

A STUDY OF INFERENCING ACTIVITIES IN
SELECTED BASAL SERIES AT THE PRIMARY
LEVEL IN CANADIAN SCHOOLS

CENTRE FOR NEWFOUNDLAND STUDIES

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MAUREEN MARY MAJOR



A STUDY OF INFERENCING ACTIVITIES
IN SELECTED BASAL SERIES AT THE
PRIMARY LEVEL IN CANADIAN SCHOOLS

BY



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A thesis submitted in partial fulfillment
of the requirements for the degree of
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ABSTRACT

The purpose of this study was to examine the three most commonly used basal reading series for the primary grades in Canadian schools to identify: (i) whether inference is prescribed for teaching? (ii) if so, to what extent? and (iii) what methodologies are utilized.

A survey of the Department of Education for each province and territory revealed the most widely used programs were Expressways by Gage (1977); Starting Points in Language Arts by Ginn (1977); and Language Development Reading by Nelson (1977).

Teachers' manuals, student reader texts and student workbooks for each series were examined to determine the frequency of reference to the process of inference, to the use of pre and post-reading questions, and to the nature of the inference-making activities. Inferential questions required children to integrate background knowledge and text information to derive plausible inferences, whereas non-inferential questions required children to locate explicit information from the text. Analyses revealed that inference is prescribed for instruction mainly through the use of pre and post-reading questions and inference-making activities.

An overview of the results are as follows. The Gage series presented 10 pre-reading questions, 12516 post-

reading questions of which 1105 (43.9%) were inferential. It provided 19 inference-making activities. The Ginn series presented pre-reading questions and encouraged children to formulate pre-reading questions for each basal selection. Post-reading questions totalled 3191 of which 914 (28.6%) were inferential. It provided 54 inference-making activities. The Nelson series presented pre-reading questions for approximately fifty percent of the basal selections. Post-reading questions totalled 1492 of which 354 (23.7%) were inferential. It also included 57 inference-making activities. There were many examples throughout the three basal series where teacher guidelines designed to develop children's inferencing abilities were unclear.

These findings justify the following conclusions. First, the amount of pre and post-reading questions as well as the number of inferencing activities provided in these three series is consistent with what has been reported for American basal series. This means that the Canadian basal series also appears to be weak in the important reading process of inference. Second, non-inferential questions take precedence over inferential questions in terms of the total questions asked in the teaching manuals. Third, guidelines to teachers, if and when provided, are often vague, sketchy and misleading.

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CHAPTER I

INTRODUCTION

Reading comprehension is believed to be a collection of processes such as attending, analyzing, associating, synthesizing, inferencing, predicting and monitoring which have been identified and labelled in various ways by different writers in the field (Collins, Brown and Larkin, 1977; Henry, 1974; Smith, 1971). The assumption that the ability to make inferences is necessary to reading comprehension is widely accepted by reading theorists and researchers and perhaps is more of a truism than an assumption. It is with the inference process as one aspect of reading comprehension that I was most concerned. Specifically, this study examined the extent to which the process of inferencing is addressed and prescribed for instruction in specific basal reader series.

Recent studies have concluded that inferences are indeed an important part of the comprehension process (McIntosh, 1985; Carr, 1983; Hansen, 1981b; Johnson and Smith, 1981; Danner and Matthews II, 1980; Strange, 1980). Malicky and Schlenbein (1981) go beyond the view that inferences are an important part of the comprehension process, and write that "inferencing may be a key to comprehension since reading for meaning involves the relating of new information to that which is already known" (p. 335).

Stories have both an explicit and an implicit text base (Kintsch and van Dijk, 1978). An author rarely states word for word everything that happens in a story, rather, any information that can be logically assumed may be omitted. In other words, the author omits some information and depends upon the reader's stored background knowledge, plus the information provided by the text to make suitable inferences to help make the story coherent. Basically then, the reader uses background knowledge and the given text information to infer the implied information.

Phillips-Riggs (1983) suggests two basic functions of inferences: "First, inferences allow the reader to extend and enrich the explicit messages intended by the author. Second, inferences connect the explicit events with the events which are not explicitly treated by the author, but rather left as understood or implicit" (p. 9). It can be concluded that the reader constructs appropriate inferences to make sense of the story, but in order to be able to make these appropriate inferences, a reader must rely on the text as well as background knowledge. It would seem crucial that the skill of inference-making be developed in young children. Some researchers have concluded that young children need to be guided to develop this ability in reading. (Hansen, 1981b; Johnson and Smith, 1981). Therefore it would appear that developing children's inferencing skills

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should be a priority in the teaching of reading comprehension in the primary grades.

Background of the Study

The report of the Commission on Reading (1985) states: "Reading is a basic life skill. It is a cornerstone for a child's success in school and, indeed, throughout life. Without the ability to read well, opportunities for personal fulfillment and job success inevitably will be lost" (p. 1). This report reinforces the vitality of reading. In order to read and essentially understand what had been read, an individual needs to be able to make inferences from the written text.

I believe, as a primary teacher, that young children have the right to be instructed in the best possible methods of instruction. Basal reader series are widely used in schools and comprise the major component for teaching reading. It has been estimated that 95 percent of the schools in the United States rely on basal reader series as the major element of their reading programs (Clary and Smith, 1986). Through correspondence with the Departments of Education throughout Canada, it is apparent that the percentage of schools using basal reader series as the major component of reading programs is equally as great as the

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percentages cited for schools in the United States.

Basal reader series are indeed widely used in schools and should be reflective of the reading processes that should be taught in classrooms. In view of the recent research on the importance of inferencing ability in the reading comprehension process I have chosen to investigate a sample of basal reader series to identify if these series are reflective of current theory.

Purpose of the Study.

The purpose of this study was threefold. First, the study attempted to identify whether inference was prescribed for teaching in any or all of the three basal reader series examined in the study. Pending the answer to question one, a second purpose was to analyze the degree to which inference was prescribed in these basal reader series. The third purpose was to explore how inference was presented for teaching in these basal reader series.

Significance of the Study.

Recent reading research identifies inferencing skills as an important component of reading comprehension. Flood (1981) writes "it has been argued by many researchers that

the ability to generate inferences while processing written discourse is a vital and necessary component in the comprehension of written materials" (p. 52). Therefore, this would seem to indicate that children should be helped to develop their inferencing ability to its fullest potential.

If one is to accept the conclusions drawn by researchers that inferencing ability is important for reading comprehension, it would seem imperative that since the major component of reading instruction in classrooms is drawn from basal reader series, then the basal reader series should certainly incorporate the teaching of inference skills. However, Hansen (1981b) and Johnson and Smith (1981) report that in many instances, young children do not seem to bring their inferencing abilities to the written text. It would seem reasonable to question whether or not the existing reading series are conducive to developing children's inferencing abilities with written text. Hence the question: Are basal reader series incorporating the teaching of inference skills? This study examined whether inference was prescribed for teaching, the extent to which inference was prescribed, and the accompanying teaching methodologies in selected basal reader series.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Introduction

The necessity of a reader's ability to make inferences when reading has been widely accepted by many reading researchers as an important component of reading comprehension. Comprehension is a process by which meaning is derived from an integration of the text with the reader's background knowledge. Stories have both an explicit and an implicit text base (Kintsch and van Dijk, 1978). Authors rarely state word for word everything that happens in a story, rather they usually omit details that they believe a reader already knows. A reader must use the explicitly stated information of the text as well as background knowledge to infer the implied information to make the story coherent. As the text is read, a reader makes appropriate inferences to comprehend the text (Gordon, 1985; McIntosh, 1985; Carr, 1983; Carr, Dewitz and Patberg, 1983; Hansen, 1981b; and Strange, 1980).

Since it would appear that the use of basal reader series are highly utilized in schools in both Canada and the United States, the literature related to the extent of such usage, the questioning practices utilized by such series, as

well as perceived weaknesses in the use of inference activities with these series was reviewed. Many researchers have concluded that young children can and do make inferences but they do not always bring this ability to the written text (Hansen, 1981b; Johnson and Smith, 1981; Nicholson and Imlach, 1981; Daner and Matthews II, 1980; Omanson, Warren and Trabasso, 1978; Paris and Lindauer, 1976).

The related research and literature is reviewed in sections under the following headings: a working definition of inference, inference as it relates to reading comprehension, utilization of basal reading series in Canadian and American Schools, ability of young children to make inferences, and weaknesses of basal programs to development of inferencing ability.

Working Definition of Inference

Inference has been defined by many authors in many different ways. One of the most common methods of defining inference is to say that making an inference involves reading between the lines. Other definitions refer to inference as a skill. Davidson (1972) writes, "inferential skills are those skills which enable the reader to grasp meaning which is inferred but not directly stated in the text" (p. 203). Still other definitions of inference are

very vague. For example, Hayakawa (1978) writes, "Inference is a statement about the unknown made on the basis of the known" (p. 35). Carroll (1969), in his definition of inference, discusses what inference is not, rather than what it is. He states, "Inference is not association, we are not inferring something when we are only reminded of something" (p. 42).

Recent researchers such as Gordon, 1985; Carr, 1983; Phillips-Riggs, 1983; Niles and Harris, 1982; Malicky and Schienbein, 1981; all conclude that inference-making involves the reader deriving implicit messages by integrating text information and background knowledge. The work of these researchers has been synthesized to develop the working definition of inference used to guide this study.

Inference is the process of deriving or constructing implicit messages through integrating the given text information with a reader's background knowledge. In order to fully understand a text, a reader must have the ability to incorporate background knowledge with the text information. Good inferences are made to the extent that they fit logically and plausibly with the text information and background knowledge.

Inference as it Relates to Reading Comprehension

The ability of a reader to make inferences has been recognized by reading theorists for many years as a vital component of reading comprehension. Huey (1908) wrote,

Real reading is whereby the reader actively and sympathetically follows the ins and outs of an author's intention, his fidelity to truth, his accuracy and method, such reading cannot but train the mind to modes of functioning that are similar to his (the author's) and by so doing acquaints one with the more effective ways of thinking, and develops them in the reader. (p. 365)

Thorndike (1917) extended Huey's ideas when he referred to reading as reasoning. He perceived a reader as balancing the material read against the background knowledge and then making judgements or drawing conclusions about the subject matter. He wrote,

Understanding a paragraph is like solving a problem in mathematics. It consists of selecting the right elements of the situation and putting them together in the right relations, and also with the right amount of weight or influence or force for each. The mind is assailed, as it were, by every word in the paragraph. It must select, repress, soften, emphasize, correlate, and organize, all under the influence of the right mental set or purpose or demand". (p. 329)

That is to say, a reader manipulates the ideas so that a consistent and complete conclusion can be reached. Reading was viewed by the National Society for the Study of Educa-

tion (1937) as a complex of mental activities. This same society, again in 1949, re-emphasized the relationship between reading and thinking. They regarded reading as a thoughtful process which could cultivate many aspects of thinking. The relationship between reading and thinking continued to be emphasized by educators in the 1950's. Artley (1953) writes, "reading is a means by which, the mind grows, the understanding matures, the judgement sharpens" (p. 21). Russell (1956) views reading as a contributor to the development of thinking. He suggests that in the earlier days, reading was usually taught with a great deal of emphasis placed upon word recognition and oral reading. "Under this system children may have been 'barking at words' but they were not reading in the modern sense" (p. 297). By 'modern sense' Russell meant understanding and interpreting what is read. Almy (1967) views the process of learning to read as "one that both reflects and contributes to progress in intellectual development" (p. 89). In more recent years, reading theorists continue to echo the conclusions of earlier theorists.

