# A COMPARISON OF READING ACHIEVEMENT PATTERNS USING A CASE STUDY APPROACH

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MAXINE M. RECCORD

# A COMPARISON OF READING ACHIEVEMENT PATTERNS USING A CASE STUDY APPROACH

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Education

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## Abstract

The study endeavoured to understand and describe the acquisition of literacy among six elementary school children by examining their reading achievement patterns over a five year period. It explored the cognitive, social, and affective factors which influenced these patterns of achievement. Since the research focussed on individuals, a case study approach was used.

The six children who comprised the sample represented an average range of ability as assessed by two measures of general intelligence. At the end of grade 2 these children were relatively comparable in reading comprehension as measured by the CTBS comprehension subtest. However by the end of grade 4 they could readily be divided into an able and a less able group based on CTBS comprehension scores. By the end of the sixth grade, the differences between the two groups had widened considerably. The able and less able group of readers included three children each. The research was concerned with the development of these differences in reading ability and the factors which contributed to them.

Three data sources were available to the study. They were (a) the SESA data files, (b) school records and (c) data collected by the present investigator. Quantitative data such as standardized test scores and qualititative data such as information gleaned from questionnaires and interviews were both included. The use

of multiple data sources, the availability of various types of data, and the longitudinal dimension of the study allowed the construction of a comprehensive reading achievement profile for each student.

The results showed that the able and less able readers differed on many cognitive, social, and affective factors which are related to reading, and that these differences influenced their patterns of reading achievement. The able readers decoded more efficiently, could better discern relationships among textual ideas, were better able to make inferences, made more effective use of monitoring and "fix-up" strategies, and had more extensive vocabularies than the less able readers. In addition, the stronger readers had more positive self-concepts, expressed more confidence in their ability to cope with school work, had more positive and realistic perceptions of themselves as readers, were more likely to come from homes where reading was an activity of choice, and watched less television than the weaker children.

The research recognized that many factors influencing reading achievement are beyond the control of the school. However, instructional practices which result in long term negative effects on reading achievement should be recognized and avoided. Conversely, practices which have been shown to have positive effects should be fostered. Encounters with print should be successful and pleasant and children should learn to read in a supportive

and risk-free environment. Children should read extensively from materials geared to their abilities and interests.

Finally the study recognized the need for a comprehensive theory of reading encompassing many understandings and supported by a diversity of research and research methodologies. Such a theory should be understood by teachers so that it may guide teaching practices.

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# CHAPTER I

# THE BASIS FOR COMPARISON OF ABLE AND LESS ABLE READERS

The initial chapter has several purposes. First, it describes the Structure of Elementary School Achievement (SESA) study carried out at Memorial University of Newfoundland during the four-year period 1982-1986, in order to provide the necessary background to the present study. Second, the problem to be investigated is stated, and the purposes of the study discussed. Third, this chapter presents a brief outline of the research strategies to be employed. Finally, the significance of the present study will be considered.

## Background to the Study: The Structure of Elementary School Achievement (SESA)

The present study relied heavily on the SESA study. Subjects were selected from among the project participants, and extensive use was made of the information gathered throughout the duration of the study.

The SESA study was carried out under the direction of Professor Jeffrey Bulcock at the Institute for Educational Research and Development at Memorial University, and was funded by the Social Studies and Humanities Research

Council of Canada. It was longitudinal in design and followed children from the beginning of grade 2 to the end of grade 4. Two overlapping three year studies were carried out with the second study serving to validate the first. The study was conducted over the four year period 1982-1986. The sample size for the initial study was 217 children; an additional 111 were involved in the validation study. Two school boards and eleven schools in the St. John's area participated. The children in the initial study were in grade 6 when the sub-sample for the present study was chosen.

A large amount of information was collected on each subject. The focus of the data collection was twofold.

1. It identified the information processing strategies used by children and measured the relative effects of these on the acquisition of literacy.
2. It identified significant aspects of the child's learning environment, and calculated the effect of this environment on the child's acquisition of language and mathematics proficiency.

The present study focussed on the literacy aspects of the data. The next sections describe the four types of instruments and methods used to assess achievement and information processing strategies: (a) standardized tests, (b) informal tests and assessments, (c) the parent questionnaire, and (d) the student questionnaire.

Standardized Tests

Two standardized tests were used. The Canadian Test of Basic Skills (CTBS) was administered in the fall and spring of each year of the study. The subtests of interest to the present study are the vocabulary and comprehension subtests. The Canadian Cognitive Abilities Test (CCAT) was administered when the children were in grade 3, the second year of the study. This is a widely used group intelligence test, which assesses children's verbal, non-verbal and quantitative abilities.

Informal Tests and Assessments

In addition to these standardized tests, informal reading inventories were administered in the fall and spring of each of the three years of the study. After readers read a graded passage orally, they were asked to recall as much of the passage as possible. This retelling along with the use of probe questions was used to help establish the children's instructional levels. This is the level at which children find reading a challenge but can handle it comfortably with teacher guidance and instruction. The general guideline for instructional level materials is 95% word recognition and 70% comprehension. Although this formula is somewhat problematic in that it does not account for such factors as extensive background knowledge or complexity of text

structure, generally passages which were analysed for both the SESA study and the present study were those which presented some difficulty for the children, but were not so difficult that a frustration level of performance occurred.

The oral reading was taped, and was later analysed using a miscue analysis. This procedure is based on the work of Goodman and Burke (1973). It involves examining "errors" in oral reading and determining to which of three cueing systems (grapho-phonetic, syntactic, or semantic) readers are responding when they deviate from the text. For example, a miscue which is similar to the original word in appearance and sound, such as dolls for dollar, may indicate that the reader has been attentive to the visual and sound aspects of the word. This is the grapho-phonetic cueing system. On the other hand, the substitution of a synonym for the original text word, such as saying woods for forest, indicates attention to what fits in the sentence and makes sense. These are the syntactic and semantic cueing systems. Goodman (1976) hypothesized, and it is generally accepted, that deviations which change the meaning of the text are more serious than mere mispronunciations or substitutions of words with similar meanings.

The oral retelling of the passage was analysed in two ways. A discourse analysis attempted to determine

qualitatively how the child was processing the printed information. Beebe (1985) described the processes on which this analysis is based.

> As a reader reads he abstracts or selects information from the text which he assimilates into his already existing repertoire of knowledge, so that he can compare his own interpretation of the passage. In performing this operation researchers believe that readers transform, reproduce and reconstruct text information during reading which is then reflected in the retelling of what they have read. (p. 30)

Discourse analysis of oral retellings typically involves dividing the retelling into clauses, and then analysing each clause by comparing its content to that of the text. Recalled items may be classified as (a) verbatim, (b) synthesized or summarized, (c) inferred, or (d) erroneous.

Verbatim recall is exactly like, or almost exactly like, the text. A clause that is classified as synthesized or summarized means that the reader has attempted to incorporate the new material into his present knowledge framework, and is relating ideas together into a manageable form. The inference category indicates that the reader is filling in the details of the story from his own background knowledge. Erroneous information indicates that the reader has not understood, or has not recalled accurately.

Story grammar analysis assessed what the child had recalled of the episodes which constitute a story's structure. A typical story grammar consists of a number

of episodes which include a setting and a series of events which lead up to a goal. Some children are able to recall only initiating or concluding events, while others recall the episodes in isolation without being able to discern the causal or other links between them. According to Hasinoff (1986) this procedure is problematic because many stories simply do not fit the prescribed pattern. This analysis was not considered in the present study.

An inferencing ability test was designed for use in the SESA study. Hasinoff (1986), described the test as consisting of a picture stimulus with probe questions designed to elicit three broad categories of inferences: informational, causal, and evaluative. These three categories were hypothesized to constitute a hierarchy of inferencing. Informational inferences are at the bottom of the hierarchy and answer implicit questions: Who? What? or Where? Causal inferences answer the questions: How? or Why? They establish causes, motivations and conditions. Evaluative inferences are based on the reader's prior knowledge about events, actions, and objects referred to in a text (or picture). They require the reader to make value judgments. For the purposes of the present study these categories were not considered. The test results were analysed on the basis of whether or not an appropriate inference was made.

The second category of information gathered by the SESA researchers pertained to the learning environments of the children which provide the context for the development of literacy. Two questionnaires were developed to assess them. One was completed by parents, and the other by children. These questionnaires are presented as Appendices A and B.

Parent Questionnaire

The first questionnaire, completed by parents of participating students, investigated the social environment of the home. Four dimensions of home background were identified as being influential in the achievement of elementary school children. Bulcock (1986) described each of these dimensions and provided the theoretical framework and purposes for the inclusion of each in the questionnaire.

The first of these dimensions was labelled the "expectations structure of the home". Knowledge of what expectations parents have for their children with regard to completion of chores, education, and initiative taking, should help predict how these children will respond to the expectations of schooling. The SESA study wanted to know if parents held high or modest expectations for their children, the hypothesis being that children whose parents held realistic expectations for them would be likely to experience the most success at school.

The reinforcement structure of the home was studied to ascertain the degree of permissiveness with regard to rule enforcement. The study was also interested in the degree to which negative sanctions were used to ensure that children conform to family rules. The inclusion of this dimension of home background was based on the theory that conformity to rules is best learned through socialization processes which guide the actions of children through a need to gain acceptance and status in the eyes of others, particularly parents. The motivation to conform is internalized, and coercion through use of negative sanctions is unnecessary.

The study of the role model structure of the home was based on the premise that despite media and school influences, parents are still the most important socializers of children. The questionnaire investigated the relative dominance of mother and father as role models, testing the hypothesis that parity of responsibility between mother and father for the socializing of children fosters effective transmission of social knowledge, social roles, and complex patterns of behavior.

Finally the opportunity structure of the home was investigated. The family was viewed as a structure of opportunities for learning. Questions were asked to establish the extent to which families expose their

children to learning aids such as books, educational games, and travel.

Student Questionnaire

The second questionnaire designed to assess learning environments was administered to participating students in the third year of the study. Hasinoff (1986) described the Quality of School Life questionnaire as a 47 item paper and pencil instrument. Students indicated the degree to which they agreed with the statements presented by checking items of a scale ranging from "definitely agree" to "definitely disagree".

The questionnaire probed the quality of the children's experiences at school. Hasinoff identified adventure, opportunity, identity, and status as four significant features of school life for children. In addition, the questionnaire also explored students' positive and negative feelings towards school and their place in it, and the students' perceptions of teacher roles and behaviors. The examination of these aspects of school life was based on the theory that success in school will probably depend not only on cognitive development but on the degree to which schools provide personal fulfillment for students.

In the aggregate a considerable amount of information was available from the SESA files. The present study

selected data pertinent to its particular purposes, and carried out additional assessments to extend and supplement existing facts. Additional information from school records was also considered. These three information sources provided the data base for the present study.

## Statement of the Problem

Understanding how children become readers is the focus of a large body of research. Recent research views reading as an interaction between reader and text. Various models of the reading process have been proposed to explain this interaction and, indirectly, to explain the acquisition of reading ability.

One such class of models is based on the study of psycholinguistics. Smith (1971) and Goodman (1976) were major advocates of this view of the reading process. The term "top-down" is often used to describe these models. Generally they propose a concept-driven approach to reading whereby a child uses his world knowledge and his linguistic knowledge to predict the message encoded in print. He then tests his predictions by selectively sampling the print.

A second class of models is the text-driven or "bottom-up" class. Generally, in this view of the reading process, the text is decoded first, then meaning is

attached to it. The child is taught a hierarchy of skills in learning to read. The automaticity theory of reading proposed by LaBerge and Samuels (1974) is one example of the bottom-up class of models. In this model the fluent reader is so proficient at decoding that this aspect of reading becomes automatic, thus freeing cognitive capacity to attend to the higher order processes involved in comprehension.

A third class of models is termed interactive. In a theory proposed by Stanovich (1980) the proficient reader makes selective use of both top-down and bottom-up processes. Fluent readers process print directly and automatically until something in the text presents a decoding or a meaning problem. They then turn to processes such as use of phonics to facilitate decoding, or the examination of context to discover the meaning of a particular word.

In investigating how children become readers, one traditional approach has been to focus on single aspects of the reading process such as phonological awareness, word recognition, vocabulary, or some aspect of comprehension such as inference-making. These cognitive processes associated with reading have been examined to see how they develop in children, and how they contribute to the development of skilled reading.

Another traditional focus of research has been on the social and affective factors which have been hypothesized to influence reading achievement. Thus, factors such as socio-economic status, home environment, instructional methods, motivation and self concept have been studied to ascertain their role in the development of reading ability. In the aggregate, these lines of research have resulted in an extensive body of knowledge about the making of a reader.

While typical patterns are likely to exist, it cannot be assumed that the processes involved in learning to read and the factors which influence the development of these processes, operate in all children in the same way. It can be assumed, however, that within a given individual they will operate in complex and unique ways.

The present study examined the relationships between the cognitive processes of reading, social and affective influences on reading, and reading achievement in individual children. A small sample of six children who participated in the SESA study was selected. All six children scored within the normal range on a general intelligence measure. At the end of grade 2, which was the first year of participation in the SESA project, all six children scored at or below grade level on the CTBS comprehension test. By the end of grade 4, the final year of the SESA study, CTBS scores indicated the emergence of

an able and a less able group of readers. That is, three children had progressed to the point where they were scoring above grade level while the other three children were still scoring below grade level. The study focussed on these two groups of children in the hope of understanding why some children who start out as low average readers continue to be weak readers while others make significant progress and end up as proficient readers.

An indepth, longitudinal analysis of the pattern of reading achievement for these individual children was undertaken. This analysis examined cognitive, social and affective factors, and traced the complex relationships among them. This approach allowed comparisons between the able and less able readers to be made.

The study focussed on two aspects of the children's acquisition of reading ability:

1. The large differences in reading ability which exist among children who are comparable on a general intelligence measure.
2. The cognitive, social and affective factors which contribute to these differences.

