3	2	4	0	4	0

APPENDIX 22

L1 AND 12 STUDENTS' USE OF
NON-PRIOR KNOWLEDGE EVALUATION STRATEGIES
WHILE ANSWERING TEXTUALLY EXPLICIT QUESTION
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
C21 Agreeing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C22 Disagreeing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C23 Doubting	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C24 Expressing personal reactions	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C25 Judging quality	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

APPENDIX 23

L1 AND L2 STUDENTS' USE OF
NON-PRIOR KNOWLEDGE EVALUATION STRATEGIES
WHILE ANSWERING TEXTUALLY IMPLICIT QUESTION
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
C21 Agreeing	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C22 Disagreeing	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
C23 Doubting	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)
C24 Expressing personal reactions	0 (0.0%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
C25 Judging quality	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	1 (0.6%)	1 (0.6%)	0 (0.0%)	1 (0.3%)

APPENDIX 24

L1 AND 12 STUDENTS' USE OF
NON-PRIOR KNOWLEDGE EVALUATION STRATEGIES
WHILE ANSWERING SCRIPTALLY IMPLICIT QUESTION
ON THE WHALES AND THE INSECTS TEXTS
(Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
C21 Agreeing	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
C22 Disagreeing	0 (0.0%)	2 (0.8%)	0 (0.0%)	3 (1.2%)
C23 Doubting	2 (0.8%)	4 (1.5%)	0 (0.0%)	0 (0.0%)
C24 Expressing personal reactions	2 (0.8%)	2 (0.8%)	0 (0.0%)	0 (0.0%)
C25 Judging quality	0 (0.0%)	1 (0.4%)	0 (0.0%)	0 (0.0%)
Total	4 (1.6%)	9 (3.5%)	1 (0.4%)	3 (1.2%)

APPENDIX 25

L1 AND 12 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 MONITORING OF UNDERSTANDING STRATEGIES
 WHILE ANSWERING TEXTUALLY EXPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
D29 Task not difficult	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
D30 Question difficult	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
D31 Question not understood	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Total	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

APPENDIX 26

L1 AND 12 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 MONITORING OF UNDERSTANDING STRATEGIES
 WHILE ANSWERING TEXTUALLY IMPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
D29 Task not difficult	0 (0.0%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
D30 Question difficult	0 (0.0%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
D31 Question not understood	0 (0.0%)	2 (1.0%)	0 (0.0%)	0 (0.0%)
Total	0 (0.0%)	4 (2.2%)	0 (0.0%)	0 (0.0%)

APPENDIX 27

L1 AND L2 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 MONITORING OF UNDERSTANDING STRATEGIES
 WHILE ANSWERING SCRIPTALLY EXPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
D29 Task not difficult	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
D30 Question difficult	0 (0.0%)	1 (0.4%)	0 (0.0%)	0 (0.0%)
D31 Question not understood	2 (0.8%)	1 (0.4%)	0 (0.0%)	0 (0.0%)
Total	2 (0.8%)	2 (0.8%)	0 (0.0%)	0 (0.0%)

APPENDIX 28

L1 AND 12 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 ATTEMPTS TO ANSWER STRATEGIES
 WHILE REPLYING TO TEXTUALLY EXPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
E34 Question repeated	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E35 Re-read text	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E36 Re-read text (paragraph format)	0 (0.0%)	1 (0.7%)	0 (0.0%)	2 (1.1%)
Total	0 (0.0%)	1 (0.7%)	0 (0.0%)	2 (1.1%)

APPENDIX 29

L1 AND 12 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 ATTEMPTS TO ANSWER STRATEGIES
 WHILE REPLYING TO TEXTUALLY IMPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
E34 Question repeated	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)
E35 Re-read text	3 (1.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E36 Re-read text (paragraph format)	0 (0.0%)	3 (1.6%)	0 (0.0%)	5 (1.7%)
Total	3 (1.8%)	3 (1.8%)	1 (0.4%)	5 (1.7%)

APPENDIX 30

L1 AND 12 STUDENTS' USE OF NON-PRIOR KNOWLEDGE
 ATTEMPTS TO ANSWER STRATEGIES
 WHILE REPLYING TO SCRIPTALLY IMPLICIT QUESTIONS
 ON THE WHALES AND THE INSECTS TEXTS
 (Percentages in parentheses)

	Whales		Insects	
	L1 (n=10)	L2 (n=10)	L1 (n=10)	L2 (n=10)
E34 Question repeated	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E35 Re-read text	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
E36 Re-read text (paragraph format)	0 (0.0%)	1 (0.4%)	0 (0.0%)	3 (1.2%)
Total	0 (0.0%)	1 (0.4%)	0 (0.0%)	3 (1.2%)