Reading is thinking, and the ability to make inferences is a necessary component of reading if text is to be comprehended. Pearson and Johnson (1978) write, "Comprehension involves a great deal of inference making" (p. 24). "Students who do not possess the requisite scriptural

information or who are deficient in their power to draw logical inferences between text segments will not be able to respond accurately to questions without explicit answers in the text" (p. 165). Strange (1980) writes that in terms of reading comprehension, "the most important skill is inferencing and recall is important only as it assists a reader in making an inference" (p. 394). Flood (1981) states:

It is argued that inferences like comprehension occurs in the reader. Both are human acts of cognition and cannot occur without the interaction of a stimulant (the text) and a human being (the reader). Inference like comprehension, cannot exist solely within a text, but must involve active processing. (p. 51)

Flood further cites the conclusions of many other researchers who argue the ability to generate inferences while processing written discourse is a vital and necessary component in the comprehension of written materials.

Niles and Harris (1982) also view reading as dependent upon inferential thinking. They write, "In order to understand new information, comprehenders must relate the new information to some other information they already understand" (p. 57). Wilson (1983) presents a diagram which summarizes some of the recent views on reading. This diagram shown as Figure 1 is representative of current research, indicating that the integration of the text and reader's background knowledge is critical to reading

comprehension. In discussing this diagram she writes, "the reader's prior knowledge and inferencing skills are at the core of the model, reflecting the connection from the text to information already stored in the reader's head" (p. 383).

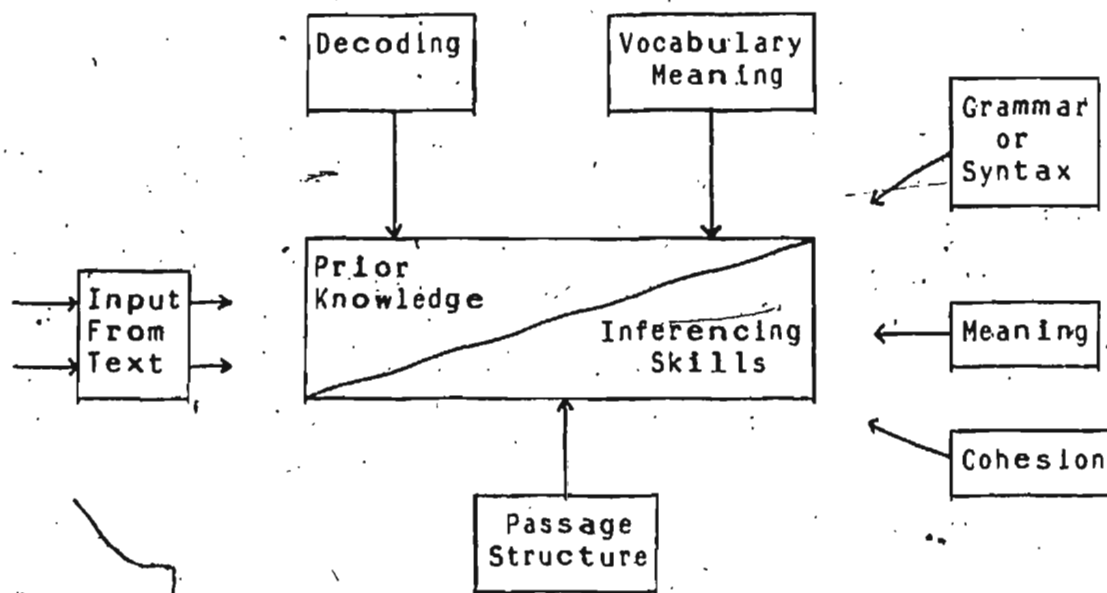


Figure 1. Reading Comprehension (Wilson, 1983, p. 383)

Carr (1983) after a review of the research on the skill of drawing inferences in reading, reached conclusions similar to those of Wilson. She described studies which concluded that the process of inferencing is indeed a part of the reading comprehension process. Many researchers indicate that the ability to make inferences is a prerequisite to reading success. Readers need to integrate the text with their background knowledge in order to generate

inferences to infer the missing information. Carr (1983) summarizes her observations of recent studies by writing "... recent studies of text grammar indicate that inferences play a major role in reading comprehension. The reader constructs inferences during reading to make the story coherent rather than by a reasoning process after discussion of facts" (p. 520).

Even more recently, Gordon (1985) reported that an individual must make inferences when reading. Inferences take a reader beyond the text. The number and kinds of inferences an individual makes depends upon the individual's background knowledge and the thinking strategies a reader develops. Collins et al. (1977) identified five inference strategies used by adult readers. Phillips-Riggs (1983) expanded the five strategies identified by Collins et al. to describe ten inference strategies used by grade six students.

Many researchers have concluded that the skill of inferencing is a vital component of reading comprehension. Considering this, it would seem imperative that young children be helped to develop their reading inferencing ability to the fullest extent. Reading instruction in a great many schools is centered around one or more basal reading series. The extent of usage will be discussed in the next section.

Utilization of Basal Reading Series in Canadian And American Schools

According to Spache and Spache (1977) the first series of what could be called basal readers appeared in the United States in 1790. Basal readers were used extensively in the past and this extensive use has continued today. Spache (1963) states,

With the possible exception of Webster's Speller or the New England Primer, no other text book has achieved the universal adoption accorded the current basal reader or reading series. At least 90 percent of the schools in our country (United States) now use basal manuals as the foundational material for reading instruction". (p. 25)

Barton and Wilder (1964) reported that in the United States between 92 percent and 98 percent of primary grade teachers used a basal series on all or most days of the school year. Yarrington (1978) stated, "basal readers are used in 95 percent of the schools in the United States as the major component of the reading program" (p. 7). Jenkins and Pany (1980) promote the conclusions of other researchers when they write, "the most prevalent approach of teaching reading-comprehension is through basal readers" (p. 557). Researchers are still presenting evidence to support the claim that basal readers are used extensively throughout

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many schools in Canada and the United States. Otto, Wolf and Eldridge (1984) state,

Closely following the adoption of the graded-school organization, graded series of readers were developed to assist teachers with the systematic teaching of reading. Over the years these series of basal readers have been almost universally adopted and they have been made more and more comprehensive. Taken together, the basal reader series offered by the full array of publishers undoubtedly are the most potent and pervasive force in reading instruction in the nation's schools today. (p. 800-1)

Clary and Smith (1986) report that 95 percent of the schools in the United States use basal reader series as a major component of their reading programs.

Fagan (1985) when addressing the appropriateness of basal reading material for instructing children in reading and the responsibilities of all publishers of these materials to the reading profession, indicated that basal materials are used extensively in Canadian schools. He writes,

In fact, it appears reasonable to estimate that at least 99 percent of teachers have at one time or are at present using such materials (basals) in prescribed or modified form. Conversely, at least 99 percent of students will have been exposed to these materials in one form or another. (p. 29)

The percentages discussed by Fagan (1985) are further supported by correspondence received during this study from the various Departments of Education throughout Canada.

Each provincial Department of Education was asked to indicate which, if any, basal series was prescribed for use in its province. The correspondence returns indicated that eight provinces and the two territories endorsed at least one basal reading series for use in its schools. The correspondence from the two remaining Departments of Education did not indicate whether any specific basal reading series were prescribed for its provinces.

Malicky and Norman (1985) also discuss the high use of basal series in Canadian classrooms. They write that the usual response to the question of how children should be taught to read is:

In this country (Canada) the answer most commonly given is in the form of a packaged basal reading series in which reading skills are taught in a sequential systematic manner. Although each province differs in the specific basals recommended for use in schools, there is a general assumption that formal instruction is necessary at this very crucial stage of literacy development. (p. 8)

The conclusion that most children in Canada and the United States are or will be exposed to basal reading programs is therefore justified. Given that basals seem to comprise the core of many reading programs, it seems startling that Clary and Smith (1986) should write "There is, it seems, no uniform method of selecting basals and little information available on methods being used" (p. 390). It would appear that few states and provinces have

specific criteria in place for selecting basal reader programs in schools.

Even though evidence supports the claim that basal reading series are used quite extensively throughout many schools in Canada and the United States, basal series have been the target of much criticism. Approximately ten years ago, Spache and Spache (1977) wrote "every self-appointed expert who appears on the educational horizon with his unique concept of the reading process feels obligated to attack this established approach in order to find some foundation for his own ideas" (p. 41). Among the frequent criticisms of many basal reader series as they pertain to teaching reading comprehension effectively is the questioning practices utilized. In view of that criticism, many researchers have studied the suggested questioning practices in various basal series along with the questioning practices of individual teachers in an attempt to identify how beneficial those practices are in facilitating students' reading ability. The next section of the review discusses the importance of good questioning practices.

Questioning Practices Beneficial to Reading Comprehension

Pearson and Johnson (1978) view questions as an

important component of any reading instruction. They consider the important factor not to be whether questions should be used, but rather, how they are used. They discuss three kinds of question-answer relations. The first they refer to as "textually explicit" which entail those questions to which the answers are there on the page. The second, "textually implicit" entail those questions to which the answers are on the page but are not obvious. The third, "scriptually implicit" entail those questions to which a reader must use the text as well as background knowledge to determine the answer. One might then conclude that a good balance of different types of questions should be a part of every reading program. It is obvious that a child must develop inferencing skills if questions of a "scriptually implicit" nature are to be answered.

Ruddell (1978) also sees a need for good questioning practices but cautions teachers about the kinds of questions they ask their students. Sometimes when teachers concentrate on asking all literal questions the child may miss the understanding of the text as a whole. He discusses the results of his previous research investigation (1972) which concluded that the number of teachers' questions at the factual or literal level were almost double those asked at the interpretive level. He suggests that in order to build upon a child's comprehension ability a teacher must

emphasize questions at the inferential level. He states:

The effort a teacher expends in building the comprehension program will be reflected directly in students' abilities to effectively derive, interpret, and apply meaning from oral and written communication experiences encountered throughout life. (p. 119)

Hare and Pulliam (1980) explored teacher questioning practices for selected reading passages. They used the question categories developed by Guszak (1967). Guszak reported that teachers seemed to equate reading and thinking skills with literal comprehension skills. Guszak's categories of questions included literal questions which were comprised of recognition, recall and translation, and inferential questions which were made up of conjecture, explanation, and evaluation. Almost two decades after Guszak's study, Hare and Pulliam (1980) reported that teachers' questioning practices had not significantly changed. Inferential questions were still representative of a small percentage of questions that teachers asked. They concluded their study by suggesting that there seemed to be no absolute proportion of literal to inferential questions that should be asked about any particular passage, rather, teachers should examine the types of questions they are asking and modify their questions where necessary. The same year, Petrosky (1980) examined a number of other researchers' observations to identify the types of questions being

asked by teachers. He concluded that about two-thirds of the teachers' comprehension questions were of a literal nature. Petrosky (1980) wrote:

To paint the picture in percentages, we can say that sixty percent of the questions asked by teachers in elementary reading/literature classes are literal comprehension, while fifteen percent are inferential, and fifteen percent are evaluative with most of the emphasis on whether or not the students like what they read. (p. 151)

Petrosky's percentages account for only 90 percent of questioning practices, 10 percent remains unaccounted for.

Researchers are still advocating that teachers should be trying to improve children's reading comprehension abilities. It is still being suggested that in order to develop comprehension skills, teachers should use a blend of questions to include literal, inferential, and evaluative questions. Cooter (1984) poses the question, "Should we spend valuable class time teaching literal comprehension skills when attention to higher levels of comprehension could pull along literal skills indirectly?" (p. 1). He reviewed Hansen's study (1981b) in which students were instructed in reading by techniques that emphasized inferential comprehension and omitted literal comprehension skill development. Results indicated that even though no literal comprehension skills were practiced during the experiment, these skills continued to be developed or "pulled along"

with the higher comprehension skills that were being taught. Cooter (1984) conducted a study with third and fourth grade students to see what effect eliminating literal questioning would have on students' literal comprehension abilities and also on their inferential abilities. The control group received instruction as suggested in the basal reader manuals, whereas the experimental groups received a variation of the basal reader manual instruction in that they were asked only inferential or higher level questions. Results of the study indicated that the experimental group's inferential ability improved and their literal comprehension skills continued to develop even though they were not specifically instructed in literal questioning.