## Research Strategies

This research adopted a case study approach, a method of inquiry which has seldom been used by researchers in the field of reading. Johnson (1985) claimed that The Reading Research Quarterly had never published a single case study in its entire history. This is in contrast to recent work in the area of writing. Donald Graves, a leader in research into writing, based much of his work on case studies which examined in detail how the writing process operated in young children.

Johnson strongly advocated the use of the case study method in reading research when he wrote that "a useful understanding (of reading disability) can only emerge from an integrated examination of the cognitive, social, and personal history of the individual" (p. 155). It seems logical that this approach could be equally useful in attempting to understand the reading development of any child.

In the present research, the case study included an indepth analysis of the reading abilities of each of the six children who constituted the case base. A holistic perspective was adopted; that is, information from as many sources as possible was examined in order to construct an accurate and reliable description of each child's pattern of achievement over a five year period. The study was guided by theories and models of reading development and

by research into factors which are believed to be related to achievement in reading. It is based on the premise that an indepth and longitudinal study of the complexities of reading behavior and development in a small number of children is a viable means of adding to our understanding of the acquisition of literacy.

These case studies constituted a comprehensive profile of reading achievement for each of the children who comprise the study's sample. These profiles contained information about the cognitive processes of reading which was based on both quantitative and qualitative data. Quantitative data was obtained from an examination of standardized test scores over a five year period. Qualitative information was based on an analysis of the children's performance on informal reading inventories over the same period, and on information available from questionnaires and interviews involving parents, teachers, and the children. The profiles also examined the social and affective factors which seemed to have had a strong influence on each child's pattern of achievement. Information gleaned from interviews and questionnaires completed by parents and children formed the basis of this part of the analysis.

Finally, based on the information included in the profiles, the study compared the more able readers with the less able readers. It attempted to isolate factors

common to each group which may contribute to an understanding of why one group of children read well, and find reading useful and satisfying, while another group find reading difficult and frustrating.

## Significance of the Study

The acquisition of literacy has been, and continues to be, one of the major aims of schooling. It is generally agreed that children who do not learn to read well in the primary and elementary grades are likely to have difficulty with the subject material taught at the junior high and senior high school levels. This is particularly significant in the province of Newfoundland and Labrador where a high dropout rate is of great concern. In fact, academic failure was given as the primary cause of leaving school early by the 1985 study entitled Leaving Early which was commissioned to investigate this problem. There is a need to understand how elementary school children achieve in basic areas such as reading, and to identify factors which influence this achievement. The Structure of Elementary School Achievement (SESA) study, carried out by the Institute for Educational Research and Development over the four year period 1982-86, was a response to this need. The present study was based on the SESA work, and shared that response.

It is a frequent complaint that research in education concerns itself with laboratory types of situations which are far removed from the concerns of the practising teacher. Another complaint is that large-scale studies report statistical products such as test scores, or group means, or significant differences, but have little to say about the individuals and processes underlying such products. The SESA study was concerned with real children in real learning situations. It investigated the reading process using detailed qualitative methods such as miscue analysis and discourse analysis. The present study, using a sub-sample selected from SESA participants, and using data from the SESA files, had the same focus. In addition, by using a case study method of inquiry, the present research adopted a holistic and individual perspective, reflecting the holistic and individual perspective essential to good teaching.

In the field of reading the amount of research has been very extensive and sometimes contradictory. It is frequently difficult to fit diverse theories and individual research findings into some coherent whole. The case study provided the opportunity to examine many of the cognitive processes of reading and many of the factors which influenced these processes as they operate in an individual child. Thus, it provided the framework for

synthesizing some of the theory and some of the research findings.

The present study involved the comparison of able and less able readers. The reason one child reads well, while another who seems equally able based on intelligence measures lags behind, is the basis of much research in reading. It is also a practical problem faced by all teachers. Any light which may be shed on this problem is significant. Attributing the differences between able and less able readers to one factor, regardless of how powerful, is too simplistic an answer to such a complex question. The case study allowed comparisons to be made on the basis of multiple factors and the interrelationships among them.

In summary, the present study may be significant because of what was being investigated. Reading ability is a crucial factor in the present and future school success of children, and differences between able and less able readers is a practical concern of classroom teachers. Secondly, the study may be significant because of the method of inquiry. The case study has a holistic and individual point of view, and is a means of synthesizing some of the vast amount of research in reading.

# CHAPTER II

## REVIEW OF THE LITERATURE

The literature review is concerned with factors associated with reading achievement. There is an extensive body of research literature in this area, and this review therefore is subdivided into two sections, reflecting the two areas of interest of the SESA study. Literature dealing with the cognitive processes of reading is reviewed first. These cognitive factors include word level and text level processes. The review then examines some social and affective influences on reading achievement, including social and motivational factors, and explores how these affect the acquisition of literacy.

The nature of the present study guided the literature review in two ways. First, an attempt was made to integrate and synthesize research findings to reflect the holistic perspective necessary in a case study approach. Studies that recognize the complex interplay among factors which may contribute to the reading achievement of individuals were examined. Second, while few studies deal directly with the problem stated for the present study, many studies deal with differences between able and less able readers. These studies were examined to provide a useful starting point for an inquiry into why some children achieve well in reading while others do not.

Carr (1981) made a strong case for abandoning single factor theories to account for achievement in reading when he wrote:

> Current data indicate that no component skill can explain a sufficient amount of individual variation in reading performance to warrant a single factor theory. This suggests that a synthesis will have to be undertaken. (p. 74)

He concluded that single factor theories are really too simple to work.

Stanovich (1986) agreed with Carr's position and extended it. His view was that good and poor readers have been compared on so many single cognitive tasks, and so many significant differences and correlations have been found, that it is difficult to understand what all the empirical evidence means. He claimed that the vast literature on individual differences in the cognitive processes of reading can only be understood if the observed relationships can be classified on the basis of certain questions. He listed five questions about performance linkages.

1. Do they reflect a causal relationship?
2. Are they developmentally limited?
3. Are they the result of some third variable?
4. Do they enter into a relationship of reciprocal causation?
5. Are they consequences of the individual's reading level or reading history?

This classification scheme demands that attention be paid to the interrelationships of the factors which relate to reading achievement. It is not enough to isolate a factor which seems related to reading without considering the complex sets of relationships connected with that factor. This seems a particularly worthwhile approach to take in an indepth study of an individual's reading achievement, where these kinds of interrelationships may best be observed.

## Cognitive Factors Related to Reading: Word Level Processes

In the top-down models of reading, processing at the word level is downplayed. The view is that fluent readers pay minimal attention to grapho-phonetic cues (Goodman, 1976). Smith (1971) believed that the skilled reader selectively samples the visual text in order to confirm hypotheses based on the redundancy or predictability inherent in the syntactic and semantic structure of the printed text.

In light of these popular theories Stanovich (1982) asked if word-level processing is important in fluent reading. He cited eye-movement research by Ehrlich and Raynor (1981) as evidence that fluent readers do sample text rather thoroughly. The vast majority of words are fixated, and very little word-skipping seems to occur.

This indicated that word level processing is important in skilled reading.

Stanovich (1982) defined word recognition as "that process of extracting enough information from word units so that a location in the mental lexicon is activated thus resulting in semantic information becoming available to the consciousness" (p. 486). This definition establishes a relationship between word recognition and meaning.

Many studies have provided empirical evidence for a link between fast efficient word recognition and reading achievement. Biemiller (1977-78) found that younger and less able elementary school children needed more time to read letters, words out of context and text than did older and more able children. Juel (1980) concluded that as readers become more skilled, they read in a predominately text-driven fashion because they are more able to identify words quickly and effortlessly. Evidence from Perfetti, Hogaboam, and Goldman (1979) suggested that the development of rapid, effortless, word identification led to the development of skilled reading comprehension.

## Phonological Recoding and Word Recognition

Stanovich (1986) claimed that growing evidence points to phonological awareness as the "primary specific mechanism" (p. 362) leading to good word recognition ability. Lomax (1982) agreed and wrote that "Proficiency

in phonological skills is important for the development of word recognition ability, which in turn is a significant contributor to the comprehension of connected discourse" (p. 342). Studies by Share, Jorm, Maclean and Matthews (1984) and by Tunmer and Nesdale (1985) have concluded that phonological awareness is the most powerful predictor of initial reading acquisition.

Perfetti (1984) posited that phonological awareness allows the child to successfully match units of print with units of sound. The ability to use the alphabetic principle allows the child to recognize words which are in his spoken vocabulary but which he has not previously encountered in print. Thus he achieves independent access to print. This initial independence provides positive reading experiences for the child which in turn contributes to the further development of phonological skills, and initiates the development of a visual and orthographic means of recognizing more and more words. Ehri and Wilce (1985) agreed with this view. In their opinion, the ability to translate symbol into sound is an important first step in the development of more efficient and more diversified reading skills. Some assessment of a child's phonological awareness may be an important issue in explaining his present level of achievement.

In summary, initial phonological awareness gives the beginning reader independent access to print, which

contributes to the development of fast and efficient methods of recognizing words. This, in turn, facilitates comprehension. These ideas are somewhat consistent with the automaticity theory of LaBerge and Samuels (1974). According to this theory, once word recognition becomes automatic, the reader no longer needs to allocate conscious attention to it, and he can then devote most of his cognitive attention to higher level inter-word and inter-sentence relationships which facilitate comprehension. In fact, most models of reading development, whether or not they accept the idea of automaticity in word recognition, agree that the reader needs to allocate attentional capacity to comprehension. If word recognition is overly demanding of the reader's attentional capacity, he/she may well be a poor comprehender.

These ideas led to the characterization of the fluent reader as one who processes print thoroughly, but needs to use little processing capacity to do so, thus freeing attentional resources for comprehension (Stanovich, 1986). The less able reader, like the beginner, remains "glued to print" (Chall, 1983). For this reader decoding is so demanding of attentional capacity, that little is left for comprehension.

This brief discussion of phonological decoding has done little to indicate the complex influence initial

phonological awareness may have on later reading ability. As already indicated the ability to use phonological information to decode words is important primarily in the early stages of reading acquisition. However, that is not to say that its influence is limited to this stage. Stanovich (1986) wrote:

> It is apparently important that the prerequisite phonological awareness and skill at spelling to sound mapping be in place early in the child's development because their absence can initiate a causal chain of escalating negative side effects. (p. 364)

One such negative side effect is the difference in the amounts of reading practice able and less able children receive in the initial stages of learning to read. Biemiller (1977-78) wrote that:

> There appears to be a potential vicious circle in which initial slow reading may lead to reduced opportunities for practice which in turn reduces opportunities both for extracting intraword structure and possibly for increasing general identification speed. (p. 250)

Allington (1980) found that good readers read considerably more words of connected text than did poor readers during instructional time. One can assume similar differences in out of school reading. If reading practice is important to the development of more efficient word recognition skills, then the disadvantage of the less able child is apparent.

Furthermore, before long the less able child is likely to be into materials which are too difficult for

him. This leads to frustration and lack of motivation. Stanovich (1986) suggested that the combination of lack of practice, deficient decoding skills, and unrewarding early reading experiences lead to less involvement in reading activities. When the development of automaticity and speed in word recognition is delayed, it further hinders reading for meaning. Stanovich refers to this cyclical situation as a "downward spiral" in which the less able child is caught up in an ever-widening network of negative effects on reading achievement.

Conversely, for the child who is initially able to gain access to print via phonological recoding, the spiral is upward and the ever-widening effects are positive. These are the "Matthew effects" referred to by Stanovich in which the rich get richer and the poor get poorer. It seems important that these complex networks of effects be considered in a study which seeks to understand why one child progresses well in reading while another lags in the development of reading ability.

Context Effects on Word Recognition

A discussion of word level processes must consider the role of context in facilitating ongoing word recognition. Stanovich (1986) described research in this area as "fraught with confusion" (p. 366). The early psycholinguists such as Smith (1971) believed that more

able readers brought more semantic and syntactic knowledge to the text, and were thus able to make more efficient use of semantic and syntactic context to aid word recognition than were their less able counterparts. It was assumed that the less able readers would rely more heavily on the grapho-phonetic cueing system to identify words.

However, in the process of testing these hypotheses there is considerable empirical evidence to support the idea that less skilled readers do indeed use contextual information to facilitate word recognition when it is available to them; that is, when the reading material is within their reading capacity. An early study by Weber (1970) found that poor readers do use context to help them identify words, and that most of their miscues were contextually appropriate. Juel (1980) found that good readers were identifying words visually and directly, while the poor readers paid more attention to the context to help them. Perfetti, Goldman, and Hogaboam (1979) found that use of context in word recognition is not a major source of difficulty for poor readers.

The Perfetti, Goldman, and Hogaboam study, however, pointed out an apparent paradox in its conclusions. The same fluent readers who seemed to make little use of context in word recognition were better able than poor readers to complete cloze items correctly, a task which depends on efficient use of context to predict missing

words. This kind of evidence led Stanovich (1986) to differentiate between use of context in word recognition and use of context in the service of comprehension. Fluent readers do not seem to use context clues in ongoing word recognition, probably because their direct, context-free processing of print is so efficient. However, it seems evident that good readers are quite able to make good use of context in extracting meaning from the printed page. By adopting this distinction, some of the opposing research findings in the area of context use can be reconciled.

Theories such as the interactive-compensatory model proposed by Stanovich (1980) seem to agree that both good and poor readers are equally able to make use of context in word recognition. However, in the compensatory model, the more fluent reader uses context for this purpose only when words are unfamiliar or very difficult to decode. It seems that flexibility in the use of the cueing systems is characteristic of good readers.

The preceding discussion assumed that the poor reader can make use of the available context. In real life situations, unfortunately, the decoding task is often so difficult for the poor reader that it renders the context inaccessible to him. Reading then becomes the meaningless task of pronouncing one word after another. Stanovich (1986) explained the phenomenon of the word-caller in the

following way. While the word-caller may accurately decode words, it is possible that this is so demanding of cognitive capacity that the context is rendered useless and comprehension breakdown occurs. It is not that this reader is over-reliant on decoding and ignores meaning; rather his decoding skills are not developed enough to allow him to gain access to the context which will allow him to decode unfamiliar words and to comprehend.