Through an examination and modification of classroom and teaching materials perhaps students can become more facile at interpreting and evaluating the messages that they read, thus becoming more attuned to thinking and reacting as opposed to 'just' remembering what was said. (Cooter, 1984, p. 8)

In summary, research indicates that there is indeed a need for students to practice answering different types of questions as part of reading instruction. However, the kinds of questions asked is the key factor. It seems apparent that the suggested student questions provided in basal reader series should certainly include many inferential type questions whereby the child has to integrate

background knowledge with the text in order to infer the implied information. At present, the results from the studies conducted on basal reader series used in the United States appear to provide mostly literal type questions. No studies were found that examined prescribed questioning methods of basal reader series currently used throughout Canada. Recent researchers advocate that teachers' questions should include more inferential type questions than those of a literal type. The recommendation that children need to be given opportunities to answer inferential questions is justified. The question when to introduce children to inferential type questions is discussed in the next section of this review.

Ability of Young Children to Make Inferences

McIntosh (1985) reports that many basal series do not introduce the skill of inferencing to students until the fifth or sixth grades since this skill is considered too difficult for young children. Contrary to basal programs' scope and sequence charts, numerous researchers have concluded that young children can make inferences when reading but they need to be given opportunities for developing their inferencing abilities. Danner and Matthews II (1980) write "young children can and do make inferences

based upon information they have read" (p. 908). Hansen (1981b) reviewed the work of other researchers in the area of young children's ability to make inferences. She refers to the work of Paris and Lindauer (1976) who suggested that young children do not spontaneously integrate new information with their prior knowledge. She also refers to Omanson, Warren and Trabasso (1978) who found that young children do not lack the ability to draw inferences, nor do they lack the memory capacity. Instead, they concluded that young children lack the prior knowledge, which could limit the young child's ability to make inferences in a particular situation. Hansen (1981b) considers the findings of both groups of researchers to justify her own conclusions that skills not used spontaneously by children need to be developed by them as is evident by her remarks:

Research needs to focus on the development of programs that will train children to apply these processes. It seems that children spontaneously draw inferences in their daily activities; they begin analyzing similarities and differences when they are infants. However, they do not make these inferences as consistently when confronted with reading tasks. (p. 396-397)

Nicholson and Imlach (1981) concluded from their study of eight year olds that children can and do make inferences when asked to do so for specific stories but these children do not always apply their inferencing abilities to new materials when not instructed to do so. Their

observation would suggest the need for the development of inferencing skills to be practiced on a daily basis so that it would eventually become a natural, unconscious activity during any reading. Johnson and Smith (1981) report that there is growing evidence that young children possess the basic ability to go beyond the information given in the text and to infer the implied information. Schmidt and Paris (1983) also promote previous researchers' conclusions that young children can and do make inferences, but suggest young children do not infer implicit relations in sentences spontaneously as often as older children (10-12 years old). Carr (1983) also suggests that young children can make inferences when she writes, "The ability to draw inferences from reading or listening develops from early childhood to adulthood ..." (p. 520). More recently, McIntosh (1985) reported, "While it is true that children's ability to understand and remember inferred relationships does increase with age, children make inferences from the time they are very young" (p. 756).

As previously indicated, basal reading series comprise the core of most students' reading programs, and it appears as though basal reading series are not free from error. In view of this, some researchers have suggested specific classroom practices to help students develop their inferential abilities, to aid in their reading comprehen-

sion. Hansen (1981) wrote that young children do not have well developed inferential reading skills. She discusses that making inferences is not a new concept to children. Infants as well as young children are constantly making inferences quite frequently in their daily lives. Still, she reports that young children have difficulties drawing inferences during reading. She believes that young children do not fully realize the demands of reading. Children need to be aware of the reality that the text is best understood when a person brings background knowledge to the text and integrates the two, "In order to draw inferences, a reader must possess appropriate prior knowledge" (p. 666).

Hansen devised a strategy to enhance the inferential reading comprehension skills of primary grade children. Second grade children were divided into two groups. Children in the experimental group received instruction to aid the development of their inferential ability. The children were helped to understand that by using their background knowledge and the text, they could make inferences about a story. The control group received instruction as recommended in the Ginn and Company (1969) basal reader manual. Results of this study indicated that the reading comprehension of the experimental group was significantly better than that of the control group. In fact, even though this procedure was intended to improve the

inferential skills of the experimental group (thereby increasing their comprehension, this procedure also improved the children's literal comprehension. It should be reported that the Report of the Commission on Reading (1985) reveals that even many high school students in the United States do not have well developed inferential reading skills.

In a second study with grade two children, Hansen (1981b) tested the hypothesis that children need to be made aware of the importance of spontaneously making inferences between the text and their background knowledge. She used the two methods described below with a control group to form three groups. The three groups included:

- 1) the **Strategy** method group where instruction centered on the idea of making the children aware that they could draw inferences between the text and their background knowledge;
- 2) the **Question** method group where instruction centered on the idea that the children would be given ample opportunities to answer inferential questions; and
- 3) the **Control** group where instruction included a story introduction followed by literal and inferential questioning at a ratio of 5:1.

Results of the study revealed that the two experimental groups exceeded the control group in reading comprehension.

Hansen concluded that young children have the ability to make inferences but like many older people, they do not always use this ability when reading.

Carr, Dewitz and Patberg (1983) recognize the importance of inferencing ability as an integral part of reading, "To infer either unstated information or logical connections requires the reader to rely not just on previous knowledge alone; he/she must also use strategies to find clues in the text which promote and support inferences" (p. 2). These researchers described three procedures used in their study to test whether they could improve grade six children's inferential ability in reading comprehension in a more spontaneous way. The researchers worked on the premise that in order to increase the inferential ability of the children, three things were necessary. First, a reader's background knowledge must be stimulated before the text is read. Second, a reader must be able to relate background knowledge to the text. Third, a reader must be able to apply what is learned to new learning situations. They concluded that children using these three strategies can increase their inferential ability thereby aiding reading comprehension.

Current research continues to identify the making of inferences by a reader as an essential part of reading comprehension. McIntosh (1985) reiterates, "Until (and

unless) readers draw inferences, a text is nothing more than a collection of separate words and sentences" (p. 755). She further relates that young children can make inferences, but suggests that young children are not asked to make inferences from texts when they enter school. She reports that many basal reader series fail to introduce the skill of inferencing until the fifth and sixth grades. As a result, primary teachers consider inferencing ability to be a high level skill and do not concern themselves with teaching it.

McIntosh (1985) relates two classroom strategies for promoting inferencing ability in reading comprehension. The first is to activate a child's background knowledge. Just because a child has had an experience does not necessarily mean he/she can surface this knowledge when reading, therefore the teacher must help the child bring his/her personal experiences or background knowledge to the surface. A second strategy is the practice of questioning to facilitate drawing inferences, "Without asking inferential questions teachers will never know whether their students make inferences as they read" (p. 759).

It would seem that while researchers have stated and are continuing to address the importance of inference-making ability to reading their conclusions are not being translated into practice by basal reader authors. Most recently, Poindexter and Prescott (1986) developed a step by step

process that students can use when answering any of the three types of questions previously identified by Pearson and Johnson (1978). This process involves the following three steps for students to follow when answering a question based on a text:

- Step 1 - to see if the answer is given directly;
- Step 2 - to see if the answer is given indirectly; and,
- Step 3 - to see if the answer must come from your own thoughts; (p. 909)

The researchers tested this strategy with four hundred students in grades four, five and six over a three month period. The students were divided into either an experimental group or a control group. Their conclusions revealed that students in the experimental group who used the strategy, on the average, answered more comprehension questions correctly. Poindexter and Prescott (1986) conclude that the steps of the process "are designed to cue the mental processes which in turn produce an inference" (p. 911).

In summary, researchers have concluded that young children can make inferences. Most young children do need practice in making inferences from written text since in many instances they do not bring their inferencing ability

to the text. To help young children make inferences when reading, specific strategies have been developed by various researchers to aid teachers in developing those various skills in children. Three general recommendations are prevalent throughout the various recommended classroom practices. First, children must be given ample opportunities to make inferences. One means of providing these opportunities is to ask children questions that would require the making of inferences in order to answer questions. Second, children must be given opportunities to make inferences on a daily basis, so that the making of inferences will become a natural occurrence when reading. Third, texts from which children are required to make inferences should be at their instructional level.

Considering these recommendations along with previously discussed research, the conclusion that inferencing ability is a vital component of reading comprehension can be drawn. Reading instruction in a large number of schools has basal reading series as the core reading program. However, these series are not without weaknesses. Hence, the next and final section of this review of literature will present some of the weaknesses of basal reader series as they relate to the development of children's inference-making ability.

Weaknesses of Basal Series Relative to Development of Inferencing Ability

Research previously discussed in this review of literature identified that many basal reader manuals suggest that teachers ask a higher proportion of literal type questions as opposed to inferential type questions as a means to teach comprehension to children. Durkin (1981) examined five basal reader series' manuals that were used in schools in the United States to identify how they suggested comprehension be taught to young children. She specifically examined five basal series' manuals for kindergarten through to six from the following published companies: Allyn and Bacon, Inc. 1978; Ginn and Company, 1979; Harcourt Brace Jovanovich, Inc., 1979; Houghton Mifflin Company, 1979; and Scott Foresman and Company, 1978. From an analysis of the five series, she concluded that literal comprehension was the focus of the basal reader manuals. She also observed that most of the manual recommendations for instruction were brief, with large amounts of practice and assessment for the children rather than instruction.

Agopian (1983) studied four basal reading series used in grades four, five and six in the United States to examine the types of questions found in the teacher's manuals and student workbooks of basal readers. She examined the

programs of the following publishing companies: Ginn and Company, 1979; Holt, Rinehart and Winston, 1977; Houghton Mifflin Company, 1979; and Scott Foresman and Company, 1978. She also found that literal comprehension questions far outweighed any other type of questions, "The number of literal comprehension questions in both the teacher's guides and the workbooks is too high and cannot be justified" (p. 83). This statement again illustrates the conclusion that many basal reader authors fail to provide sufficient opportunities for users of these series to develop their inferencing ability.

A second weakness of basal reader series relating to the development of childrens' inference-making ability was reported by Beck, McKeown and McCaslin (1981). They studied Ginn and Company, 1979; and the Houghton Mifflin Company, 1979, basal reader series used in the early grades of some schools in the United States. These researchers reported that many of the first readers or initial readers of the series contained a limited vocabulary to compensate for some of the children's limited reading vocabulary. They identified two types of alternative wording: 'roundabout language' and 'referring expressions'. Roundabout language approximates the meaning of an unavailable word and referring expressions, such as 'this', 'he', and 'she' are used to replace a word" (p. 781). Due to the limited

vocabulary in many basal stories; often information is omitted from a story and the reader has difficulty inferring the implied information. Pearson (1984) drew similar conclusions about basal readers when he wrote:

Basals use direct or roundabout language in the earliest texts because of their need to control vocabulary for frequency and/or symbol-sound predictability. This places a tremendous inference burden on the young child (p. 21).

However, the practice of using roundabout language may not be in the best interest of the child since studies previously reviewed in this study have indicated that young children can make inferences but they need guidance and practice in developing their inferencing abilities (McIntosh, 1985; Carr et al., 1983; Schmidt, Caul, Byers and Buchman, 1984; Hansen, 1981b; Johnson and Smith, 1981; Nicholson and Imlach, 1981; Danner and Matthews II, 1980).