To place context effects on word recognition within the classification framework suggested by Stanovich (1986), it seems that use of context to aid word recognition is characteristic of beginning readers who have not developed direct word processing skills. This gives it a developmental dimension. It also seems to be a consequence of the reader's present level of reading skill. If the reader can rapidly and accurately decode the words directly, he has no need to rely on context to help him identify them. It can also be related to the difficulty of the material, because even the most fluent readers may resort to context to help work out unfamiliar and difficult-to-decode words. Fitting the process of context use into a developmental framework, and examining how it may relate to other reading processes, allows for a more complete understanding of how this process is operating in the reading of an individual child.

## Cognitive Processes Related to Reading: Text Level Processes

Text level processes may be equated with comprehension. Getting meaning from print is the essential skill of reading. It involves the ability to recognize and understand the inter-word and inter-sentence relationships in the text, the ability to recognize and understand the structure of stories and expository text, and the ability to integrate text information with present world knowledge. The reader must construct his own mental representation of the message inherent in the text.

Brooks, Arnold, and Iacabbo (1977) explained comprehension in Piagetian terms. The child relates new information to his previous knowledge base in an assimilation type of process. When new concepts arise which result in a change in the child's present representation of the world, the process is much like Piaget's idea of accommodation.

The study by Brooks et al. (1977) considered comprehension to be a "process to be facilitated, not a skill to be taught" (p. 152). Golinkoff (1975) agreed with this process view of comprehension. She wrote that "Skilled readers clearly treat reading as a process through which to gain information about events and relations in the world" (p. 654).

Comprehension in reading goes beyond the simple decoding of the message. Brooks et al. (1977) explained that while skills such as visual discrimination, word recognition, and visual verbal coordination are necessary for comprehension, they are not sufficient for it to occur. Golinkoff (1975) agreed with this view when she wrote the following:

> Clearly reading comprehension requires an active, attentive, and selective reader who, to some extent, operates independently of text to extract meaning from it. Inadequate reading comprehension seems to imply being somewhat of a slave to the actual printed word. (p. 656)

Stanovich (1982) suggested that poor readers exhibit comprehension deficits independent of decoding deficiencies. Studies of listening comprehension which eliminate the decoding factor, have shown that listening comprehension differences can account for a portion of the variance in reading ability. Studies by Curtis (1980) and Berger (1978) supported this idea. Furthermore, these studies supported the idea that comprehension ability, apart from decoding ability, accounted for larger proportions of the variance in reading ability as the reading task become more complex. Leven (1973) found that some readers have trouble comprehending materials made up of words which they can accurately decode. Cloze studies indicated that poor readers made less appropriate guesses of missing words in context than good readers, although

both groups were able to decode the context presented. Perfetti et al. (1979) also found this difference in good and poor readers.

Stanovich (1982) concluded that there is mounting evidence to indicate generalized comprehension difficulties in poor readers, separate from decoding skills, but perhaps related to a general lack of linguistic awareness. This has led to the suggestion that comprehension strategies such as self-questioning, text-scanning, use of imagery, and comprehension monitoring be taught explicitly to these students.

This general discussion of comprehension, emphasizing the importance of cognitive and linguistic abilities in the process of reading, leads to a discussion of three comprehension related topics; namely inferencing, monitoring and vocabulary. Inferencing is an essential comprehension skill because writers of texts do not state the full intent of the message explicitly. The reader has to fill in the gaps from his own repertoire of world knowledge. Comprehension monitoring permits readers to recognize gaps in understanding and to make efforts to remedy this situation. Vocabulary is an important aspect of comprehension because it serves to label the concepts which make up the individual's knowledge base. These topics are discussed in the following three sections.

Inferencing

A conceptualization of the comprehension process based on recent theory and empirical evidence assumes the importance of an individual's personal knowledge structure. This knowledge, already stored in memory, is referred to as "schema" by Anderson and Pearson (1984). Schema is defined as an abstract knowledge structure. The descriptor "abstract" is used because, in the opinion of these theorists, this knowledge summarizes what is known about a variety of cases that differ in many particulars. One's knowledge structure, for example, abstracts the essential elements of the concept "dog". Yet dogs of many different sizes, shapes, and colours can fit into the general concept. The knowledge is structured in that it represents relationships among its component parts. In schema theory as applied to reading, comprehension is seen as an active endeavour in which readers select information provided by the text and integrate it into their existing repertoire of knowledge (schema) so that they are able to form their own mental representation of the textual message.

Recent theory in reading has stressed the role of prior knowledge in reading comprehension. Lipson (1982) wrote:

> When we say that individuals have good comprehension of text we generally mean that they have successfully integrated the information from text with their existing

> knowledge, and also that they have learned any new information presented. (p. 243)

Bransford (1972) made the point that good comprehension goes beyond the literal processing of the text information. He argued that "Subjects do not simply interpret and store the meanings of sentences per se. Rather subjects create semantic products that are a joint function of input information and prior knowledge" (p. 718). Langer (1984) also emphasized the importance of prior knowledge. In her view, the knowledge and experience an individual brings to the reading task is a critical factor in reading comprehension.

Anderson and Pearson (1984) made the point that writers of texts assume that they share mutual information with the readers of those texts and that the reader has some schema for what they are writing. They assume that their readers can accurately infer much of the information being communicated and, therefore, omit it from the text. In fact, a text which assumed no inferencing ability on the part of the reader would have to be so detailed that it would be pedantic and boring. When, in fact, writer and reader share a common knowledge base or schema, comprehension is greatly facilitated.

Several empirical studies have supported and extended these ideas and, thereby, have contributed to what we understand about the inferencing ability of individuals. Arnold and Brooks (1976) investigated the role of

appropriate background knowledge to the listening comprehension of children. Their results indicated that in the presence of appropriate background knowledge, children generated more inferences and were able to make more verbatim recall statements than when appropriate background knowledge was scant. In short, comprehension and recall were facilitated by appropriate background information.

Lipson (1982) found that prior knowledge had a powerful effect on inferencing ability. In fact, Lipson's elementary school subjects used their prior knowledge to answer questions, even when it was contradicted by the text. This led Lipson to conclude that background knowledge needed to be correct in order to facilitate comprehension of the textual message. Thus, the quality of the sources of background information becomes important.

Background knowledge is not a dichotomous proposition, either existing or not. Lipson (1982) argued that "young readers with limited experiences would possess schemata that are based on fragmented information or mistaken understandings" (p. 245). This partially explains why older children are able to make more and better inferences than younger ones. Older children simply have more elaborated and accurate schemata.

Alvermann, Smith, and Readence (1985) investigated the effects of competing beliefs on text comprehension, and the role of text in changing ill-defined or inaccurate prior knowledge. Her results were compatible with those of Lipson. She found that the subjects rarely used text to update their own knowledge especially when the text information and their own information were in conflict. Alvermann suggested that efforts ought to be made to assess the students' preconceived ideas, especially if it is perceived that they may be at variance with the text. She further suggested that children be taught the importance of text in changing preconceived ideas.

Langer (1984) developed a prereading activity designed to help children draw out and elaborate existing knowledge. Her results showed that such a procedure raised the comprehension levels of high and average achievers, but did not help low achievers. She concluded that these children needed direct instruction in passage related concepts because they seemed to lack appropriate background knowledge altogether.

The whole area of schema and inference-making is very complex, yet it is an important area to consider in a study of the reading achievement of children. The relationships between prior knowledge, inference-making and reading achievement are likely to be quite complicated. They are also likely to be related to other

factors such as home environment and to the richness of the linguistic experiences at home and at school. One may speculate on possible Matthew effects. Very likely reading contributes to the development of many concepts. The child who has had early success in reading will read more extensively and will consequently know more. This in turn makes the comprehension of new texts easier for him, and the spiral continues. These kinds of interrelationships must be traced to truly understand an individual's achievement in reading.

Comprehension Monitoring

Pitts (1983) claimed that self-monitoring is very important in the comprehension process. She argued that "A vital component of reading comprehension is the ability to judge the quality of one's understanding. This awareness is a metacognitive skill called comprehension monitoring" (p. 516). Paris and Myers (1981) agreed with this opinion. They wrote "Reading comprehension involves many perceptual and cognitive skills, but a major component is the ability to monitor one's level of understanding while reading" (p. 5). These latter authors refer to the process of monitoring as a kind of "mental pulse taking".

Many studies have concluded that self-monitoring while reading is a differentiating factor between good and

poor readers. Weber (1970) noted that good comprehenders, compared to the less able, corrected twice as many errors that distorted meaning. This suggests an awareness on the part of good readers of the semantic constraints of language, and an awareness of a lack of sense and meaning.

Golinkoff (1975) suggested that poor comprehenders may not self-monitor because they may have unconventional standards about what is acceptable in language. This idea seems to support the notion of a general lack of linguistic awareness on the part of poor readers to which Stanovich (1982) attributes many of their comprehension failures. Paris and Myers (1981) linked poor monitoring to a limited perception of the goal of reading. The poor comprehender may well view the goals of reading to be decoding and pronouncing, rather than making meaning.

Pitts (1983) listed four basic types of monitoring failures: (a) failure to understand particular words, (b) failure to understand particular sentences, (c) failure to grasp relationships between sentences, and (d) failure to understand how the text fits together as a coherent whole. This list suggests that monitoring failure can occur at all levels of the reading process, from the individual word to the extended text.

Paris and Myers (1981) suggested that the initial evaluation of one's own comprehension answers questions such as (a) "Does this make sense?", (b) "Do I understand

this word?" and (c) "Do these ideas fit in with what I know already?" These questions emphasize active interaction with the text.

The good comprehender, upon finding a gap in his understanding, recruits "fix-up" strategies. These strategies, in order of efficiency have been suggested both by Pitts (1983) and by Paris and Myers (1981). They are: (a) to ignore and read on, (b) to change reading rate, (c) to suspend judgment until later, (d) to form tentative hypotheses and make a guess, (e) to reread, and (f) to consult an expert source such as a teacher or a dictionary. Paris and Myers found that use of these strategies correlated highly with good reading comprehension.

August, Glavell, and Clift (1984) conducted a study which examined comprehension monitoring of extended text. They created inconsistent stories by omitting a page of the text, and found that skilled fifth grade readers correctly reported the missing page significantly more often than their less skilled classmates. Having controlled for intelligence, differences in decoding ability, and differences in gist recall, these authors concluded that the poorer readers were not monitoring for meaning. On the basis of these results the authors speculated that some of these less skilled readers may not be able to sufficiently integrate text in order to detect

problems. Others may integrate and reconstruct text information but make tentative hypotheses which are not supported by text, and as a result are led to believe that the text is consistent. In either case comprehension suffers.

A study by Garner and Kraus (1982) compared the monitoring performance of good and poor comprehenders. They interviewed seventh-grade subjects about their approach to reading comprehension. Two weeks later they asked them to read two narrative passages. One of these stories had inconsistencies in one sentence, and the other had inconsistencies across five sentences. Information from the interviews revealed that good comprehenders provided more meaning-getting responses to questions about the reading process than poor comprehenders whose responses focussed on decoding and pronouncing words. In the reading aspect of the study the good comprehenders detected the inconsistencies, but the poor comprehenders were unsuccessful in doing this. These results seem to indicate that if children believe that the essential skill in reading is getting meaning, they will focus on meaning when they read. If children believe that reading is pronouncing words, they will concentrate on words and ignore meaning.

Waggoner (1983) reviewed several studies involving self-monitoring of text for meaning. Many of these

studies used interviews and self report methods to gather information about monitoring. Waggoner agreed that these studies have helped to identify strategies used to monitor comprehension, and to confirm significant relationships between knowledge and use of such strategies and reader age and proficiency. However, she pointed out possible drawbacks of such methods of gathering information. Children may be unaware of a strategy they do use, and so may not report it. On the other hand, they may report a strategy they have been drilled on, but do not use. Waggoner cautioned that these studies need other confirming evidence.

Comprehension monitoring does seem to be an important factor contributing to good comprehension and good achievement in reading. Children who do not self-monitor may have a limited perception of reading that does not include meaning. They may be deficient in linguistic awareness, and may not be adept at integrating information. The ability to be cognizant of gaps in understanding may well be an important difference between able and less able readers.

Vocabulary

Vocabulary knowledge has consistently been shown to correlate strongly and positively with reading ability. Anderson and Freebody (1981) wrote that "an assessment of

the number of meanings a reader knows enables a remarkably accurate prediction of this individual's ability to comprehend discourse" (p. 77). Beck, Perfetti, and Mckeown (1982) reiterated this strong relationship by stating that "an intimate connection between lexical processes and reading comprehension is a necessary assumption of theories of comprehension" (p. 506).

Anderson and Freebody suggested three hypotheses which might account for the powerful relationship between vocabulary and comprehension. The instrumental hypothesis simply suggests that knowing word meanings enables the reader to comprehend print. The second hypothesis, labelled the aptitude hypothesis, posits that an individual who has an extensive vocabulary, possesses superior mental ability and that this explains the superior ability to comprehend texts. The third hypothesis is the general knowledge hypothesis. A person who has a large store of word meanings is likely to have a large store of general knowledge, or well developed schemata, since words are only labels for concepts. According to this hypothesis, it is this extensive knowledge base which facilitates comprehension.

These authors indicated that a true explanation of the strong relationship between vocabulary knowledge and reading comprehension probably involves aspects of all three of the positions hypothesized. However, many recent

studies seem to have adopted the general knowledge hypothesis as the basis for their inquiry.