Basal manuals examined by Beck et al. (1981) revealed that pre-reading guidance questions were not provided in the basal reader manuals to stimulate the children's background knowledge which is an essential element of inferencing ability. They point out, "When story elements are omitted from a text, program developers should make the teacher aware of the omission, and offer suggestions to provide the missing elements (p. 784). Three years later, Beck (1984) again suggested that basal reader manuals are lacking in providing activities for surfacing a child's background

knowledge. Basal reader manuals, she suggests, could facilitate comprehension by providing activities that help to stimulate children's background knowledge before reading a story. According to Beck following the reading of a story, questions that elicit inferences, evaluation, and appreciation should be provided.

Durkin (1984) identified the core of the basal lesson as being a story from a reader. The teachers' manual to accompany each reader basically summarizes the content of the lesson and provides a means of instruction for the teacher to follow when teaching the lesson. Her conclusions are based upon a study she conducted in 1984 whereby she observed sixteen teachers in the United States from grades one, three and five to identify what parts of the basal manuals the teachers used during their reading periods. Like Beck, she concluded that the basal manuals did not provide sufficient activities or questions for the teacher to use to help stimulate the children's background knowledge before a story from the reader was read, "At a time when the significance of world knowledge for comprehension is receiving widespread attention, the omission (review or development of background knowledge) was unexpected" (p. 737). Another of Durkin's observations was that teachers rarely posed pre-reading questions. Pre-reading questions would be one method of helping the child to surface background knowledge. Many teachers, she reported, did not ask

pre-reading questions of their students as they felt that questions of this type were time consuming and unnecessary.

Hansen and Hubbard (1984) arrived at a conclusion similar to that of Beck (1984) and Durkin (1984), that basal reader manuals do not provide sufficient suggestions for a teacher to use to activate a child's background knowledge in association with the text. They conducted a study with fourth graders in the United States, whereby one group of children were instructed through the use of inferential questions and a second group, the control group, were instructed as suggested in the basal reader manual. Both groups of children were poor readers. These researchers reported that in many instances poor readers did not comprehend what they read. Hansen and Hubbard also suggested that poor readers may have difficulty in answering inferential questions because they do not have the appropriate background knowledge to bring to the text or they have not practiced inferential skills in their reading class situations. Results of the study indicated that through instruction in inferential thinking and through practice answering inference questions, the students' comprehension ability did increase. The experimental group in this study were able to compare something from their own lives to something that might happen in the text. They suggest that basal manuals do not encourage comparison between the child and the text,

rather they suggest discussions to evolve around the child or the text in isolation. Hansen and Hubbard (1984) concluded that the students of the experimental group at the end of the study had a better understanding of what reading involved, "Students understood that the meaning of a text does not lie within the words on the page. As these poor readers read, they compared, extended, interpreted and actively created messages" (p. 589).

A lack of strategies or methods for stimulating children's background knowledge does appear to be a significant recurring weakness of basal readers as identified by many researchers. Russavage, Lorton and Milham (1985) surveyed twenty-five grade one to five teachers in the United States regarding their use of basal readers. The teachers were asked to identify their use of a basal reader series and also to describe the strengths and weaknesses of each. According to Russavage et al. (1985) teachers consistently identified the following weaknesses:

- The basal reader fails to address adequately students' lack of prior knowledge. Not only are many stories irrelevant to the experiences of each student and not matched to individual student interests, but teachers' manuals include few strategies for developing background knowledge or resolving conflicts of inaccurate prior knowledge. (p. 316)

These factors have been shown to have great potential for interfering with comprehension.

In view of the research presented which concludes that inferencing which involves an integration of the text and readers' background knowledge is a vital component of comprehension, one would have to question why basal reader manuals do not appear to be emphasizing the development of the reader's background knowledge. In the survey conducted by Russavage et al. (1985) the teachers indicated that they did modify the basal reader manual in a number of ways. One modification was "to have the students set purposes for reading through self-generated questions and to add more creative questions to provide practice in critical thinking" (p. 316). From the research presented it would seem fair to conclude that the authors of the basal reader series examined in the United States have not put into practice the findings of recent reading research. Researchers have concluded that young children need guidance in developing their inference-making ability and must be able to make inferences that are logical and plausible if they are to comprehend the written text.

Durkin (1986) continues to suggest that basal reader manuals used in the United States do not provide adequate suggestions for teaching reading comprehension. She indicates that basal reader manuals contain very few

suggestions for teaching comprehension, and as a seeming consequence of this, little comprehension has been observed in the classroom.

In summary, it would appear that since 1984, basal reader manuals used in the United States have not undergone any significant changes to correct any of the weaknesses as identified by researchers with regards to the developing inference-making abilities in children over the past five years. Researchers and classroom teachers are still identifying one consistent weakness, that of the basal reader manual to adequately address student's lack of prior knowledge.

Research for this study reviewed a number of studies in the United States that have been conducted to analyze basal reader series. A study by Schmidt, Caul, Byers and Buckmann (1984) examined thirty four texts from eight basal reader series used in grades two, four and five in the United States. The publishing companies included: Houghton Mifflin Company (1979); Scott Foresman and Company (1978); Ginn and Company (1979); Harcourt Brace Jovanovich Inc. (1979); Harper and Row (1980); Holt, Rinehart (1977); Laidlaw (1980); and Open Court (1979). It seems that basal series are different, and emphasize different skills. They concluded, "Basals matter; we have to look seriously at the educational opportunities they do or do not offer and the

implications they have for teaching children to comprehend" (p. 161).

The findings of these researchers and others would seem to suggest that educators should look seriously and critically at basal reader series used in order to identify whether the programs are conducive to developing childrens' reading comprehension. Sorenson (1985) sums up these thoughts by claiming:

Commercial programs are a strong influence on the structure and content of reading instruction. Teachers must be aware of program weaknesses and should communicate with authors, publishers, and one another about the flaws they see ... We can find weaknesses in any program, but programs don't teach - teachers do. (p. 84)

There are no studies analyzing basal reader series currently used in Canada. Since a review of the literature reveals that inferencing ability is a vital part of reading, and basal readers are used in the vast majority of schools to teach reading, it is important to analyze the extent to which inference is prescribed for teaching in basal series used in Canada. Hence, this study analyzed the degree to which inference was prescribed for teaching in the three most commonly used basal reader series in the primary grades in Canada. It also examined the teaching processes and activities found in these basal reader series.

Summary

To summarize, the following conclusions can be drawn from the research discussed in this review of literature.

- 1) Inference is a vital component of reading comprehension.
- 2) To make an inference, a reader must be able to integrate the text with background knowledge.
- 3) Young children can make inferences when they read but need guidance and opportunities to develop this skill.
- 4) Basal reader series are the major component of many schools' reading programs.
- 5) Weaknesses of the basal reader series have been identified but little attempt has been made to correct these weaknesses.
- 6) Studies of basal reader series in the United States reveal that basal programs do not appear to be aiding in the development of a reader's inferential skills, which are so vital to reading comprehension.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The purpose of this study was to examine the extent to which the process of inference was prescribed for teaching, as well as to analyze the inference methodologies presented in selected basal reader series. The basal series selected for this study were the three most commonly used series in the primary grades throughout Canada. The teachers' manuals, student texts and workbooks for each series were analyzed.

This chapter presents the design of the study and ~~describes~~ the method used to select the three most commonly used basal series, the procedures for analyzing the basal series, the pilot study, and data analysis.

Materials

In order to determine the most commonly used basal reader series throughout Canada a letter requesting certain information was sent to the Department of Education for each province and territory. The letter requested an ~~authorized~~ person to indicate the three most commonly used basal reader

series for the primary grades as approved by the department and to return the information. A copy of the letter is included in Appendix A. Correspondence concerning this request was received from all provinces and territories in Canada. However, the Department of Education for British Columbia supplied a copy of the General Report for the 1984 British Columbia Reading Assessment which did not include information pertinent to the specific request. Also, the Department of Education for Quebec forwarded a copy of an information document entitled Pre-school and Elementary Education (1982) which discussed the importance of a Language Arts program but did not identify the specific authorized reading series for the province.

Table 1 represents a summary of the authorized basal reader series for each of the remaining provinces and territories. From an analysis of Table 1 the most commonly used basal reader series used in the primary grades throughout Canada were Starting Points in Language Arts by Ginn and Company Educational Publishers, 1977; Language Development Reading by Thomas Nelson and Sons Ltd., 1977; and Expressways by Gage Educational Publishing, 1977. Hence, these three series were analyzed in this study.

TABLE 1

BASAL SERIES PRESENTLY USED BY CANADIAN
PROVINCES AND TERRITORIES

	Ginn & Co. Starting Points in Lang. Arts	Nelson & Sons Language Development Reading	Gage Pub. Expressway	Holt, Rinehart & Winston Impressions	McGraw Hill Unicorn	Ginn & Co. Integrated Language Program	Ginn & Co. 720
Yukon	*						
North West Territories	*	*					
Alberta	*	*	*				
Saskatchewan	*	*					
Manitoba	*	*	*				
Ontario	*	*	*	*			
New Brunswick		*	*				
Prince Edward Island			*				
Nova Scotia		*	*	*	*		
Newfoundland		*					
TOTALS	6	8	6	3	2	1	1

Procedure

Inference Activities

In order to determine if, and the extent to which, inferential skills were taught in the three most commonly used basal reader series for the primary grades, each teacher's manual for each reader of each series was examined. This examination identified the extent of reference by the publishers to activities which promote the skill of inferencing. After identification of suggested activities for developing inference skill was completed and noted, each activity was further examined to identify whether these activities would be classified as inferential development activities according to the definition adopted for this study.

To determine whether these suggested inference type activities were of an inferential nature, each activity was examined to ascertain if a child could complete the activity solely from the information provided, (whether it be from the actual basal text, or from information provided by the teacher), or if a child needed to integrate the text and background knowledge to make an appropriate inference. Where the teacher's manual recommended that the children read the story prior to involvement in the inference-making

activities, the story was read by the researcher prior to analysis of the activity.

Inferential and Non-Inferential Type Questions

An examination of the pre and post-reading questions provided in the teachers' manuals that accompany the basal series was also undertaken. Each supplied question was analyzed to determine whether or not it was inferential in nature. This enabled the researcher to calculate the ratio of inferential to non-inferential type questions.

Inferential type questions are those in which the answer is not explicitly stated in the text. The reader is required to integrate background knowledge with information provided in the text to derive a plausible idea or conclusion.

The teachers' manual contains questions for each unit of each reader. In order to categorize these questions as either inferential or non-inferential the student reader texts were also examined to determine whether the answers to the questions asked were explicitly stated in the texts. This examination established the content of questions and revealed whether the answer to the question was stated for the child to read, or whether to answer the question the child would have to make appropriate inferences.

The foregoing procedure was altered slightly for

analyzing the kindergarten level readers. In most instances, the pre and post-reading questions are pertinent to the observation of a picture by the child rather than the actual reading of a written text. A procedure developed by Jett-Simpson (1976) to analyze inference in wordless picture books was used where there were pictures only and no written text in the students' reader. Using this procedure, the questions were categorized as either inferential or non-inferential, depending upon the actual picture (rather than text as in those readers with written text). The question was examined to determine if the answer to the question could be found by looking solely at the picture. An inference question based upon a particular picture was one in which the answer to the question was based somewhat on the picture fact but also included something beyond the actual picture facts. A non-inference question required a child to just make a statement about the actual picture facts.

Pilot Study

Before undertaking a full scale investigation of all three basal series, a pilot study of the grade one teacher's guidebook and student reader, entitled, Surprise! Surprise! from the Language Development Reading program by Thomas Nelson and Sons was conducted. This pilot study was

conducted to determine if the procedure previously described would be an effective method of obtaining the information needed to answer the three research questions posed. The questions were as follows:

- 1) Is inference prescribed for teaching in any or all of the basal series to be examined?
- 2) To what extent is inference prescribed for teaching in these programs?
- 3) How is inference presented for teaching in these basal programs?

The preliminary results from the pilot study indicated that the procedure used would enable the researcher to address the research questions posed in this study. As only one teachers' manual and one student text of one program of one publishers' series was used in this pilot study, the limited results revealed the following three points:

- 1) Yes, the skill of inferencing is indeed mentioned in the basal reader teacher manuals.
- 2) Although inference is indeed mentioned in the manual analyzed for this pilot study, the manual provides very minimal instruction methods, or suggestions for enhancing the development of a child's inference abilities.
- 3) Inference is taught in the basal series by

inference-related activities, and secondly, by inferential type questions. In some instances, activities that are identified by the teacher's manual as inference skill activities are not in fact inference-related activities according to the conventional definition of inference as utilized in this study.

Consider the following example from the teacher resource book for the text, Surprise! Surprise! (Nelson series, level 1, p. 136):

This activity helps children to express the inferences they have made from story information.

Ask questions such as these:

What do you think of the pets' day, or night, at school? Did they do the things you do?

Did they do anything that you don't do? Do you do things that they didn't do?

Do you think they like having Sandy for a teacher? Would you?

Why do you think they put all their work into the wastebasket when they heard someone coming?

Why do you think the custodian looked particularly at the chicken's picture?

What part of the story did you like best? Why is this your favourite part?

The first, second, and last questions in this activity are not conducive to developing a child's inference-making

ability according to the definition of inference utilized in this study. These three questions do not require the child to integrate the text and background knowledge to formulate a logical and plausible inference, they merely require the students to give a "Yes" or "No" response.

Recent reading research suggests that teachers' manuals should provide a blend of questions, both literal and inferential, with an emphasis towards a higher percentage of inferential type questions. This pilot study of the text, Surprise! Surprise! revealed that only about 25% of the questions stated in the teacher's manual could be classified as inferential type questions according to the description provided in the previous section on procedure.

I conferred with my thesis supervisor at every step of the coding. A minimum of one third of all the activities were analyzed by her to ensure the reliability of my coding. The minimum percentage of inter-rater reliability was .83.

Data Analysis

Since this study analyzed all the identified inference-making activities and all the supplied pre and post-reading questions as given in the teachers' manuals of all the series, inferential statistics were not required to analyze the data. Hence, the data are presented through the

use of descriptive statistics including frequencies, percentages, means, and proportions where appropriate.

Data concerning the frequency of inference type questions are reported for each reader text of each series along with the overall frequencies for basal series comparisons. A ratio of inferential to non-inferential questions was also derived for each grade level of each series and then combined to provide overall series ratios.

The total number of inferencing activities found in the teachers' manuals and student workbooks were analyzed to ensure consistency with the definition of inference used in this study. The result of this analysis was reported for each grade level of each series.

The findings from the data analyses enabled the researcher to answer the research questions posed in this study. Based upon the answers to the questions, specific recommendations for authors of basal series and teachers are presented.

CHAPTER IV

FINDINGS AND DISCUSSION

Introduction

This chapter presents and discusses the findings of the study. In the first section the basic question of whether inference is prescribed for teaching in the three basal series is discussed. The second section presents and discusses the actual frequencies and ratios necessary to address the extent to which inference is prescribed for teaching in the three basal series. The third section contains a qualitative analysis of the methods presented for teaching inference in the three basal programs. The final section of this chapter is a short summary of the main findings.

Inference in the Selected Basal Series

Question One: Is inference prescribed for teaching in any or all of the basal series examined?

Examination of teachers' manuals which accompany the three basal series selected for this study revealed that inference is prescribed for teaching in all three series.

The teachers' manuals for each series make extensive use of phrases which contain the word inference. A phrase such as "children use story recall to make inferences" is commonly found in the Nelson series teachers' manuals. The phrase "make inferences" is repeatedly found throughout the Gage series. The Ginn series uses the phrase "drawing inferences" to identify the inferencing process in its teachers' manuals.

In addition to identifying the process of inferencing, each series provides activities and questioning practices designed to develop childrens' inference-making abilities. In the Gage and Ginn series teachers' manuals, the processes or skills to be developed are identified by the appropriate phrases placed toward the left margin of the page. The actual instructions then appear to the right. To illustrate, the example shown below is an excerpt taken from the Gage teachers' manual, level 2, Hopscotch, p. 20.

attend to a story

note details

make inferences

"Spring": Listening to a story

Note: Before reading the story be sure pupils realize that some animals "sleep" all winter.

Tell pupils that Frog and Toad are good friends. The story is about what happened one spring to Frog and Toad. Instruct pupils to listen carefully to find out what did happen.

Read the story and ask the questions at the end of each section. (Do not show the pictures during the first reading.)

The Nelson series format is different from the Ginn and the Gage formats in that processes or skills are listed as headings with the instructions or activity described below. An example taken from the Nelson teachers' manual, level 1, Pets and Puppets, p. 46, follows:

MAKING INFERENCES

In this activity, children read dialogue drawn from the story and identify the speaker.

As already indicated, authors of the three basal series studied make liberal use of phrases containing the word "inference". Even though many questions are provided for the teacher to ask the children, it is not always clear which questions are meant to develop which skill. The authors often appear to indicate that particular questions help to develop a child's inference-making ability when in fact the questions are not of an inferential type. The examples discussed in the following pages illustrate failures of each series to specifically identify inferential questions.

Example A: Gage teachers' manual, level 1, Rip Along, p. 31.

Questions:

recall detail Why would it be hard to find a place to keep a dragon?

making inferences

Where would you keep a dragon?
 How would a dragon behave at
 the dinner table?

What would happen if a dragon
 ate too fast?

How would a dragon with the
 hiccups sound?

What might happen if you took a
 dragon for a walk?

What could you do with a puppy
 that you couldn't do with a
 dragon?

What sounds would you hear if a
 dragon could sing?

How do dragons feel about
 water?

The question, "How do dragons feel about water?" certainly does not require the child to make an inference in order to answer this question in this particular context. In the story which is to be read prior to answering the questions, the statement: "But dragons hate water" appears. This question does not require the reader to make an inference since the answer to the question was explicitly given in the story. However, the placement of questions to the right of the heading "make inferences" implies that these questions would require the children to make inferences in order to correctly respond even though the last question involves recalling detail.

Example B, also taken from the Gage basal series, is a second illustration of how the authors of that series suggest certain questions are of an inferential nature when they are not.

Example B: Gage teachers' manual, level 1, Skip Along, p. 95.

attend to
a poem

Tell them to listen as you read a poem about things someone likes.

AND...I LIKE

When I wake up in the morning,
I like a little sun;
I like a little laughter, and
I like a little fun.

and

I like a little song that
is very light and gay;
I like a little tune to
brighten up my day.

and

I like a little friend to
come and play with me.
I like a little swing in
the shade of a tree,

and

I like a little cookie with
a raisin hidden in it.
(I think I'll have another
in a very little minute.)

and

I like the pretty colors of
the evening's setting sun.
I like a little story when
my busy day is done.

-Ada Phipps Harper-

Following the listening activity, discuss the poem using the following questions. If necessary, reread selected stanzas, then ask the questions.

Stanza 1:

What does this person like in the morning?

recall
details

**make
inferences**

Stanza 2:

What kind of song does she like?

How do you think the tune makes her feel?

Stanza 3:

What does she like to do with her friend?

Where do they play?

Stanza 4:

What does she like to eat?

How can you tell she is going to have a cookie soon?

Stanza 5:

What does she like about the setting sun?

When does she like to hear a story?

What things mentioned in the poem are things you like too?

Why do you like each?

As can be seen from the example, the children are read the poem, "AND...I LIKE", and then asked questions about it. By looking at the page it appears that the questions provided for stanzas 2, 3, 4, and 5 would require the children to make inferences. However, close examination of the questions reveals that the first question listed for each stanza is not an inferential type question; the answers are clearly stated in the text.

Examples C and D are taken from the Ginn basal series. Both of these examples illustrate the failure of their authors to clearly indicate which questions develop which skills.

Example C: Ginn teachers' manual, level 6, Mr. Mugs is Kidnapped, p. 39.

Observing picture details	Have the children look at the illustrations on pages 34 to 36 and discuss them briefly. "Who are Sir Charles and Sir Egbert visiting on page 34? Why do you think they went to see the wizard? What do you see on page 35? What is happening on page 36?"
Drawing inferences	
Formulating questions	Ask the children if they have any questions they would like to add to the question box. They may suggest such questions as, "How did Sir Egbert and Sir Charles kill the dragon? Did the wizard help them? Did Olaf help them?"
Reading Recalling details; verifying answers	

Example D: Ginn teachers' manual, level 6, Mr. Mugs is Kidnapped, p. 4.

Observing picture details	Have the children look at the pictures in Part Two of the story and briefly discuss the happenings depicted. "What is the manager of the apartment building doing on pages 12 and 13? Whom do you think she might be telephoning? Why? What is happening in the picture on pages 14 and 15? How do you think Gus feels? Why? What do you think is happening in the picture on the last page?"
Drawing inferences; inferring feelings	

In example C, the question, "What do you see on page 35?" does not require the children to draw an inference even though the placement of the question would indicate that the skill of drawing inferences would be developed. The suggested skills on the left side of the page do not clearly indicate what questions pertain to what skills. In example D, the question, "What is happening in the picture on pages

14 and 15?" is not an inferential question in this situation even though the authors seem to indicate otherwise. The students are simply asked to name what is in the pictures.

Even though the Nelson series identifies inferential questions in a more specific manner than does Gage or Ginn, one can find examples of where questions have been incorrectly labelled. Consider example E.

Example E: Nelson teachers' manual, level 1, Pets and Puppets, p. 25-26.

This activity helps children to express some of the inferences they have made from story information.

Discuss questions such as these:

What do you think was in Jack's box before the story began? What do you think was in Ted's box?

How many children worked on this project? At the beginning of the story, how did they decide what to make?

Would there have been other ways to decide?

Do you think they worked well together? What makes you think so?

Suppose they decided to celebrate their work by having a picnic in the house. Where do you think the idea of a picnic would come from? How do you think the children would go about it?

Two of the questions in the list provided do not require the children to make inferences. The answers to the second and third questions are directly provided in the story read previously to answering the questions.

In addition to problems related to identification of inferencing questions, many of the directions and instructions provided for teachers are unclear. This difficulty can be found in all three series as evidenced by the following examples:

Example A: Gage teachers' manual, Level 7, Trampolines, p. 20.

MAKE INFERENCES

Guiding the reading.
Have pupils read pages 17 and 18.

This example provides no direction or suggestion as to what "make inferences" has to do with having the children read particular pages. It does not give the teacher any idea of what an inference is, or how having children read these pages will aid in the development of childrens' inferencing abilities.

Example B: Ginn teachers' manual, level 2, Mr. Mugs Plays Ball, p. 75.

Observing
and
discussing
picture
details;
drawing
inferences

Direct the pupils to turn to page 22 in their readers and ask one of the group to point out the title. Read the title to the group.

Discuss each picture on pages 22 and 23 in turn. Establish that the children in the pictures want to find out what are some things that grow outdoors. In the first picture the children and their teacher go out into the country and stop at a roadside table. On sheets of paper the children brought with them, they draw pictures of various things they see growing. Have the group suggest what things these children might include in their pictures.

Next, the children stop at a fruit store where the produce is displayed outdoors. Point out and read the name and the products listed on the store window. Have the pupils suggest questions that the children in the picture might ask the owner and possible answers he might give them. The children draw pictures of the various kinds of produce that are for sale.

This example illustrates that there is no connection between the identified skill of drawing inferences and the actual instructional guidelines presented. The phrase drawing inferences is presented, but how the children can draw inferences is not addressed.

Example C: Nelson teachers' manual, level 6, Ireat Street, p. 86.