Ruddell (1976) expounded this position when he wrote that "critical to the student's successful encounter with text, however, is the reservoir of concepts, and labels for these concepts, which provide the currency for interaction with written and oral language forms" (p. 587). Johnson and Pearson (1984), in making the point that word meaning is one of the most critical factors related to reading success, argued that "it is not the words themselves that are so critical. Rather it is the rich reservoir of meaning, the conceptual base underlying words that matters" (p. 1). Trabasso (1981) also strongly linked vocabulary knowledge to prior knowledge and inferencing. He wrote that "vocabulary (conceptualization) knowledge, regardless of domain, is a crucial pre-condition to comprehension since without understanding the basic concepts contained in the text or question, one cannot make inferential links" (p. 63).

Johnson and von Hoff Johnson (1986) also discussed the role of vocabulary in inference-making. They suggested that readers must examine important vocabulary in the passage and relate these word clues to one's prior knowledge and experience. They devised a study in which subjects were taught to consciously make these links. The effects on comprehension were positive.

Beck et al. (1982) based a study on the hypothesis that words are simply labels for concepts, and if one has a rich understanding of a concept, understanding what is written about it is greatly facilitated. Their study emphasized the need for "deep" knowledge of words. The Beck study argued that a word can be "known" at many levels. A student may know a word well enough to pass a multiple choice item, but at the same time not know it well enough for the word knowledge to facilitate comprehension. Beck and her colleagues suggested that the failure of many studies to show a positive relationship between vocabulary instruction and reading improvement may well be because the instruction did not result in deep, rich, and extensive knowledge of the meanings of the words taught.

These researchers undertook a program of extensive vocabulary training. They taught 104 target words in 75 daily lessons of 30 minutes each. The goal was to provide students with a very extensive knowledge of the target words. The results showed gain in all post instruction tasks including text recall and standardized comprehension test scores.

In discussing these results, Beck et al. emphasized one important point: acquiring word meanings to a high level through direct instruction is not easy. In fact, even after their program of intensive and extensive

instruction, performances on vocabulary assessments focussing on the target words fell well below 100%. The study concluded that large numbers of words, approximating the number of new words which students encounter in reading materials, simply cannot be efficiently and practically taught.

Many studies referred to the large expansion in vocabulary which occurs during the elementary school years. Jenkins and Dixon (1983) stated that no current theory of vocabulary acquisition can account for this enormous growth. They argued that there is very little direct vocabulary teaching done, and in any case, as indicated by the Beck study, direct teaching of vocabulary is very slow and inefficient. They also referred to evidence that elementary school children are not particularly adept at deriving word meanings from context. Jenkins and Dixon concluded that other sources must be responsible for this growth, and recommended content subjects, family, television, and various oral contexts, for further study.

Nagy, Herman, and Anderson (1986) hypothesized that incidental learning from context during free reading is the major mode of vocabulary acquisition in the elementary school years. They posited that good reading comprehension ability and experience with a large volume of printed texts are the major determinants of vocabulary

growth. They called their position a "default" argument, put into place because there seemed to be no other plausible explanation.

In their study, Nagy et al. pointed out that direct use of context for deriving a word's meaning is difficult in naturalistic reading situations because most contexts offer little information about meanings. Furthermore, even a good context will at best support only one of a word's many possible meanings. Finally, context will likely supply information about only one aspect of this particular meaning.

One key point made by the Nagy et al. study is that learning words is not a "one shot deal". It is likely that word knowledge is acquired gradually by small increments. Furthermore, since in naturalistic reading most words have a low frequency of occurrence, children have few encounters with them. Assuming these points to be accurate, then children must be able to gain substantial, if partial, knowledge of a word's meaning through a single encounter in a limited context. Thus, incidental learning from reading should be able to account for a substantial amount of vocabulary growth.

The subjects of the Nagy study were average and above average grade 8 students, and they read material from regular school texts. The authors of the study concluded that incidental learning of vocabulary through reading did

take place in situations where the number of exposures to the words was limited, and even when the contexts were not especially informative.

The authors of the study speculated that the strength of learning incidentally from context lies in its long term accumulative effects. Students must become independent word learners, since direct instruction is much too slow. The study concluded by saying, "Our results strongly suggest that a most effective way to produce large scale vocabulary growth is through an activity that is all too often interrupted in the process of reading instruction: reading" (p. 252).

The previous discussion leads to Stanovich's (1986) position on the vocabulary-comprehension relationship. He argued that, unlike some observed relationships in reading, vocabulary knowledge and reading ability remains strongly linked throughout all stages of reading development, from beginning to skilled. He also agreed with the position of Nagy et al. that reading itself is a significant contributor to vocabulary growth. Stanovich stated his position thus:

> If the development of vocabulary knowledge substantially facilitates reading comprehension, and if reading itself is a major mechanism leading to vocabulary growth, which in turn will enable efficient reading, then we truly have a reciprocal relationship which should continue to drive further growth in reading throughout a person's development. (p. 380)

It follows that this situation can result in ever widening individual differences in the reading achievement of children. Those with poorly developed vocabularies, perhaps the result of language impoverished environments, will probably read with little understanding, and consequently with little enjoyment. They will subsequently read less and, as a result, have slow development in vocabulary growth, which in turn will further inhibit the growth of reading ability. Matthew effects are again in evidence, the relationships are complex, and their influences far reaching.

## Social and Affective Factors Related to Reading

A holistic study of reading achievement will pay attention to the social, affective, and motivational factors which may influence learning to read. The SESA project recognized the importance of this class of variables, and assessed them through the Home Life and the Quality of School Life questionnaires. An examination of the literature in these areas indicates a complexity of relationships among these factors and between these factors and achievement. As with the cognitive processes it may be useful to look at these relationships from the holistic point of view afforded by the case study approach.

Athey (1976) argued for the inclusion of affective and personality dimensions in reading research. She wrote the following: "The intellectual variables involved in reading do not operate in isolation, but are modified by the individuals' attitudinal and personality characteristics" (p. 342). Athey presented three arguments to support her stand.

1. Affective, attitudinal and personality factors may have both a direct and indirect influence on the cognitive variables in reading.
2. Affective, attitudinal and personality factors shown to be related to reading are susceptible to intervention treatment by researchers, and especially by teachers whose associations with the young reader are both intensive and continuous.
3. The problems of reading are so complex and so urgent that we cannot afford to neglect any promising line of research which may lead ultimately to improved reading performance.

One outcome of the extensive research into the cognitive processes of reading has been the isolation of reading strategies which may be taught to children. While learning and applying strategies is a cognitive endeavour, Paris, Lipson, and Wixson (1983) argued that the notion of

strategy cannot be depersonalized. They stated their position thus:

> We believe that the attributes of human agency, including intentionality, responsibility and self efficacy need to be reaffirmed in current accounts of learning and cognitive development. These characteristics can augment especially our knowledge about how children learn to read, and they can inform our instructional practices. (p. 295)

In short, these authors are indicating that to fully understand achievement in reading, consideration must be given to affective, social, and motivational, as well as cognitive factors.

Attribution Theory, Motivation and Self-Concept

Achievement motivation is of great interest to educators. Paris et al. (1983) referred to "skill and will" in the teaching of reading strategies with "will" being motivation. Wigfield and Asher (1984) argued that motivation has a cognitive dimension, that the individual's reasoning about the causes of his successes and failures greatly influences his future motivation in like situations. This notion is known as attribution theory. According to this theory individuals attribute their successes and failures to various factors, some of which are under the control of the individual and some which are not. The most commonly mentioned attributions are ability, effort, task difficulty and luck.

Attribution theory hypothesizes differences in the attribution patterns of high and low achievers. Generally it is believed that high achievers attribute success to ability and effort, and failure to lack of effort, or to such external factors as task difficulty or luck. Conversely, low achievers tend to attribute success to luck or easiness of the task, and failures to lack of ability. If these hypotheses can be supported for children learning to read, the implications for motivation and self-esteem are apparent.

Hiebert, Winograd, and Danner (1984) examined children's attributions for failure and success in reading. Their study supplemented the conventional attributions by including help from an adult, and by replacing effort with two specific aspects of effort which children perhaps could relate to more readily: paying attention and studying hard. They also introduced a developmental variable by selecting third grade and sixth grade children as subjects. On a silent reading comprehension task most of these children attributed failure to understand a passage to task difficulty. It is significant that this attribute is beyond the control of the child.

These researchers found that children gave high ratings to the effort-related attributions of trying hard and paying attention regardless of whether the outcome was

success or failure. The authors speculated that this finding reflected the importance placed on these attributions by teachers. The number of ability attributions decreased from the third to the sixth grade, leading the authors to suggest that as children mature they are more likely to regard intelligence as a stable and unchangeable aspect of themselves. A further outcome showed that the high achieving third graders were more like both high and low achieving sixth graders, in terms of their attributions, than they were like low achieving third graders. This indicates that both age and ability influence attribution patterns.

The Hiebert study corroborates other studies in two important ways. First, high achievers rate ability as more important in successful outcomes than in unsuccessful outcomes, indicating greater self-esteem and self-confidence. Second, poor readers frequently attribute failure to lack of assistance or other factors which were beyond their control, perhaps indicating a degree of passiveness or the belief that they are helpless and can do little to change their situation. The authors concluded that "children's perceptions of their reading capability have a strong influence on their successes and failures in school settings" (p. 1147).

Intuitively, one would suspect a strong relationship between attribution patterns and self-concept. Despite

differences in definitions of self-concept, this relationship is supported by empirical evidence. Marsh (1984) examined the relationships among self-attributions, certain dimensions of self-concept, and academic achievement in fifth-grade subjects. A strong relationship was perceived between achievement and self-concept when self-concept was considered content-specific. In other words, high achievement in reading correlated highly with a strong reading self-concept, but not to a global measure of self-concept. Marsh summarized the relationships revealed in this study.

> In general students who attributed their academic success to their own ability and their own effort tend to have better academic skills and higher academic self-concept. Students who attributed their academic failure to their lack of ability and to a lesser extent to their lack of effort, tend to have poorer academic skills and low self-concept. (p. 1305)

Closely related to the idea of attribution theory is the phenomenon known as learned helplessness. Johnson (1981) in defining learned helplessness stated that "experiences with uncontrollable outcomes result in an individual's developing generalized expectations for uncontrolability in the future which in turn results in passivity" (p. 174). Johnson studied failing elementary school students and concluded that these children demonstrated the behavioral and emotional damage predicted by learned helplessness theory. She believed that the use

of group comparisons to define success and failure was at the root of the problem.

Some evidence of this passivity was cited by Bristow (1985). She found that these passive readers do not monitor comprehension and do not correct miscues which affect meaning. They do not engage in active comprehension fostering activities such as purpose setting, activating relevant background and focussing on main ideas. They have a low expectation of success, their confidence is easily shaken, and they do not persist in the face of difficulty. In short, they feel powerless to control any aspect of the reading process.

Bristow made a strong case for breaking the pattern of failure which causes learned helplessness. Children must engage in learning experiences in which effort can make a difference. She stressed the importance of placing children in instructional level materials and providing adequate background. Children should be taught specific reading strategies, and guided to attribute failure in reading to failure to apply the strategies, rather than to lack of ability or other uncontrollable factors. Provision of concrete, text-related feedback, and the repeated corrections of misconceptions are all strongly recommended.

These recommendations clearly demonstrate the relationship between the cognitive and affective aspects

of reading achievement. Furthermore, this pattern of failure, attributing causes for failure to uncontrollable factors and the resulting passivity and helplessness is strongly reminiscent of Stanovich's Matthew effects. The downward spiral of failure, frustration, and giving up leads to more and more serious reading failures. Both these theories involve cognitive and non-cognitive factors, and both emphasize the complex relationship between them.

While attribution theory offers a powerful explanation of the relationships between cognitive and affective variables in learning motivation and achievement, Brophy (1983) issued a word of caution in the application of this theory. While he gives credit to the theory as a means of furthering our understanding of motivation and achievement, he expressed concern about its use in everyday situations. First, he does not believe that people spontaneously make causal attributions for their successes and failures, although they can be stimulated to do so by questioning. In Brophy's opinion this is especially true of young children who do not tend to be introspective. He also feared that young children may make false attributions as a consequence of their egocentrism and immaturity. A certain level of cognitive development and organization must be present before children can make the mental connections demanded by the

theory. He also worried that an overemphasis on effort can be counterproductive in terms of self-esteem if the task is not carefully tailored to the child, so that effort can make a real difference which the child can perceive. Brophy stressed that psychologically healthy ways must be found to help children deal with the undisputed fact that everyone cannot succeed at everything. These cautions offer a balanced view of factors to consider in the application of attribution theory.

While self-concept and achievement have been consistently found to correlate highly, studies attempting to establish a causal relationship have been inconclusive. Pottelbaum, Keith, and Ehly (1986), in searching for evidence to support a causal relationship between the two constructs, concluded that some other third variable may be dominant over both self-concept and achievement. Maruyuma, Rubin, and Kingsbury (1981) concluded that social class and ability are so strongly related to both self-esteem and achievement, that their influence is very difficult to separate, and causal relationships impossible to extract.

Bridgeman and Shipman (1978) found that self-esteem was quite high among preschool and grade 1 children even though their sample came from socioeconomically disadvantaged homes. However, by grade 3 there was much

greater variability in the self-esteem measure. Furthermore, these grade 3 self-esteem scores correlated highly with achievement measures. The authors suggested that such differences in academic self-esteem at the grade 3 level may develop as a result of school success or failure.

The positive self-esteem measures among the younger children in the Bridgeman and Shipman study did not correlate strongly with measures of basic academic skill in reading and mathematics. For the young children the self-esteem measure seemed to be independent of achievement measures. These findings lead the authors to the following conclusion:

> Although developing positive attitudes may be necessary for school success, it is obviously not sufficient; teachers must also provide adequate instruction on the appropriate task-related behaviors. Also the school environment must reinforce and sustain such interest and motivation. (p. 26)

Bridgeman and Shipman emphasized the "vast complexity of relationships among affective, social and cognitive processes" (p. 27). It seems evident that while no exact formula for expressing the relationship between self-esteem and achievement can be stated, strong relationships do exist, and must be considered when we attempt to understand a child's pattern of academic achievement.