MAKING INFERENCES

In this activity, children infer the feelings of story characters in various situations. The following words may be used to tell how each character felt.

In this example, the suggestion for teaching does relate specifically to inference-making, however, a teacher with a limited knowledge of the process of inference may fail to realize that a child would have to integrate background knowledge and text information to derive inferences.

To summarize, it can be concluded that the three basal series selected for this study do prescribe the teaching of inference. However, specific questions to help

develop specific skills are not always easily identifiable, and directions given in the teachers' manuals for teachers are not always clear.

The next section of this chapter will discuss the second question posed in this study.

Extent of Inference in The Selected Basal Series

Question Two: To what extent is inference prescribed for teaching in the three basal series selected for this study?

Before actual discussion of the extent to which inference is prescribed for teaching in the three basal series, the methodology used to distinguish between questions and activities will be described. Post-reading questions are those questions based upon stories found in the teachers' manuals and stories found in the students' texts. These questions are read by the teacher to students. These questions were subsequently classified as inferential or non-inferential according to the definition of inference established in this study. To clarify this explanation, an example from the Nelson series is provided.

Example: Nelson teachers' manual, level 1, Surprise! Surprise!, p. 36.

This activity helps children to express the inferences they have made from story information. Ask questions such as these: ...

The questions for this activity are based upon a previously read story by a teacher or students, hence these questions were recorded as post-reading questions even though the manuals referred to these questions as an activity. All suggested inference-making activities found in the teachers' manuals that were not reported as post-reading questions as well as activities found in student workbooks were reported as inference-making activities.

Findings relative to the extent of basal usage in the Gage, Ginn and Nelson series are reported and discussed in the following sections.

Gage Series

All teachers' manuals for levels one to seven of the Gage basal reader series for the primary grades identify specific questions and specific activities designed to aid in the development of childrens' inferencing abilities. As noted in an earlier section, the layout of the teachers' manuals does not clearly indicate which questions the authors are presenting to develop inferencing abilities. Therefore, the researcher was forced to closely examine each question and subsequently classify it as inferential or non-inferential according to its context and the definition of inference utilized in this study.

Table 2 shows the frequency of post-reading questions

TABLE 2

GAGE SERIES: POST-READING QUESTIONS

<u>Grade</u>	<u>Level</u>	<u>Inferential Questions</u>		<u>Non-Inferential Questions</u>		<u>Total</u>	
		<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>
1	1	63	41.7%	88	58.3%	151	100%
1	2	134	44.8%	165	55.2%	299	100%
1	3	234	46.5%	269	53.5%	503	100%
2	4	216	47.0%	244	53.0%	460	100%
2	5	185	44.3%	233	55.7%	418	100%
3	6	118	32.3%	247	67.7%	365	100%
3	7	155	36.9%	265	63.1%	420	100%
		<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
		1105	43.9%	1411	56.1%	2516	100%

in the Gage series. As the table shows there was a total of 2516 post-reading questions of which 43.9% were inferential and 56.1% were non-inferential. The level 4 manual used in grade 2 had the highest percentage of inferential questions (47%) while the level 6 manual used in grade 3 had the lowest percentage (32.3%). At all grade levels there were more questions of a non-inferential nature than of an inferential nature. There does not appear to be any trend toward changes in the ratio of inferential to non-inferential questions with respect to grade level and age. However, there is a slight decrease in the ratio of inferential to non-inferential questions at the grade three level.

To determine the number of inferencing activities in the Gage series, the teachers' manuals and student workbooks were analyzed. The results of the analysis are shown in Table 3. It can be seen that there was a total of 19 inference-making activities found throughout the teachers' manual and student workbooks. The greatest number of inference-making activities was found at level 7 grade 3, while the lowest number was at level 5, grade 2.

Ginn Series

All teachers' manuals for levels one to seven of the Ginn basal reader series for the primary grades identify

TABLE 3

GAGE SERIES: INFERENCE ACTIVITIES

<u>Grade</u>	<u>Level</u>	<u>Frequency of Activity</u>
1	1	4
1	2	3
1	3	3
2	4	1
2	5	0
3	6	1
3	7	7
Total		19

specific questions and specific activities which can be used by teachers to help develop childrens' inference-making abilities. Like the Gage series, the Ginn teachers' manuals do not clearly specify which questions are designated to aid in the development of which skills. The same procedure used for the classification of questions and activities in the Gage series was also used with the Ginn series.

The results of the post-reading question analyses for the Ginn series are reported in Table 4. The table shows an overall total of 3191 post-reading questions of which 914 (28.6%) were identified as inferential and 2277 (71.4%) were identified as non-inferential. The percentage range for inferential questions was from 16.6% to 37.8%. The frequency of non-inferential questions far outweighs the frequency of inferential questions at all grade levels.

Table 5 presents the data concerning the number of inferential activities found in the Ginn teachers' manuals and student workbooks across all levels. This series has a total of 54 inference-making activities with the greatest number (10) found at level 3, grade 2 and the lowest number (4) found at level 1, grade 1. While the frequency of inferential questions is low in this series, there are a fair number of inferential activities in comparison to the Gage series.

TABLE 4

GINN SERIES: POST-READING QUESTIONS

Grade	Level	<u>Inferential Questions</u>		<u>Non-Inferential Questions</u>		<u>Total</u>	
		<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>
1	1	239	37.8%	394	62.2%	633	100%
1	2	174	34.9%	324	65.1%	498	100%
2	3	224	35.3%	411	64.7%	635	100%
2	4	59	19.4%	245	80.6%	304	100%
2	5	72	16.6%	362	83.4%	434	100%
3	6	74	21.4%	272	78.6%	346	100%
3	7	72	21.1%	269	78.9%	341	100%
		914	28.6%	2277	71.4%	3191	100%

TABLE 5

GINN SERIES: INFERENCE ACTIVITIES

<u>Grade</u>	<u>Level</u>	<u>Frequency of Activity</u>
1	1	4
1	2	9
2	3	10
2	4	9
2	5	8
3	6	7
3	7	7
Total		54

Nelson Series

The Nelson series is different from the two previously described series in that it presents a level K program designed for kindergarten children. The teachers' manual for level K does not use the term inference. There are no specific inference questions or activities stated. However, there are questions presented in the teachers' manual that do require the children to make inferences in order to answer the questions. These questions were primarily based upon picture observation and were categorized as inferential or non-inferential by using a methodology described in chapter three of this study. Levels one through seven do present specific inferential questions and inference-making activities which were classified according to the procedure used in both the Gage and Ginn series.

The results of the Nelson post-reading question analyses are presented in Table 6. This table shows there were a total of 1492 post-reading questions of which 354 (23.7%) were inferential and 1138 (76.3%) were non-inferential. The highest ratio of inferential to non-inferential questions was at the kindergarten level (28.5%) and the lowest ratio was at the level 6, for grade 3 (13.5%). Like both the Gage and Ginn series, there were more non-inferential questions than inferential questions.

TABLE 6

NELSON SERIES: POST-READING QUESTIONS

Grade	Level	<u>Inferential Questions</u>		<u>Non-Inferential Questions</u>		<u>Total</u>	
		<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>
K	K	70	28.5%	176	71.5%	246	100%
1	1	96	27.9%	248	72.1%	344	100%
1	2	42	42.0%	58	58.0%	100	100%
1	3	21	19.4%	87	80.6%	108	100%
2	4	30	17.3%	143	82.7%	173	100%
2	5	31	24.2%	97	75.8%	128	100%
3	6	25	13.5%	160	86.5%	185	100%
3	7	39	18.8%	169	81.2%	208	100%
		354	23.7%	1138	76.3%	1492	100%

Table 7 reports the frequency of inferential activities in the Nelson series. As the table shows, there were a total of ~~57~~ activities in grades one through three. There were no inference-making activities found at the kindergarten level even though there were some inferential questions presented.

Gage, Ginn and Nelson Series Comparison

A comparison of the three basal series shows that the Gage series had a total of 2516 post-reading questions, Ginn had 3191 post-reading questions and Nelson had only 1492 post-reading questions. Of great interest in this study was the ratio of inferential to non-inferential questions. As shown in Table 8, overall, the Gage series had the higher ratio of inferential questions (43.9%), followed by Ginn (28.6%) and last by Nelson (23.7%). In terms of frequencies, this means that the Gage series had a total of 1105 inferential questions, the Ginn series had a total of 914 inferential questions, and the Nelson series had only 354 inferential questions. Therefore it can be seen that overall, the Gage series ranked first, the Ginn series ranked second and the Nelson series ranked third both in terms of the total number of inferential questions and the ratio of inferential to non-inferential questions.

The Gage and Ginn series do not provide materials for

TABLE 7

NELSON SERIES: INFERENCE ACTIVITIES

<u>Grade</u>	<u>Level</u>	<u>Frequency of Activity</u>
K	K	0
1	1	4
1	2	5
1	3	6
2	4	13
2	5	6
3	6	9
3	7	14
Total		57

TABLE 8

RATIO OF INFERENTIAL TO NON-INFERENTIAL
QUESTIONS BY GRADE ACROSS SERIES

<u>Grade</u>	<u>Series</u>		
	<u>GAGE</u>	<u>GINN</u>	<u>NELSON</u>
K	-	-	28.5%
1	44.3%	36.4%	29.8%
2	45.7%	23.8%	15.8%
3	34.6%	21.3%	6.8%
Overall	43.9%	28.6%	23.7%

use at the kindergarten level. In the Nelson series, 28.5% of the post-reading questions were classified as inferential. At all other grade levels, (1, 2, and 3) the Gage series ranked first in terms of frequency and ratio of inferential type questions. In addition to ranking second overall, the Ginn series ranked second at every grade level.

The frequency of inferencing activities overall and at each grade level is shown in Table 9. It can be seen that the Nelson series had the greatest number (57) of inference activities, the Ginn series had the second largest number (54) and the Gage series was lowest (19). The ranking of the three series in terms of total numbers of inferencing activities is exactly the opposite as that for the post-reading inferential questions.

Even though the Nelson series provides materials for instruction at the kindergarten level, the researcher found no inference-making activities. At the grade one and grade three levels the Nelson series had the most inference-making activities, the Ginn series had the second most and the Gage series had the least. At the grade two level, the Ginn series provided the greatest number of inference activities, followed by the Nelson series and last by the Gage series.

The next section of this chapter will discuss the third question posed for this study.

TABLE 9

FREQUENCY OF INFERENCE ACTIVITIES
BY GRADE ACROSS SERIES

<u>Grade</u>	<u>Series</u>		
	<u>GAGE</u>	<u>GINN</u>	<u>NELSON</u>
K	-	-	0
1	10	13	15
2	1	27	19
3	8	14	23
	—	—	—
Totals	19	54	57

**Methodologies by Which Inference is Taught
in the Selected Basal Series**

Question Three: How is inference presented for teaching in the three basal reading programs selected for this study?

As indicated in the first section of this chapter, the Gage, Ginn and Nelson basal series do prescribe the teaching of inference skills. All three series present ideas or suggestions for helping children to develop their inference-making ability. Suggestions common to the three series include pre-reading questions, post-reading questions and student workbook activities. Workbook activities include tasks such as: fill in the blanks; complete sentences, answer riddles, drawing inferences from observation of pictures and drawing inferences from text material. This section of the chapter outlines the methods used to teach inference in each of the basal series examined. Each series will be discussed individually in addition to an overview of similarities and differences of the methodologies used across the three series.

Gage Series

Researchers have concluded that when reading a reader relates new text information to information already stored by the reader or what has been commonly referred to as

background knowledge. In many instances children have background knowledge that is pertinent to the text, but they do not always bring this background knowledge to the text unless guided or prompted to do so. Researchers in many studies have indicated the importance of making a child aware of his/her background knowledge before the actual reading of a text. A reader cannot make good inferences about a text unless he/she is able to incorporate text information with background knowledge. Considering these findings, the first teaching strategy examined in the basal reader series was the suggested pre-reading questions recommended for teachers' use. This section also includes an analyses of post-reading questions and student workbook activities.

Pre-reading questions

Examination of levels one to seven in the Gage basal series revealed a total of only ten pre-reading questions. In most cases the teachers' manuals suggested that the teacher relate a very brief introduction of the story to the children and then proceed to either read the story or to have the students read the story. Examples of this type of story introduction follow.

Example: Gage teachers' manual, level 7,
Trampolines, p. 20.

Preparation for reading

use title to predict Tell pupils that this story was first written in French by a Montreal author and was translated for their book. On the basis of the title, have them predict when it takes place, and whether it will be realistic or fanciful.

Example: Gage teachers' manual, level 6, Handstands, p. 180.

Present the title. Tell pupils that the story they will hear is about an unusual elephant hunter - a boy who lives in the city and didn't leave it!

attend to a story Have them listen to the story to find out about James and the elephants he hunted. Read "The Elephant Hunter."

Story introductions such as these, where children are not asked to really think about an idea, make predictions or draw inferences, do not seem to be compatible with the findings and recommendations presented by researchers in the field of reading who have found that making inferences is a vital component of reading comprehension.

Post-reading questions

The Gage basal series for levels one to seven provides a total of 2516 post-reading questions. For the purpose of this study, post-reading questions refer to questions that are presented in the teachers' manuals for teachers to ask children after a story had been read or

after the observation of a particular picture. An example of questions after observation of picture detail follows.

Example: Gage teachers' manual, level 6, Handstands, p. 180.

Direct pupil's study of the first set of illustrations.

Ask: What is happening in each of the pictures?

What would be a good title for this set of pictures?

Post-reading questions were categorized as either inferential or non-inferential according to the criteria established in chapter three. Questions presented in the teachers' manuals were not always easily identifiable as to what skill the question was to reinforce. Still, the researcher identified a total of 1105 questions in this series which could be helpful in developing children's inference-making abilities. An example of such post-reading inferential questions is provided.

Example: Gage teachers' manual, level 7, Trampolines, p. 95.

What is Miklan up to now?

Do you think it will work?

What did Miklan mean when Bardash said, "There's something you aren't telling me" and he answered, "That's true for sure?"

Student workbook activities

Activities in the student workbooks are usually geared toward reinforcing some of the skills presented in

the teachers' manuals. In most instances children are asked to complete workbook activities independently. This study revealed various kinds of activities in student workbooks to promote the skill of making inferences. A total of 19 activities were found in the Gage series for levels one to seven. The different types of activities are explained with the aid of specific examples for illustration purposes.

Interpret riddles. Riddles were found in both the teachers' manuals and students' workbooks to help children make inferences. Along with some of the riddles a series of possible solutions were given and the children are required to select the most appropriate answer. In other cases, there were no possible answers provided for the riddle. An example of a riddle activity from a student workbook is provided.

Example: Gage student workbook, level 7, Springboards, p. 1.

Guess What?

What kind of apple has a bad temper?

☐

Which kind of house weighs the least?

☐

Where does a fish keep its money?

☐

Possible Answers

1. a lighthouse,
2. in a river bank
3. a crab apple

Having children read riddles or questions such as these may help them to bring to mind their background knowledge and to integrate it with the text information to infer the riddle answer. While these types of activities stretch the definition of inference, it is beyond the scope of this study to address such an issue.

Information content. This type of activity includes short paragraphs followed by a set of questions about that particular passage. After reading the text information the child is asked to answer questions which require an understanding of text details and good inferences such as the following activity.

Example: Gage student workbook, level 0, Springboards, p. 15.

Sometimes birds crash into windows and knock themselves out. Here are some things you can do to help.

1. Get a cardboard box.
2. Pick up the bird gently and put it into the box. Close the lid to make it dark inside the box.
3. Take the box to a safe, quiet place in your house.
4. Leave the bird in the dark box for an hour or two. Don't peek at the bird and don't try to feed it. Just let it rest quietly.
5. Take the box outside to a spot with trees or bushes.

6. Open the box. The bird will probably fly away to the nearest tree or bush.

7. Sometimes the bird will be badly hurt and will die. Wrap it in paper, and then bury it or put it in the garbage. Maybe you'll feel upset because the bird died - but you have done everything possible to save it.

Questions to answer

1. Why should you put an unconscious bird in a box?

2. How long should you leave the bird in the dark box?

Although this activity has been reported as inferential in nature, only the first question requires the reader to make an inference. The answer to question two is explicitly stated in the text.

Completing sentences. In this type of activity a partial sentence is presented and the child is asked to choose a good ending for the sentence from a list supplied. Two examples follow.

Example: Gage student workbook, level 7, Springboards, p. 46.

When the children heard what Hotrod did to the report cards, they felt

angry	curious	<u>amused</u>
happy	upset	afraid

Example: Gage student workbook, level 6, Springboards, p. 62.

Terry knew that she could rescue Smokey because

x she had a good plan.

she knew that the kitten would follow the mouse.

the kitten would come when he heard his name called.

Making inferences from pictures. This kind of activity requires the child to make an inference from pictures with a sentence or phrase as a base. This activity is different from the observation of picture details as discussed in the post-reading question section. To carry out the task, a child is asked to draw a line from one picture (the starting point) to a picture that would convey the message of the sentence, as well as in some way be related to the starting point picture. An example is provided to help clarify this explanation:

Example: Gage student workbook, level 1, Do this do that, p. 13.

I Like To Go (sentence)

picture of

girl in swimsuit
boy reading a book

picture of

library
swimming pool

The child would be able to make an inference that the "girl in the swimsuit" because of her attire would like to go to the swimming pool, not the library, therefore the

child would draw a line from the girl in the swimsuit to the picture of the swimming pool.

The Gage series does present many questions and some activities for teachers to use to help develop inference-making skills in children. Both the post-reading and student workbook activities are positive features of this series in helping to develop childrens' inferential abilities. The infrequent use of pre-reading questions or guided discussion questions prior to the reading of a story is not in line with current reading research, nor conducive to promoting good inference-making abilities.

Ginn Series

Many of the inference-making activities and types of questioning practices found in the Gage series are also common to the Ginn Series. Where such overlap occurs, the activity will be noted but the researcher does not feel it necessary to fully describe and illustrate those activities again.

Pre-reading questions

The importance of pre-reading questions as a building block upon which to eventually draw inferences has already been discussed. The Ginn series has a different approach to pre-reading situations than the Gage series. The Ginn

series encourages children to devise their own pre-reading questions based upon their background knowledge and the limited text information provided them up to that time. There are some pre-reading questions provided in the teachers' manuals but the major emphasis appears to be on child developed questions. Examples to illustrate this procedure follow.

Example: Ginn teachers' manual, level 3, First Prize for Mr. Mugs, p. 203.

Developing Pupil Inquiry

Using
table of
contents

Have the children turn to the table of contents and find the title of the next story.

Predicting
details

"What is the number of the next story? What is the title of the story?"

"In the last story we read, what were the children in Pat and Curt's class getting ready to do? What do you think will happen next?"

Formulating
questions

"What questions would you like to have answered as you read this story?" If the pupils have difficulty posing questions, model one or two examples for them. ("I would like to know what plans for the dog show the children will make. How would you ask that question?")

Example: Ginn teachers' manual, level 3, First Prize for Mr. Mugs, p. 155.

Formulating
questions

Encourage the children to think about the title and suggest questions they would like to have answered in the story. Some examples of questions the pupils might ask are:

Where are the birds?
 What is for the birds?
 What do they do?
 Are the birds with the animals from the last story?
 What happens to the birds?

By asking children to formulate their own questions, the teacher is getting the children actively involved with the story before most of the information is presented to them in the actual reading.

Post-reading questions

The Ginn basal series presents many questions for the teacher to ask after text readings. The researcher recorded a total of 3191 post-reading questions. Only 914 of these questions or less than one third could be categorized as inferential questions. The series did not always make clear distinctions as to what post-reading questions developed which particular reading skill. The Ginn series also gave considerable emphasis to the observation of picture details. The series suggests that teachers allow students to formulate their own questions even after pictures have been observed and discussed. An example illustrating this is provided.

Example: Ginn teachers' manual, level 3, First Prize for Mr. Mugs, p. 155.

Observing picture details; formulating questions	Let the children look at the pictures on the succeeding pages of the story and discuss what is happening. If the pupils would like to suggest further questions for reading, add the questions to the list and
---	--

read them together with the group. The children might suggest questions such as: "Where is the little bear going? What are the other animals saying to him? Are the other animals angry?"

Constant encouragement for the children to formulate their questions is a very positive feature of this series and does seem to get children into the practice of making inferences both before and after presentation of text material.

Creative thinking

This label is used periodically in the teachers' manual throughout the series. Activities included under this heading are provided to enable children to make inferences by considering a given statement, to decide whether or not they agree with the statement, and to formulate the reasons behind their thinking. An example to illustrate this type of activity follows.

Example: Ginn teachers' manual, level 3, First Prize for Mr. Mugs, p. 156.

Creative Thinking

**Drawing
inferences;
supporting
sentences**

Do the following exercise orally, or write the given statements on the chalkboard. Have the children consider each statement in turn and then tell whether they agree or disagree with it. Encourage the pupils to give reasons for their answers.

1. Clifford Bear really wanted to go to school with his friends but he decided to stay home anyway.

2. When Clifford stayed home from school, he felt very happy.

3. When Clifford stayed home from school he felt lonely.

Activities of this type are very good for helping children to integrate their background knowledge with the text information to derive inferences.

Student workbook activities

Many of the activities presented in the Ginn series student workbooks are very similar to those of the Gage series. Activities common to both series are identified. New or different types of activities are fully described and illustrated. Activities common to both series include: interpret riddles; information content; completing sentences; and, making inferences from pictures.

One workbook activity found in the Ginn series but not in the Gage series is classifying or describing the main character by descriptive words. This type of activity requires the child to read a paragraph and then based upon integration of text information and reader's background knowledge decide upon appropriate descriptive words for the main character. An illustration is given.

Example: Ginn students workbook, level 6, Mr. Mugs Book, p. 8.

Read each story and the words below the

story. Underline the words that tell what the main character is like.

Blackie is Farmer Smith's cat. She spends most of her time in the barn catching mice. "Blackie is the best mouser I've ever seen!" says Farmer Smith proudly. Blackie has two kittens. She takes very good care of her little ones. One day she even chased away a big dog who came in the farmyard while she and the kittens were playing.

brave	mean
sad	loving
helpful	restless

A child must be able to integrate text information and background knowledge to derive the implicit messages of the text, in this case to find different descriptions of the cat.

Completing stories

Both the Gage and Ginn series use the technique of having children make inferences to complete sentences. The Ginn series further expands this technique by presenting children with a short story which is not complete. Children are asked to complete the story with the aid of an ending question. An example of this is provided.

Example: Ginn student workbook, level 7, Mr. Mugs Book, p. 10.

There once was a young man who was poor but kind. One day he saved the life of a magic frog. "I will give you three wishes as a reward," the frog told the young man.

"Food for my family is my first wish," said the young man. "And my second wish is a snug warm house."

"How about something for you?" asked the frog.

Just as the man began to make his wish, he saw a poor ragged boy. What will he do?

Activities such as this help promote inferential skills which are a prerequisite for reading for meaning.

The Ginn series provides both questions and activities for teachers to use as a means of guiding children to develop their inferencing skills. It should be noted however that less than one third of the post-reading questions were recorded as inferential type questions. The low ratio of inferential to non-inferential questions is not consistent with the suggestions of current reading researchers.

Nelson Series

The Nelson series contains many similar types of questions and inference activities to the Gage and Ginn basal series. Rather than repeat identical methodologies, only common questioning practices and activities are identified. Activities or procedures unique to this series will be discussed and expanded upon.