Home Background and Achievement

It is a widely accepted premise of education that home background and achievement are closely related. Socioeconomic status is the most frequently cited aspect of home background which has been shown to relate to cognitive development and achievement. However, in the search for more powerful explanations of how home factors and achievement are related, dissatisfaction has been expressed with global kinds of measures such as socioeconomic status. Greaney (1986) argued that:

> Conventional measures of home background such as socioeconomic status underestimate the effects of home on the child's mental and scholastic development. These measures tend to focus on what the parents are and not on what they do. In particular they tell us little about the familial environment in which the child grows. (p. 814)

The SESA project recognized the importance of the home environment as it influenced academic achievement of elementary school children. Bulcock (1986) wrote that:

> The thesis held at the beginning of this study (SESA) was that the cognitive abilities of children and their aptitude for schooling would prove to be responsive to the way the child was brought up or socialized. (p. 64)

Furthermore, the project recognized that specific measures of the home environment needed to be considered when attempting to relate home environment to school achievement, that what parents actually do in the process of child-rearing is significant. The various dimensions

of the home environment identified by the study have been discussed previously.

Literacy environment

Greaney (1986) listed specific aspects of the home environment which contribute to the development of reading ability and to leisure reading. First, he listed verbal interaction, the exchange of oral language which develops the cognitive and linguistic skills that form the basis for literacy. In particular he speculated that the inclusion of literary features in oral discourse, for example story telling in the third person, and the use of decontextualized language (language with no connection in the immediate environment) would prepare children well for encounters with written language.

Second on Greaney's list is parental interest in reading, and actual parental reading in the home. These features have been shown to be common to homes where children become early readers, and is recognized as an important factor in developing the child's interest in reading. Greaney also listed access to reading materials and opportunities for reading as important home environment factors contributing to the development of reading ability. Wigfield and Asher (1984) likewise referred to the positive relationship between the number of books in the home and children's reading ability. Greaney pointed out that noise and overcrowding in the

home can adversely affect the development of reading ability.

Also mentioned by Greaney is child-parent shared reading in a secure and loving environment. In his opinion many positive effects ensue from this kind of literary event. Children's imaginations are stimulated, they develop an understanding of the relationship between the printed and spoken word, and labelling of objects is supported.

Greaney also referred to the affective dimension of the home on the development of reading. He elaborated on this idea.

> In the final analysis the child's ability to read and his willingness to read for information and for leisure may depend to a great extent on the degree of success and sheer pleasure experienced in previous encounters with the printed word ... .
>
> It is the task of parents and the school to help make encounters with print satisfying and pleasurable. (p. 817)

These ideas are supported by attribution theory and by Stanovich's notion of Matthew effects. It is to this pleasure premise that some of the success of the current whole language approaches to reading has been attributed.

Other studies have taken some of Greaney's factors and have explored them in more detail. Athey (1983) emphasized the importance of the language development factors which relate to reading development. She reaffirmed the importance of word knowledge and background

knowledge as the basis for literacy when she wrote that "Reading is an activity that involves extracting meanings from print and assimilating that meaning into one's existing store of information" (p. 197). In Athey's opinion the quality of parent-child interaction is critical, and she points out some characteristics of effective parent-child interactions. Effective parents confirm or disprove their children's utterances. They explain and comment upon the scene. They expand conversation, exchange ideas, and are responsive to their children's talk. These characteristics contribute to the child's ability to make inferences, that is to make connections between what is known and the new information input. Research evidence supports the important role of inference-making in learning to read. Any feature of verbal interaction which fosters the development of this ability should contribute to the development of reading ability.

Flood (1977) examined parental styles in reading episodes with young children. He discovered that four book sharing variables combined for the best prediction of readiness test scores. These were the total number of words spoken by the child during the reading, the number of preparatory questions asked by the parent, the number of evaluative questions asked by the parent, and the amount of positive reinforcement provided by the parent.

These features seem to support the importance of the child's active participation in book sharing episodes. Flood's dependent variable was a composite of traditional readiness items which have been found to predict eventual reading achievement.

Shanahan and Hogan (1983) also investigated parental book sharing style. Their dependent variable was print awareness as measured by Clay's (1972) Concepts About Print Test. This test predicts reading ability and is also a direct measure of children's understanding of a variety of print conventions which appear to be either prerequisite to, or a direct outcome of, learning to read. These authors stressed the importance of interactive behaviors during book reading. Three independent variables related significantly to the print awareness test scores. First, the number of minutes per week devoted to reading was important. Shanahan and Hogan suggested that this may well be a function of the child's interest in books. Second, question-answering behaviors of parents related positively to the print awareness measure. The authors speculated that this question-answering interaction between parent and child is important because it reflects the active participation of the child in the book sharing situation. Finally, making references to past experiences also correlated positively with the dependent variable. The study suggested that

this is related to schema theory. When connections between prior knowledge and book content are made explicit by the parent, content learning is enhanced. While the print awareness test did not assess content knowledge, activating a child's schema for a particular topic could contribute to the child's print awareness by contributing to the child's cognitive and linguistic development. In addition, children whose questions are answered might feel more confident in their dealings with print, and may be more active in their attempts to understand print.

Wigfield and Ashey (1984) suggested that literacy features of the home, such as those discussed above, have a number of positive influences on the acquisition of literacy.

1. They contribute to the cognitive development of children.
2. There are social and motivational benefits. Children perceive that reading is a pleasurable activity, which provides an opportunity to interact positively with the parent. This should motivate the child to want to read.
3. There are attitudinal benefits. Young children do adopt parental attitudes; a home which demonstrates a positive attitude towards books and reading will likely have children with similar attitudes.

Television viewing

Another feature of the home environment which concerns parents and teachers is television viewing. It is commonly assumed that children who are heavy television viewers do not spend time at other leisure pursuits including reading, and consequently the effect of television viewing on reading is negative. A survey of the research in this area makes it apparent that the relationships between television viewing and reading are not that simple.

Busch (1978) found that preschool and primary school children benefitted from television viewing. In particular heavy viewers in these age groups seemed to have more extensive vocabularies than those who watched less. However, the law of diminishing returns seemed to be operating, because by age 10-12 a saturation point seemed to have been reached, and total knowledge decreased as television viewing increased. Busch found that only the very highest achievers preferred reading a story to seeing it on television. However, a positive point was that low achieving readers sometimes sought out and read a book, the story of which they had seen on television. Possibly, familiarity with the plot made such books comprehensible to the poor reader.

Searls, Mead and Ward (1985) reported a survey on the television viewing habits of 9, 13, and 17 year olds.

Their findings also did not firmly support the commonly held idea that television is a negative influence. They found that age is a major factor in the amount of television viewed and how television viewing interacted with reading skills. In all age groups watching more than four hours a day was associated with low reading scores. Among the nine-year olds watching up to three to four hours per day was associated with good reading ability. Among the 13-year olds watching up to one-two hours a day was associated with good reading scores. There was a negative association between television viewing and reading among the 17-year olds, the more television viewing done, the lower were reading scores. Overall, the amount of television viewing decreased with age.

A survey of 234 children at the fourth, eighth and eleventh grade levels was reported by Telfer and Kann (1984). The survey correlated television viewing time with scores on the Gates-MacGinitie Reading tests. The general finding was that students who were heavy television viewers had lower reading achievement scores. This relationship was statistically significant at the grade 4 level. The study also correlated time spent on leisure reading with reading achievement scores. As could be expected, this variable correlated positively with reading scores.

Neuman (1986) conducted an interesting study which was designed to analyse the relationship of the home learning environment on children's television viewing and leisure reading preferences. The subjects were 59 grade 5 students. Neuman investigated four media-reading patterns: (1) heavy television viewing, heavy reading, (2) light television viewing, heavy reading, (3) heavy television viewing, light reading, and (4) light television viewing, light reading. She discovered that certain home environment factors were predictive of these patterns, and that television viewing and leisure reading were tied to a complex set of influences.

Children who were heavy readers and light television viewers were involved in many extracurricular activities. They participated in family-planned weekend activities and trips. They took lessons outside of school such as music and dance, and were involved in sports. The parents seemed to be actively involved in hobbies and community activities. They were involved in the children's education, and book-related discussions took place in these homes. Similar patterns were associated with the heavy reading, heavy television viewing groups.

The light television viewing, light reading group tended to have parents who were less educated, less involved in the education of the children, less active in the community, and who participated less in all kinds of

leisure activities including television viewing and reading.

There seemed to be a dichotomy between highly active, and less active homes. Those homes which were characterized by high levels of participation, were involved in many diverse kinds of activities. Those homes which were characterized by low levels of participation, seemed to be involved in little. In both cases television viewing did not seem to directly affect leisure reading. Rather the television viewing and leisure reading seemed to enter into a pattern which already existed.

Interestingly, 74% of all the parents interviewed indicated that they believed in providing restrictions on television viewing, and that television content should be monitored on a regular basis. However, these beliefs seemed to have no effect on practice. Despite the uneasiness of parents about television and the intention to guide its use, it appeared that most television viewing remained unsupervised.

While no hard-and-fast conclusions can be made concerning the affect of television on leisure reading and on reading ability, the previous discussion serves to illustrate one important point. The influence of home environments on achievement is complicated and far-reaching. Care should be taken to avoid simplistic explanations and facile conclusions.

# CHAPTER III

## RESEARCH QUESTIONS, SAMPLE, DATA COLLECTION, AND STUDYING THE DATA

The purpose of this chapter is fourfold: (i) to present the questions which guided this research, (ii) to describe the sample, (iii) to identify and describe the various sources of information available to the study and (iv) to describe how the data is to be approached and related to the research questions.

### Research Questions

The questions which are presented in this section reflect the purposes of the study, in particular the comparison of the more able and less able readers. They are based on research into the cognitive and, social and affective correlates of reading as presented in the review of the literature. The questions are stated in relatively general terms, and many information sources will be examined in order to answer them.

Question 1: When viewing reading as an information processing task, how do the processing abilities of able readers differ from those of less able readers?

Question 2: How does the way able readers conceptualize the reading task differ from the conceptualization of less able readers?

Question 3: How does the perception of one's ability to read and reading self-concept differ in able and less able readers?

Question 4: How do the home and social environments of able readers differ from those of less able readers?

## The Sample

Six children, four boys and two girls, selected from the initial 217 participants in the SESA main study, comprised the sample for this study. At the time the present study was undertaken these boys and girls were attending two elementary schools in a school district just outside St. John's and were in grade 6. None had repeated a grade; all were 11 or 12 years old. The schools they attended were fairly large with a student population of about 400. A cross-section of socioeconomic status was represented, ranging from blue-collar to professional in parent occupation. One or both of the parents were employed in all homes.

The children were selected on the basis of two criteria. First a general intelligence score was considered. The Canadian Cognitive Abilities Test (CCAT) was administered by the SESA researchers when the children were in grade 3. On the basis of the I.Q. scores obtained on this test, children were selected who represented an

average range of ability. Because comparisons of achievement in reading were to be made, it was necessary for children to be relatively comparable on a measure of general intelligence to avoid attributing achievement levels to extremely high or extremely low intelligence. The actual range of IQ scores for the six children on the verbal portion of the CCAT was 84-106, and on the nonverbal portion was 91-105. The individual scores for each child, the means for the sample of six, and the means for the entire SESA sample are given in Table 1. It will be noted that the verbal IQ means for the sub-sample are below the verbal IQ means for the entire SESA sample. Since the CCAT relies on reading, and since three of the six children had difficulty with reading, this is to be expected. Considering the range of scores representing average ability to be 90-110, these children generally represent that range, although one or two individual scores fall below or above it.

Also indicated in Table 1 are the IQ scores for the verbal and nonverbal sections of the Lorge-Thorndike Group Intelligence test. This test was administered by the school district when the children were in grade 4. While these scores were not considered in selecting children for the study, they serve to confirm that, apart from one or two individual scores, these children do represent an average range of ability.

Table 1

IQ Scores for Six Children in the Study Sample

| Student | CCAT | | Lorge-Thorndike | |
|---|---|---|---|---|
| | Verbal | Non-verbal | Verbal | Non-verbal |
| Adam | 106 | 105 | 115 | 110 |
| Sarah | 87 | 91 | 102 | 104 |
| Gregory | 98 | 92 | 95 | 110 |
| David | 104 | 105 | 90 | 93 |
| Karen | 95 | 104 | 89 | 108 |
| Bradley | 84 | 103 | 77 | 86 |
| Sample mean | 95.7 | 100 | 94.7 | 101.8 |
| SESA mean | 101 | 103 | - | - |

* Note: Fictitious names have been used to preserve anonymity.

The second criterion for selection was based on grade equivalent scores obtained by these children on the comprehension subtest of the Canadian Test of Basic Skills (CTBS). On the basis of these scores, obtained over a five year period, the children were categorized as able and less able readers. The scores for grades 2, 3, and 4 were obtained from the data files of the SESA study, and

those for grades 5 and 6 were obtained from school records. All testing considered was done in the spring of each year.

At the end of grade 2 it appeared that, based on these scores, none of these children could be described as an able reader. In fact all scores were below the 2.9 grade equivalent considered to be average near the end of grade 2, and only two scores were slightly above the 2.6 mean for the entire SESA sample. However, by the end of grade 4 scoring trends indicated that some of these children were progressing well and were scoring at or above grade level, while others seemed to be lagging behind. By the end of grade 5 two distinct groups had become apparent. Three children were now scoring above grade level by several months in one case, and by a year or more in two others. The second group of three children was scoring at least a year below grade level, considering grade level near the end of grade 5 to be the 5.9 grade equivalent. This trend continued into grade 6. The children's grade 5 and 6 teachers confirmed that, in their opinion, these scores were an accurate indication of the achievement levels of the individual children in both groups.

An examination of the group means over the five year period was also revealing. In grade 2 the difference in the means of the able and less able groups was .7 years.

By the end of grade 6 this gap had increased to 2.8 years. In addition, the increment in mean scores for the more able group was consistently more than one full year as they progressed from one grade to the next. On the other hand, the yearly increment in mean score for the less able group was, with one exception, less than a full year. These increments show that the less able groups consistently made less progress on a yearly basis than the more able group. The CTBS reading comprehension scores are presented in Table 2.

For the purposes of the present study, an able reader is defined as one who is presently scoring at or above grade level on the CTBS comprehension subtest. At the end of grade 6, grade level is considered to be 6.9. A less able reader is defined as one who is presently scoring at least one year below grade level on the same test. Classroom teachers agreed with the categorization of each child as an able reader or as a less able reader.

Table 2

CTBS Comprehension Scores for Grades 2-6 for the 6 Children in the Study Sample

| | Student | Grade 2 | Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|---|---|---|
| | Adam | 2.7 | 5.6 | 6.5 | 7.1 | 9.4 |
| Able | Sarah | 1.8 | 3.7 | 5.0 | 6.9 | 7.6 |
| Readers | Gregory | 2.8 | 3.2 | 5.2 | 6.3 | 7.3 |
| | $\bar{X}$ | 2.4 | 4.2 | 5.6 | 6.8 | 8.1 |
| Less | David | 2.2 | 3.5 | 5.0 | 4.6 | 5.8 |
| Able | Karen | 1.5 | 2.3 | 2.8 | 4.7 | 5.3 |
| Readers | Bradley | 1.9 | 2.7 | 3.8 | 4.4 | 5.1 |
| | $\bar{X}$ | 1.7 | 2.6 | 3.7 | 4.6 | 5.3 |

One further point should be made in this description of the sample. It must be recognized that these children did not represent the very ablest or the very poorest readers among SESA participants. Because a relatively narrow range of ability (as indicated by IQ scores) was represented, the differences between able and less able

readers was less dramatic than if a wider ability range was represented. However, this investigator believes that these children may represent many children in our Newfoundland and Labrador school population.

## Data Collection

The present study made use of three sources of information. As indicated previously, the study depended heavily on the SESA data files. This information source has been described in some detail in the background section of this thesis. The second source of information was the additional assessments carried out by the present investigator in the spring of 1987 when the children involved in this study were in grade 6. The third source of information was standardized test results available from school records. The latter two information sources are described in the next two sections.

### Additional Assessments

Informal reading inventories were administered to the SESA participants in each of the three years of the study, that is in grades 2, 3, and 4. It was decided to use this means of assessing reading ability at the end of grade 6 as well. In fact the present investigator used the same booklet of graded passages compiled for the original study

by Hasinoff (1984). These graded passages were accompanied by comprehension questions. In the present study, as in the SESA study, the graded passages were used to ascertain the child's instructional reading level.

Following the procedure used in the SESA study, the graded passages were read orally into a tape recorder. Once the instructional level for each student was established, the oral reading of that passage was analyzed using a miscue analysis. The children were also asked to recall as much as possible of what they had read. These recalls were taped and then analysed using a discourse analysis. This analysis gave qualitative information about comprehension processes. It attempted to reveal how the readers processed print. These two assessments have been described in the background section of the present paper. Comprehension questions were used to assess understanding when the recalls were incomplete. Some of these questions required inference-making.

Beebe (1986) studied a small subgroup of SESA participants who, by the end of grade 5 seemed not to have achieved the potential indicated by the initial assessments carried out in grade 2. She concluded that, as a group, these children seemed to have limited vocabulary development. This interpretation suggested that a direct assessment of vocabulary could provide useful information. Consequently, the Peabody Picture

Vocabulary Test (PPVT) was administered at the end of grade 6. This test measured receptive vocabulary by having children indicate the one picture out of four which corresponded to a stimulus word presented by the examiner. Because the instrument did not rely on reading ability, it was a good indicator of the vocabulary the child had developed from many sources, both oral and written.

In addition to these assessments, the investigator interviewed each student, as many of their primary and elementary school teachers as possible, and the mother of each child. The investigator had no preference of which parent to interview; the mother was available to be interviewed when the investigator called. The interview questionnaires are presented in Appendices C, D and E.

The child's interview was divided into four sections. There were questions under the following headings: (1) school life, (2) social life, (3) personal life and (4) reading. The first section contained questions pertaining to the child's attitude towards school and homework, and his perception of his own ability in school related tasks. The second section gathered information about his leisure time activities, and his attitude towards his friends and other children. The third category, entitled personal life, gave the child the opportunity to make three wishes, and to pretend to exchange identities with someone at home and at school. An indication of what is important and

valuable to the child, and his perception of the role of others, could emerge from such imaginings. This section also contained questions about television viewing. The fourth section was designed to assess the student's attitude towards reading, his interest in it, his perception of his ability in this area, his concept of what reading is, and his awareness of reading strategies. Two questions probed the degree of parental involvement in the reading activities of the child. This interview was designed to complement, and perhaps to supplement, information available from the Quality of School Life questionnaire administered to the SESA participants when they were in grade 4.

The parent interview was divided into three sections reflecting different stages of the child's development. These stages were (a) pre-school years, (b) early years of schooling, and (c) the present. It attempted to assess the literary environment of the home and the degree to which parents were knowledgeable about, and participated in, the child's education. Other questions asked parents to comment on their child's attitude towards school, and to give their perception of their child's achievement level. Parents were asked to indicate how they felt about their children's achievement. This interview, along with the Home Life questionnaire completed by parents of the

SESA participants, was used to provide information about the home life of the students.

The teacher interview attempted to tap many kinds of information. It asked teachers to give their perceptions of the child's academic potential, and to state their opinions on how well the child was achieving his potential. Teachers were also asked for information pertaining to the children's social position in their class, their attitudes towards school work, their level of self-confidence, their persistence in the face of a problem, and their degree of independence. If available, the children's teachers from kindergarten to grade 6 were interviewed. These teachers were very cooperative and the investigator believes that every effort was made to supply accurate and useful information. In only one case was the teacher unable to recall a child well enough to comment.

It is important to point out that the SESA questionnaires were designed for purposes different from those of the current study. These purposes were outlined in the background to the study. Furthermore, in keeping with the holistic point of view of this study, the parent, teacher, and child interviews had the broad purpose of familiarizing the investigator as thoroughly as possible with the six children who comprised the study's sample. In subsequent discussions, only those portions of the information sources which relate directly to the areas of

interest reflected by the study's research questions will be specifically described.

Information From School Records

In addition to the administration of the Lorge-Thorndike group intelligence test in grade 4 the school district also administered the CTBS, to these children in the spring of their grade 5 and grade 6 years. The same battery of tests was administered by the SESA study when the children were in grades 2, 3, and 4. The scores for grades 5 and 6 updated this information and were useful in dividing the children into the able and less able categories. In addition they provided some information about the children's level of achievement at the end of their grade 5 year, which fell between the end of the SESA study and the commencement of the present study.

## Studying the Data

Information from the three sources described in the previous section formed the basis for constructing reading achievement profiles which described each child's pattern of achievement in reading over a five year period from grades 2 through 6. Four areas of interest were considered. First, a description of the cognitive processing abilities of each child as they applied to the

reading task was undertaken. Information gleaned from this area applied directly to research question 1 which sought to compare the information processing abilities of able and less able readers. The development of phonological competence, the use of the three cueing systems in word recognition, and the ability to process print quickly and efficiently were considered. Comprehension skills such as the ability to understand and retell what had been read, the ability to summarize information, and the ability to make appropriate inferences were also described, as was vocabulary competence.

Second, the achievement profiles examined the children's concept of what reading is, and related this concept to the ability to monitor for meaning while reading. Many researchers consider self-monitoring behaviors an essential component of good comprehension. The children's knowledge and use of appropriate "fix-up" strategies in the event of comprehension failure were therefore discussed. These were the dimensions of the reading process considered in research question 2.

Third to be considered in the achievement profiles was the students' perceptions of their own reading ability and their self-concept in the area of reading. Closely connected with these ideas was interest in and motivation for reading. Their attitudes towards reading as a leisure

time activity was considered as it related to self-concept and motivation. Research question 3 addressed these issues.

The fourth research question focused on the home and social environments of the students, and the influence of these factors on reading achievement. The profiles examine the home environment of each subject with special reference to the role of books and reading in the life of the family. This aspect of the home was termed the literacy environment. The early reading experiences of these children both at home and at school were considered, since these early experiences often have far-reaching effects. Finally, in this area the children's leisure time activities were examined including reading and television viewing, and their involvement in the social life of home, school and community. These factors, too, have been shown to influence reading achievement.

On the basis of the information contained in these profiles, trends and common factors were identified which constituted a summary or synthesis of all the information. The information was then used to compare the able and less able readers.

Each of the four areas of interest reflected by the research questions are examined in more detail in the next sections. The sources of information relevant to each area are discussed.

Cognitive Processes of Reading

Scores on reading achievement tests such as the CTBS can give a reliable indication of the child's level of achievement in reading, especially when they are available over a period of years. In this study the reliability of these scores was increased by having them confirmed by the children's teachers. However, useful as this information may be, it contributes little to our understanding of the information processing strategies these children apply when reading. More detailed kinds of assessments are required. Two of these, miscue analysis and discourse analysis, are means of inferring the cognitive processes of readers by the qualitative examination of deviations from the text in the case of miscue analysis, and of recalled information following reading in the case of discourse analysis.

Looking at children's miscue patterns over several years permitted the researcher to observe developmental trends. The stage when children develop a decoding system efficient enough to allow independent access to print is important. Once this occurs, positive reading experiences encourage the rapid development of more and more efficient decoding skills and comprehension ability. Stanovich (1986) posited that if this stage is delayed, and if the young reader is exposed to more and more difficult reading

materials in the meantime, far reaching negative "Matthew effects" can result.

An examination of the readers' free recalls after passages had been read indicated how well the readers had understood the message encoded in the text. When these recalls were analysed by means of discourse analysis, a great deal more information emerged. Discourse analysis revealed if readers are comprehending at a literal level, and if they could make logical connections between various parts of the text. It revealed if unaided recall was relatively complete, or if the reader needed some support system such as probe questions to aid recall. The discourse analysis also indicated the reader's ability to integrate incoming text information with his/her own repertoire of background knowledge. Good reading comprehension involves a balanced mixture of information from the text and information already known by the reader. Inference making is the ability to make appropriate connections between informa[redacted] from both sources and is an essential skill in good comprehension. This important area of reading comprehension was also assessed by the Inferencing Abilities Test designed for use by the SESA study, and administered to the subjects when they were in grades 2, 3, and 4.

Research in reading generally supports a strong positive relationship between vocabulary competence and

reading comprehension. Thus, an assessment of the children's vocabulary was an important part of the reading achievement profile. The CTBS vocabulary subtest scores, available for grades 3 through 6, gave some indication of the children's level of achievement in this area. It must be recognized that this vocabulary test required the recognition of printed words; children with decoding difficulties were at a disadvantage in such a test. To provide an alternate measure, the Peabody Picture Vocabulary Test was also used to assess vocabulary development. This test assessed receptive vocabulary; that is, it tested a child's understanding of words presented orally. It did not depend on reading ability. Taken together, these two measures provided valuable information about the children's vocabulary competence.

Informal observations also contributed to the investigator's understanding of the richness and extensiveness of the children's vocabularies and allowed comparisons to be made. An able reader, upon meeting the term "patent office" in one of the graded passages, commented "I'm not sure how to say that word, but I think I know what it means". Questioning revealed that this student recalled reading the word in a fictional story about an inventor.

Contrasted with this is the less able reader who, in response to the question "Who is the most popular person

in your class?" proceeded to describe the smartest person. Some questioning led the investigator to conclude that the student didn't really understand what was meant by "popular". In any event when the term was explained, the student changed his answer. When asked if he had ever heard the word before, he replied that he might have, but wasn't sure what it meant. These kinds of observations, permissable in this kind of study, indicated vast differences in these two children both in vocabulary knowledge, and in the sources of their vocabulary learning.

An additional source of information utilized in constructing the information processing section of the achievement profile was the teacher interview. Teachers commented on various cognitive abilities such as reading comprehension, word recognition and vocabulary competence. They were also asked to indicate how well various test scores reflected the actual class performance of these children.

To summarize, information related to the cognitive processes of reading was available from miscue analysis, discourse analysis, responses to probe questions, the Inferencing Abilities Test, CTBS vocabulary and comprehension subtest scores, and scores on the Peabody Picture Vocabulary Test. In addition, informal observations made by the present observer when working

with these boys and girls, and opinions stated by the children's teachers added to the information from the sources mentioned above, and helped confirm or disconfirm some of the information gleaned from these sources.

Conceptualization of Reading Ability and Self-Monitoring

A reader's concept of what reading is has an effect on what the reader does while reading. Good comprehenders are likely to respond to the question "What is reading?" by giving meaning-oriented responses. Poor comprehenders are likely to give word identification or decoding responses to the same question. Essentially they say that reading is pronouncing words. Two questions on the child interview focussed on this idea. The response to the question "What makes a good reader?" indicated whether the child's concept of reading was meaning or decoding oriented. The question "What makes reading hard for you" also asked for information about the child's concept of reading.

Readers who realize that reading is a meaning-making endeavour are likely to recognize gaps in their understanding and to attempt to remedy the situation. This monitoring of meaning is recognized as an important comprehension strategy. Once competent readers realize that something does not sound right or does not make sense, they apply certain "fix-up" strategies. Reading on

to see if the difficulty resolves itself, rereading, and changing the rate of reading are frequently cited as effective courses of action. The following questions from the child interview addressed the issue of fix-up strategies:

(1) What do you do if you come to a word you don't know?

(2) What do you do if you don't understand what you're reading very well?

(3) Do you ever read things very slowly or very quickly? Why?