Pre-reading questions

The Nelson series provides some pre-reading questions for teachers to ask students prior to reading a story but the series is not consistent in providing questions for all stories. Less than 50% of selections are accompanied by pre-reading questions.

Post-reading questions

The Nelson series for levels kindergarten to seven provides a total of 1492 post-reading questions. Only 354 of these questions were categorized as inferential type questions. The remaining 1038 were categorized as non-inferential. Post-reading questions related to the observation of picture detail was not a device commonly prescribed for use with levels one to seven, although there were some instances of it. The majority of questions relating to picture details were found in the level K part of the series as this part of the program is based mainly on discussion of pictures rather than actual text for children to read.

Identity of story characters

This activity is quite similar to the previously discussed inference-making activity of interpreting riddles. However, in this activity the children are asked

to infer a character's identity rather than the identity of an object. The Nelson series is the only series of the three examined to distinguish between interpreting riddles and identifying story characters. Consider the following example.

Example: Nelson teachers' manual, level 5, Heads and Tails, p. 91.

"I am very beautiful. I have soft white fur and little black feet. I like to trot after my mother. Who am I?"

This type of activity requires the child to integrate some of the character information previously read with the text information to decide what specific character the text is referring to.

Student workbook activities

All of the types of inferential activities presented by the Nelson series in student workbooks for levels K to 7 were similar to activities presented by the Gage or Ginn series. These include: interpret riddles, information content, completing sentences, completing stories, and making inferences from pictures.

The Nelson series does present questions and inference-making activities to promote children's inferential reading skills. The total number of post-reading questions whose answers require a child to make an inference is very

low. In fact, the Nelson series has the lowest proportion of inferential questions to non-inferential questions of the three series examined. However, this series does contain the largest number of inference activities (57) which is a positive feature of the program.

It should be noted that to maintain consistency throughout the chapter, the Gage series was the first discussed followed by the Ginn and Nelson series. Due to the Gage series being discussed first, many examples illustrating procedures or methodologies were taken from that series. The disproportionate number of examples taken from each series or its placement in this discussion is not indicative of any bias.

Overview

Table 10 presents an overview of methodologies used in the three basal series to teach inferencing. It can be seen that all three series use pre-reading questions, post-reading questions, interpret riddles, information content, completing sentences, and making inferences from pictures. The Ginn series provides three additional activities in the form of creative thinking, classifying main characters by descriptive words, and completing stories. The activity of completing stories is also found in the Nelson series.

While all three series provide a diversity of infer-

TABLE 10

METHODS BY WHICH INFERENCE IS PRESENTED
FOR TEACHING

<u>Method</u>	<u>Series</u>		
	GAGE	GINN	NELSON
pre-reading questions	*	*	*
post-reading questions	*	*	*
picture details	*	*	*
creative thinking		*	
student workbook activities			
interpret riddles	*	*	*
information content	*	*	*
completing sentences	*	*	*
making inferences from pictures		*	*
classifying main character by descriptive words		*	
completing stories		*	*

ence-making activities, the actual frequency of inference-making activities is very low.

Summary

The results of the data analyses revealed that inference is prescribed for teaching in the three most commonly used basal series for the primary grades in Canada. However, the authors of these series do not always clearly identify the specific skills that post-reading questions are related to. In other instances, examples can be found whereby questions and activities seemingly identified by the authors as inferential are in fact not inferential according to the definition of inference utilized in this study. Examples have also been found to illustrate that some directions provided by the authors of these series are not always clear or indeed helpful for the teacher.

In order to examine the extent to which inferences are prescribed for teaching in these basal series, pre-reading questions as well as the total number of post-reading questions and inference-making activities in each series were identified. All three series provided some pre-reading questions in their teachers' manuals. The Gage series provided only a minimal number while the Nelson series provided pre-reading questions for about one-half of the

selections. The Ginn series provided pre-reading questions for many selections as well as encouraged children to formulate their own pre-reading questions.

All post-reading questions were subsequently categorized as inferential or non-inferential in nature. This procedure showed that in terms of post-reading inferential questions, the Gage series provides both the greatest number and the greatest ratio of inferential questions at all grade levels. The Ginn series had the second highest frequency and the second highest ratio of inferential questions at all grade levels. The Nelson series had the lowest number and the lowest ratio of inferential questions at all grade levels.

In terms of inferential activities, the Nelson series provided the greatest overall number followed by the Ginn series and lastly by the Gage series. The Nelson series also had the greatest number of inferential activities at each grade level except for the grade two program where the Ginn series provided the most.

The qualitative analysis of methodologies presented for teacher use showed that the three series used many identical teaching strategies. These included: pre-reading questions, post-reading questions, picture details, interpret riddles, information content, completing sentences and making inferences from pictures.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction.

This chapter presents a review of the study and a presentation of the conclusions formulated from the findings of the study. The conclusions are followed by recommendations for authors of basal reader series, authorities responsible for selection of basal series, teachers of primary children, and others engaged in further research.

The Study in Review

The purpose of this study was threefold. The first purpose was to identify whether inference is prescribed for teaching in selected basal reader series used in the primary grades throughout Canada. The second purpose was to identify to what extent inference is prescribed in these basal series. To explore how inference is presented for teaching in these basal series was the third goal of this study.

A review of current literature and reading research related to inference and basal reader series afforded the investigator the following assumptions to guide this study.

- 1) Inference is a vital component of reading comprehension.
- 2) To make an inference a reader must be able to integrate text information with background knowledge.
- 3) Young children need guidance and ample opportunities to develop their inference-making abilities.
- 4) Little attempt has been made to correct previously identified weaknesses of basal series.
- 5) No studies of basal series used in Canadian schools have been found. However, numerous studies conducted in the United States on basal series indicate that basal series do not appear to be promoting the development of inference-making abilities in young children.

A survey of the Department of Education for each province and territory revealed that the three most commonly used basal series in the primary grades were: Expressways by Gage, Starting Points in Language Arts by Ginn, and Language Development Reading by Nelson. Hence, these three series were selected for examination in this study.

All teachers' manuals, student workbooks, and student

reader texts of each selected series were examined to determine the answers to the specific research questions posed in this study. After confirmation that there was reference to the process of inference, the total number of pre-reading questions, post-reading questions and inference-making activities were recorded. All post-reading questions were subdivided into either inferential or non-inferential type questions. The methodologies presented in each series were examined and subsequently reported.

This study found that inference was prescribed for teaching in all three of the basal series studied. The authors of the Gage, Ginn and Nelson series included inferential type questions and activities in their series. However, in some places, inferential questions are not clearly identified, are incorrectly labeled, and poor instructions are provided for teachers. The Gage series had the highest frequency of inferential questions (1105) and also the highest ratio of inferential to non-inferential type questions (43.9%). The Ginn series had the second highest frequency of inferential questions (914) and also the second highest ratio of inferential to non-inferential type questions (28.6%). The Nelson series had the lowest frequency of inferential questions (354) and also the lowest ratio of inferential to non-inferential type questions (23.7%). The Nelson series had the highest number of inference-making

activities (57), the Ginn series had the second highest (54) while the Gage series had the lowest number of inference-making activities (19). This study also revealed that inference is presented for teaching through various methodologies including pre and post-reading questions, and a variety of inference-making activities.

Conclusions

The findings of this study justify the following conclusions:

- 1) Although the process of inference is identified by the three basal series examined, there is confusion on some pages of the teachers' manuals with the identification of which questions the authors present as being related to specific skills.
- 2) Each series presents a variety of inference-making activities.
- 3) Of the three series examined, the Gage series offers the greatest number of post-reading inferential type questions that teachers can present to students to help develop their inference-making ability.
- 4) Each series provides only minimal instructions

that can serve as guides to teachers to help develop children's inference-making abilities.

- 5) The Gage series has the highest ratio of inferential to non-inferential questions. The Ginn series has the second highest ratio of inferential to non-inferential questions while the Nelson series has the lowest percentage. These findings indicate that of the three series examined, the Gage series seems to be the most reflective of current research findings in relation to the process of inference.

- 6) All three series differ in the degree to which they emphasize pre-reading questions which is one means of surfacing a child's background knowledge which is a vital component of the process of inference.

Recommendations

The recommendations arising from this study are presented under the following headings: recommendations for authors, recommendations for those in authority to select basal series for use in schools, recommendations for teachers, and finally recommendations for further studies.

Authors of Basal Series

- 1) All series clearly identify which questions and activities are designed to develop specific skills.
- 2) All series increase the frequency and ratio of inferential to non-inferential questions to be reflective of the ratios prescribed by current research findings.
- 3) All series provide detailed instructions for teaching inference to aid in the development of childrens' inferencing abilities.
- 4) All series keep up with current research findings and recommendations and modify or adjust their series when applicable.

Authorities Responsible for Selection of Basal Series

- 1) Formulate specific guidelines and criteria to follow when selecting a basal series. These guidelines should be reflective of current reading research findings. Authorities should make it clear to the publishers of the series that, if these criteria are not met then that series will not be used in schools.
- 2) An examination of series should be undertaken to

gain statistical information on the types and frequencies of questions/activities presented by the authors of the series. Such information would afford the authorities a better position to evaluate basal series before specific series are authorized for use in classrooms and to lessen dependence on authors' claims.

- 3) Keep teachers informed of current reading research findings.

Teachers

- 1) A basal series is only one resource among many. Each basal series should be evaluated and used selectively. Supplement basals with other materials to cover insufficient instructional methods provided by basal series teachers' manuals.
- 2) Each teacher should analyze his/her own questioning techniques used in the classroom to determine the ratio of inferential to non-inferential questions. Ratios of types of questions asked to students should be reflective of current research theory.
- 3) The process of inference should be developed in

young children from the very beginning of school and continued on as the child progresses through school.

Further Studies

- 1) An examination should be done of classroom teachers' perceived weaknesses of basal series.
- 2) When updated editions of the programs examined for this study materialize, a study similar to this one should be conducted to identify whether the authors of the series have geared their programs to reflect current research.
- 3) A duplicate of this study should be conducted to examine other basal series to identify whether the findings of this study are applicable to other basal series used in Canadian schools.
- 4) An examination of the different kinds of questioning practices utilized by classroom teachers to determine whether teachers use a blend of questions as recommended by current reading research should be undertaken.
- 5) An examination should be done of basal series used throughout Canada in the elementary grades to determine whether there are any changes in the extent of, and methodologies presented for helping to develop students' inference skills at higher grade levels.

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Mr. Mugs and the Blue Whale Level 2

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Mr. Mugs is Lost Level 3

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Language Development Reading Student Text:
Saturday Magic Level 4

Language Development Reading Student Text:
Magic Story Box Level 4

Language Development Reading Student Text:
Heads and Tails Level 5

Language Development Reading Student Text:
Make Believe Time Level 5

Language Development Reading Student Text:
Treat Street Level 6

Language Development Reading Student Text:
WonderTime Level 6

Language Development Reading Student Text:
Finders-Keepers Level 7

Language Development Reading Student Text:
Treasure Chest Level 7

Language Development Reading Student Workbooks:
Hickory Hollow Friends
Hickory Hollow ABC
I Can Read Levels 1-7

APPENDIX A
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October 10th, 1985

Primary School Program Division
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To Whom It May Concern

I am a graduate student in the Department of Curriculum and Instruction at Memorial University of Newfoundland. My graduate thesis research will involve an analysis of the degree to which inference is taught, if at all, and how it is taught in the primary reading programs. It is my intention to select for study three of the basal programs that are most representative of those used throughout Canada. To allow me to make those selections I require your assistance. I seek your cooperation in forwarding the names of the three most widely used programs in your province.

May I thank you in advance for your interest concerning this request.

Respectfully,

Maureen Major