Responses to these questions also provided information about the degree to which the reader was self-sufficient or dependent on outside help when some problem with reading occurred. The distinction between children who are actively involved in their own reading or who passively await help from others is an important one in the area of monitoring. Self-monitoring for gaps in meaning assumes the active interaction of the reader with the text.

Information about monitoring was gleaned from other sources as well. Self-correction of miscues indicated that the reader recognized that the word read was unsuitable. An observation of rereading, of reading on when a problem occured, or of changing the rate of reading indicated a response to the realization that something

didn't sound right or make sense. Comments such as "I don't understand that very well" were occasionally made by the readers, and these indicated an awareness of meaning in reading. Conversely, children who were observed reading on with little regard for meaning, and actually making nonsense word substitutions, revealed a serious lack of attention to meaning. Awareness of the meaning aspects of reading is the first step in monitoring.

In summary, information sources related to the conceptualization of reading and self-monitoring include the child interview in which children self-reported what they believed reading to be and what courses of action they employed when they encountered some difficulty while reading. Also included were observations of monitoring behaviors in the ongoing reading process, and spontaneous child comments regarding getting meaning from the text. Independence or passivity in coping with a problematic situation was also observed, noted by the researcher, and reported by class teachers.

Readers' Perceptions of Their Own Reading Ability

It has been hypothesized frequently that the reader's perception of himself as a reader, and his self-concept in the area of reading, correlate positively with ability to read and with motivation for reading. The present

investigator attempted to discover the relationships among these constructs in the six cases under study.

The Quality of School Life questionnaire completed by the subjects in the third year of the SESA study contained many questions designed to assess the child's self-confidence in the school setting. Particular attention was paid to the question which asked children to judge their own competence in reading. Children responded to the question "How good are you in reading?" by checking one of the following: (a) a lot above average, (b) a little above average, (c) average, (d) a little below average, and (e) a lot below average. For comparison, this same question, presented in exactly the same way, was posed by the present investigator two years later when these children were in grade 6.

Other questions in the Quality of School Life questionnaire focussed on a more general conception of self-esteem. Under the general heading "School is a place where...." several items related to this construct. Examples are (a) I can do well enough to be successful, (b) I know others think a lot of me, (c) I am happy with how well I do, (d) I feel happy about my work, (e) people think that I can do a lot of things, (f) I can learn the things I need to know, and (g) I know how to cope with the work. Students were asked to rate their agreement with

these statements on a four point scale ranging from definitely agree to definitely disagree.

The child interview conducted by the present investigator also contained questions which related to self-concept. They were asked "How did you do in your last report?" and "How did you compare to the other kids in the class?". In addition, the question "Why do you think some reading is hard for you?" can be related to the research on attribution theory. The child was asked, in this question, to attribute his difficulty to some cause.

While teachers were not asked to comment directly on the children's self-concept, responses to some of the interview questions considered this idea. "Lacks self confidence", or "needs constant reassurance", were frequent responses to the question, "Is there anything about _____ that immediately comes to mind?". References to one child's nervousness when asked to read orally was an indication of poor self-confidence in the area of oral reading. One question asked teachers to comment on the child's level of persistence in a problem solving situation. The theory of learned helplessness discussed in the literature review suggested that lack of persistence is characteristic of low self-esteem children who have learned through repeated failure that their efforts in a problematic situation will be unsuccessful.

The child who is self-confident and who has a positive perception of himself as a reader is likely to be motivated to read, and to find reading useful and enjoyable. One would expect that such a child would mention reading as a free-time activity more often than the child who finds reading difficult and unrewarding and whose self-concept is poor. Questions on both the child and parent interviews allowed for a listing of the child's leisure activities. Teachers were also asked to comment on the child's interest in reading as a free time activity.

The reading achievement profiles, then, contained a description of each child's perception of his ability in reading and his self-concept in the area. These constructs were related to interest in reading and to reading achievement. The main information sources on which these descriptions were based were the Quality of School Life questionnaire administered by the SESA study, and the child, parent, and teacher interviews conducted by the present investigator.

The Home and Social Environments

This part of the reading achievement profile focussed on the home environments of the children, especially those aspects of home which related directly to books and reading. Leisure time activities and social involvement

were also examined. The main sources of information relevant to these issues are the Quality of School Life questionnaire and the Quality of Home Life questionnaire administered by the SESA study when the children were in grade 4, and the child and parent interviews conducted by the present investigator when the children were in grade 6.

Several features of the home literacy environment relate positively to good reading achievement. These features include availability of print materials, shared reading between parent and child from an early age, availability of a place and time for reading, and parental encouragement of reading related activities such as library visits. The Home Life questionnaire contained several items which assessed these literacy features of homes. They were as follows:

Home is a place where....

1. We subscribe to children's magazines (Owl, World, Highlights, Sesame Street Magazine, etc.).
2. An encyclopedia and/or dictionary is available for children's use.
3. There are lots of books for children.
4. We have always read to our children on a regular basis.

5. We like to talk to the children about the books we read to them.

Parents were asked to respond to these statements by checking one item on a four-point scale ranging from definitely agree to definitely disagree.

Several questions on the parent interview were also designed to assess the literacy environment of the home:

1. Was _____ interested in books before he/she went to school?
2. How often was _____ read to?
3. Did _____ ask to have stories read?
4. Can you recall any book or story that was a favourite?
5. Did _____ enjoy paper and pencil activities before he/she went to school?
6. Did _____ pretend to read books before he/she actually could?

Two questions on the child interview were concerned with time and place available for reading: (a) When do you do most of your reading at home? and (b) Where? Two other questions served to assess parental involvement in the reading activities of the child: (a) Do your parents ever go to the library with you? and (b) Do you and your parents discuss books together?

A question on the teacher interview asked if the child brought items from home to share with the class.

This question was pertinent to the home literary environment because frequently the items children bring to school reflect the response of the home to the child's mention of a topic being studied at school. Frequently the item brought is a book or a magazine.

Leisure time reading has often been found to correlate with good reading achievement. Items on the Home Life questionnaire which related directly to leisure reading were under the heading "Home is a Place where....". They are (a) children bring leisure reading books home from school, and (b) children bring books home from the public library. It was assumed that children who read for leisure would be able to name favourite books or authors more frequently than children who did not. Consequently, the child interview asked:

1. What kinds of things do you like to read?
2. Do you have any favourite authors?
3. Do you take books home from the library?

Research suggests that a complex set of home environment factors are related both to leisure reading and television viewing. Leisure activities were assessed by several items on the Home Life questionnaire. Parents were asked to indicate to what degree their children were involved with such leisure pursuits as word games, puzzles, board games, competitions such as music festivals, caring for pets and learning to grow plants. A

section titled "The whole family" pertained to activities in which the family participates together. Activities listed included watching educational television shows, attending plays or concerts, visiting museums, exhibitions, zoos or parks, visiting other countries or provinces, entertaining adult company, attending family get-togethers and going to church. Parents checked those which described their families.

Both the child interview and the parent interview asked interviewees to report leisure time activities. Questions from the child interview included:

1. What do you do after school?
2. What sorts of things do you do with your friends?
3. Do you go to any regular lessons or groups.

Teachers were also asked to comment on special interests of the children, and on extracurricular activities.

Television viewing, and how it may affect reading achievement was also explored in the reading achievement profiles. In the child interview children were asked to name their favourite shows and to estimate the amount of time spent viewing on weekdays and weekends. They were also asked to report any family rules about television viewing. Parents were asked if they had concerns about the amount of television viewing done by their children. On the basis of all this information judgments about

whether a child could be considered a heavy or relatively light viewer were made.

To summarize, each reading achievement profile contained a description of the child's reading achievement pattern over a 5-year period, and explored cognitive and noncognitive factors which relate to this achievement. The descriptions were based on data gleaned from the various information sources described in previous sections.

Synthesis

Finally a synthesis of the information presented in the achievement profiles was undertaken. This involved identifying trends and factors which were common to either able or less able readers, and which explained some of the differences between these two groups. In short, an attempt was made to answer the research questions presented by this study.

In addition, because the present study adopted a holistic and individual perspective, it was expected that interesting idiosyncratic factors would emerge which may perhaps account for the trends in the achievement pattern of a particular child. While these were not generalizable in any statistical sense, they did afford interesting ideas to consider in an attempt to understand the acquisition of literacy.

# CHAPTER IV

# READING ACHIEVEMENT PROFILES

The purpose of this chapter is to present a reading achievement profile for each of the six case studies over a five-year period. The profiles consider the information processing abilities of the students, their concept of reading and their ability to self-monitor their reading comprehension. As well, the perceptions these students have of their own reading ability and their self-concept in the area of reading are discussed. Aspects of the home and social environments which relate to reading are also examined. Both qualitative and quantitative information was included in these profiles.

## Reading Achievement Profile #1: Bradley

Bradley was the least able reader in this study. His CTBS comprehension scores revealed that as he moved up through the grades, the gap between his score and the average grade point score consistently widened. His verbal IQ, as measured by the CCAT, was below the 90-110 range considered to be normal, although his nonverbal IQ at 102 is well within the range. Bradley's teachers generally described his ability as low average.

An examination of Bradley's miscue patterns in grades 2, 3, and 4 revealed that there were no wide differences in the proportion of miscues which were graphically and phonetically similar to the text, and those which were semantically and syntactically acceptable. However, by grade 6 considerable differences had appeared which seemed to indicate a growing mastery of the grapho-phonetic cueing system, perhaps at the expense of meaning. The percentages of miscues corrected also decreased from grade 4 to grade 6. Assuming corrections to be based on an awareness that something did not sound right, or did not make sense, this was evidence that Bradley was inattentive to meaning when reading. These percentages are presented in Table 3.

Table 3

Bradley: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 75 | 69 | 75 | 78 | 26 |
| 3 | 79 | 71 | 85 | 95 | 15 |
| 4 | 75 | 68 | 70 | 85 | 30 |
| 6 | 93 | 89 | 50 | 43 | 7 |

When Bradley was in grade 4 about 5% of the total number of words on a grade 2 level passage were miscues. In grade 6 he read a grade 6 level passage with no miscues, and generated only 6% miscues on a passage designated a grade 7 level. This indicated a growing ability to decode. However, Bradley could answer only three of six comprehension questions on a passage which he decoded perfectly, and his recall was very short and incomplete. Again we see a wide gap between decoding skills and comprehension ability.

On a grade 7 level passage all miscues made were substitution miscues and of these, 36% were nonsense words. However, these were graphically and phonetically similar to the original words in the text. Not only did Bradley pronounce these nonsense words and read on with no attempt to self-correct, he actually used one of the nonsense words in his recall. This grade 7 passage was, of course, a frustration level passage for Bradley.

Discourse analysis was used to assess the quality of the information which Bradley recalled after reading. His recall was divided into clauses, and each clause compared to the text. Recalled information was placed in one of four categories: (a) a direct or reworded rendition of the text, (b) information summarized or synthesized from the text, (c) an inference, where the reader has drawn on his background knowledge to elaborate on the text, or

(d) erroneous information. The percentages of Bradley's recall of instructional level materials in each of those categories is given in Table 4.

Table 4

Bradley: Percentages of Recalled Information Falling Into Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 50 | 50 | 0 | 0 |
| 3 | 43 | 0 | 0 | 57 |
| 4 | 56 | 17 | 22 | 5 |
| 6 | 67 | 0 | 0 | 33 |

Most of Bradley's recalls were text-explicit which means he interpreted at a literal level. With only one exception (in grade 4) no inferences were made. In addition, Bradley regularly had problems answering probe questions which required inference-making. Further evidence of Bradley's difficulty with inferences was found in the results of the Inferencing Abilities Test designed for use in the SESA project. This test involved answering a series of questions about a picture, each of which

required the child to make an inference. Results of this test, presented in Table 5, indicated that Bradley frequently could not make the appropriate inference even when reading was not involved. Generally, it is believed that the ability to make inferences increases with age, partially because older children have developed more elaborate schemata as a result of more extensive experiences. Bradley's inferencing ability, as reflected by the percentages presented in Table 5, showed no development from grade 2 to grade 4. While the Inferencing Ability Test was not administered in grade 6, evidence already cited indicated that at this level he was still weak in the area of inferencing.

Table 5

Bradley: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 66 | 31 | 66 |

Vocabulary proficiency is another important cognitive correlate of reading achievement. Bradley's CTBS vocabulary subtest grade point scores are presented in Table 6.

Table 6

Bradley: Grade Point Scores For The CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 2.9 | 1.7 | 5.0 | 5.2 |

While these scores revealed little in the way of a developmental pattern, they were well below grade level and were sufficient to indicate a vocabulary deficiency. This was confirmed by Bradley's score on the PPVT which fell at the 13th percentile and meant his age equivalent was 9.1. Bradley's chronological age at the time of testing was 11.7. These scores were also substantiated by informal observation. Misinterpretation of a common word such as "popular" during the interview, use of nonsense words, and the repeated use of vague expressions such as "and all that stuff" during recalls also indicated vocabulary deficiency.

Bradley showed little evidence of monitoring his reading either at the word level or the text level. Corrections of miscues were uncommon, and use of nonsense words indicated inattention to meaning. Monitoring is based on a conceptualization of reading as a meaning making process. There was substantial evidence that

Bradley viewed reading as decoding. The predominance of miscues that were graphically and phonetically similar to the text, and his observation that reading was hard for him because he doesn't "know the words" supported this view. When asked what he should do if he doesn't know a word he replied "I'd just try to say it, or I'd ask someone". He reported no fix-up strategies in the event that he couldn't understand the reading other than to ask someone about it. When asked if he read some kinds of materials more slowly or more quickly than others, he answered that he usually read everything "about the same". In fact, beyond saying the words, Bradley did not seem to be thinking or reasoning as he read.

In response to the question "How good are you in reading?" Bradley described his own ability in reading to be "a little above average". He gave this response in grade 4 and again in grade 6. While this view of his reading ability did not fit well with reality, it did fit in with evidence supporting a rather positive general self-concept. When the present investigator met Bradley at his classroom for the assessment session, he was wearing his baseball cap perched jauntily on the side of his head. He didn't seem to be at all shy or intimidated, and kept up a steady stream of conversation. Once he understood the word "popular", he told the investigator that he believed that he was the most popular person in

his class because he was "nice and good at sports". His self-concept did not seem to depend on academic success.

Because of many inconsistencies in his responses, little information about Bradley's self-concept or about his feelings towards school could be gleaned from the Quality of School Life questionnaire completed when he was in grade 4. For example, Bradley agreed that school is a place where "I know people think a lot of me", "I feel good about my work", "I am happy with how well I do", and "I can learn the things I need to know". However, he also agreed that school is a place where "I get upset", "I feel sad" and "I feel restless". He disagreed with statements such as "people look up to me", "I feel great", and "I feel happy". The numerous contradictions make this information difficult to interpret.

Bradley's interview with the investigator revealed that he was active in a church sponsored boys' group, participated in organized sports, and generally enjoyed active pursuits such as soccer and bike riding. He did not name reading among his leisure time pursuits, and could not name a favourite book or author. He did say he enjoyed reading comics. Bradley estimated that he watched television "four or five" hours a day, and named several shows that he watches regularly. He had his own television in his bedroom and could not give any family rules governing viewing.

The interview with Bradley's mother revealed that he was not very interested in books as a pre-schooler, and any story reading was initiated by the mother. He showed little interest in paper and pencil activities, preferring more active pursuits such as building with a hammer and some nails. The present investigator had the impression that literary pursuits were not important in this family. Bradley attended nursery school but didn't really like it, and was not eager to start school in kindergarten.

Although his mother reported that he seemed to enjoy school in the early grades, he experienced little success in the early stages of reading, and found materials assigned for home reading difficult and frustrating. When asked how she helped, the mother indicated that she tried to teach him about periods, because he ran all the sentences together. It was significant that even at the very earliest stages, Bradley did not seem to recognize units of meaning in reading. It was also significant that his mother did not mention reading to him or indicate that she tried to help him deal with the meaning of what he was reading. During the interview, the mother named reading as her main area of academic concern, and expressed worry about how Bradley will cope in the junior high school grades. The investigator sensed a feeling of discouragement when the mother expressed the fear that "it might be too late for him now".

The SESA questionnaire was also completed by Bradley's mother. She described the home as a place where the children were involved in many activities including word games, puzzles, board games, caring for pets and growing plants. The mother indicated that an encyclopedia and a dictionary were available for use by the children, that the children had brought home books from the school and public libraries, and that they had subscribed to children's magazines. However Bradley reported that he did not go to the library. Information from the questionnaire also indicated that the family took holidays together, visited parks and other places of interest, and attended sporting events.

Interviews with Bradley's teachers indicated that his difficulties were apparent from the very beginning. His kindergarten and grade 1 teachers found him unsettled and easily distracted. His interest was minimal and he relied heavily on teacher help and direction to complete academic tasks. Several of his teachers believed that his general knowledge was limited. In the early grades he was described as a quiet, low-participator. By grade 5 his teachers were describing him as a student who seemed tuned out academically, but who made his presence felt in other, sometimes undesirable, ways. This pattern is, of course, not uncommon among children who find little satisfaction in the academic side of schooling.

At the time of this study Bradley was academically "at risk", and poorly developed reading skills seemed to be a large part of his problem. Any hope for improvement in his academic achievement may well depend on some systematic intervention to reverse this situation.

## Reading Achievement Profile #2: Karen

Karen was considered to be a less able reader by her teachers, and also for the purposes of the present study. Two measures of nonverbal general intelligence (CCAT and Lorge Thorndike) placed her well within the normal range with IQ scores of 104 and 108 respectively. Her verbal IQ scores were somewhat lower: 95 (CCAT) and 89 (Lorge Thorndike). Her CTBS reading comprehension scores place her consistently at least one full year below grade level for each of the five years for which these scores were available.

Miscue patterns on instructional level materials changed as Karen progressed from grade 2 to grade 6. In grades 2 and 3, the proportion of grapho-phonetically similar miscues was higher than the proportion of miscues that were acceptable semantically and syntactically. This indicated a somewhat higher reliance on visual cues than on semantic or meaning cues. In grade 4 the proportions were fairly even for all categories of miscues, but by

grade 6 the percentages were slightly higher for miscues that were acceptable in terms of meaning. The highest proportion of corrected miscues occurred in grade 4. There seemed to have been a trend towards more reliance on the meaning related cueing systems in the recognition of words. These percentages are given in Table 7.

Table 7

Karen: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 72 | 69 | 60 | 58 | 5 |
| 3 | 78 | 72 | 55 | 58 | 15 |
| 4 | 79 | 76 | 70 | 80 | 23 |
| 6 | 65 | 63 | 73 | 75 | 5 |

A close examination of the miscues themselves revealed some interesting patterns. First, many of Karen's miscues involved adding or omitting prefixes or endings. These errors often occurred in very common words. For example, "way" became "away", "places" became "place" and "Phil" became "Philip". Furthermore, many miscues involved substituting a single letter: "now

became how", "grow" became "grew", and "come" became "came". These types of miscues occurred at all grade levels. It seemed that application of the alphabetic principle, the ability to associate symbol with sound, had not become automatic and accurate for Karen. In addition it appeared that she had difficulty focussing on the details of the visual text.

While these miscue patterns seemed to indicate a weakness in the ability to process the visual input, it was clear that Karen was well aware of the syntactic and semantic structure of language. When she made a miscue, the next word or words usually followed logically from the error, often resulting in other miscues. For example, in the phrase "when all the hard work is done" Karen substituted "we" for "when". She then proceeded to read "we have work to be done". A further example was when she read "a talk by a Boy Scout" as "a talk about a Boy Scout". While "by" and "about" are quite different visually, the word "about" does follow logically from "a talk". However, such miscues in key words resulted in meaning loss.

If Karen's weakness was her difficulty in processing print efficiently and accurately, her strength seemed to be her ability to attend to the semantic and syntactic cueing systems. This was supported by an examination of her recalls and her answers to probe questions.

Considering the overall high percentage of miscues, (for example, 14% on a grade 5 level passage read when she was in grade 6), her recall was amazingly complete. She was able to glean a considerable amount of accurate and meaningful information from a reading which appeared to be quite inaccurate. This pattern was observable to a lesser degree on a grade 6 level passage. However at this level her interpretation was somewhat vague and general because miscues had become so frequent that much of the context was inaccessible to her. On the grade 7 level passage comprehension was seriously impaired because miscues had become very frequent. It seemed, then, that Karen was able to use context both as an aid to word recognition and as an aid to comprehension. However, inaccurate and inefficient decoding skills seemed to cause poor comprehension by making many contexts unavailable to her.

Despite the high percentage of miscues on the grade 5 level passage, Karen answered all the probe questions correctly. These probe questions required her to see relationships among the various ideas presented in the text, and one question required inference-making. In addition, Karen was able to discern a fairly subtle nuance of meaning in at least one instance. She interpreted the sentence "I could tell that he was planning something" as "I could tell that he had something up his sleeve", which refers to a very specific kind of planning, but was

exactly what the author intended. However, when asked what she thought the character had up his sleeve, she was unable to make a viable guess.

A look at a summary of the discourse analysis for instructional level passages (Table 8) revealed that while the greater part of Karen's recall was text explicit, some synthesizing of information and some inference-making had occurred. The proportion of erroneous information decreased through the grades. These percentages indicated that Karen was able to see relationships between textual ideas. No doubt this ability helped compensate for her weakness in decoding. However, an increase in the percentage of verbatim or reworded recall accompanied by a decrease in the percentages in the summarized and inferential categories occurred at the grade 6 level. This indicated a more text explicit or literal interpretation than Karen gave at previous grade levels. This may reflect the growing emphasis placed on reading expository materials after grade 4. At this level children are encouraged to read to learn - to note the facts and to remember them. In fact the passages Karen read for the informal reading inventory at the grade 6 level tended to be more factual than narrative. This trend may indicate some difficulty in seeing and expressing the logical relationships among factual ideas. This makes recalling what is read in the content areas

difficult for some children, and Karen's teachers indicated that this was a problem for her.

Table 8

Karen: Percentages of Recalled Information Falling Into Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 50 | 25 | 8 | 17 |
| 3 | 60 | 20 | 10 | 10 |
| 4 | 56 | 19 | 19 | 6 |
| 6 | 86 | 7 | 7 | 0 |

Table 9 presents the percentages of correct inferences made in response to the questions about the pictures which made up the SESA Inferencing Abilities Test. The relatively higher percentage in grade 4 over grades 2 and 3, indicated the suggested trend that inference-making ability increases with the age of the child. Considering Karen's difficulty with decoding, the present investigator believes that the results of the Inferencing Abilities Test which do not require actual reading was a more reliable indicator of her basic ability in inference-making than the discourse analysis which depended on reading. The relatively high percentage (81) at the grade 4 level indicated a good basic ability in

this area. Again, it appeared that Karen's problem seems to be with the actual decoding, rather than with basic reasoning and thinking ability.

Table 9

Karen: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 72 | 66 | 81 |

Information about vocabulary development is an essential part of a reading achievement profile. Both vocabulary assessments indicated below average development in this area. CTBS grade point scores on the vocabulary subtest for Karen were consistently well below grade level. These scores are presented in Table 10. However, considering Karen's strengths and weaknesses in reading as described above, and the nature of the CTBS vocabulary test, these scores were not surprising. This test presented words in isolation, and, deprived of context, it may be speculated that Karen found decoding a very difficult task. Karen's PPVT score was also somewhat below average. Her age equivalent on this list was 11.0 at a time when her chronological age was 11.9. Her score

was at the 37th percentile. Karen's difficulty with direct processing of print discouraged her from engaging in a large amount of independent reading, which according to many studies is one of the major contributors to vocabulary development in the elementary grades. Deficient vocabulary then made further reading more difficult. Sadly, negative "Matthew effects" seemed to be operating here.

Table 10

Karen: Grade Point Scores for CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 2.9 | 3.9 | 3.4 | 5.2 |

All evidence seemed to support the idea that Karen perceived reading as a meaningful process. There was also evidence that she monitored her reading on the basis of meaning. Karen's oral reading was hesitant, and she frequently reread phrases which did not sound right or made no sense to her. Information from her interview also indicated a meaning-oriented concept of reading. When asked what she would do if she didn't know a word, she responded that she would try to sound it out, but also added that if that didn't work, she would skip it and read

on to see if she could figure out "what would be sensible". She indicated that if she had trouble understanding she would read on for a while. Karen also reported that she goes back and rereads if she has trouble understanding. She indicated that she believes she reads "most things slowly". Considering her difficulty with word identification, this seemed to be a realistic perception.

When Karen was interviewed in grade 6, she was cognizant of her difficulty with reading, and appeared to have a realistic perception of her academic place in the class. Her response to the question "how good are you in reading?" was "a little below average". This was in contrast to her response to the same question when she was in grade 4. At that time her response was "a lot above average". These responses indicated a growing awareness of her own ability in reading, or perhaps more willingness to admit her difficulties.

On the same questionnaire she revealed a lack of confidence when she disagreed with the statements "I can do well enough to be successful" and "I know how to cope with the work". Karen told the present investigator that she believed herself to be close to the bottom of the class in terms of grades received on her report card, and always felt very nervous if asked to read aloud by her teacher. Without exception her primary and elementary

school teachers described Karen as unsure of herself, anxious, and lacking persistence in the face of difficulty. All evidence taken together suggested that Karen's self-confidence and self-esteem was generally poor, and this was particularly evident in the area of reading.

An interview with Karen's mother revealed that Karen was interested in books and paper and pencil activities as a young child, and frequently initiated story-reading sessions. She imitated reading behavior by reading easy books from memory. Dr. Seuss and Disney fairy tales were mentioned as her favourite books. She attended nursery school, learned songs and the alphabet from television shows, and was quite eager to begin school in kindergarten.

The parent interview also revealed that Karen was quite happy with school in the early grades. When asked if she was successful in the early stages of reading, Karen's mother replied that in her opinion the child was successful, but that test results from school indicated otherwise. The mother explained that Karen always needed a lot of help and support when reading, and she could understand why she did poorly on tests where she was required to work independently. Frustration with reading materials sent home from school were avoided by the help and support provided by the family. Karen's mother

reported that she was interested in doing her homework and seldom had to be told to start.

The mother reported that she was concerned about Karen's reading ability and the effect it was having on her school success. She indicated that Karen worked very hard, and the family was aware of the importance of positive reinforcement, and praised her efforts frequently. She felt that, on occasion, Karen had worked very hard at school, but her efforts resulted in little success. This comment reminded the present researcher of Brophy's (1983) caution that learning tasks must be tailored to the child's ability so that effort can be perceived to be making some difference. Karen's parents provided help with reading homework by reading difficult material to her and discussing the content, and by "taking turns" with reading when the assignment was long. Karen did written homework independently. This interview revealed concerned parents with a positive attitude towards schooling. Interviews with teachers confirmed this interpretation.

Karen's home, as described by responses to the parent questionnaire for the SESA study, encouraged children to participate in many home and community activities. Books were available, the children played games, worked on puzzles, learned to fix things, and learned to care for themselves. The whole family visited points of interest,

attended various types of entertainment, and went on vacation together. The mother indicated that she encouraged her children to participate in one or two organized activities outside the home, but was reluctant to allow extensive participation since homework was time-consuming, and she believed that children needed some unstructured time. Karen told this investigator that she watched three or four hours of television per day, including soap operas on rainy afternoons. Her mother expressed a concern about the amount of television being watched, and said she tried to limit it by encouraging participation in other activities.

Karen was described by her teachers as being very eager to please; she seemed to have been well-liked by her teachers. Generally the teachers believed that Karen lacked extensive background knowledge, although one teacher suggested that background knowledge was difficult to judge, because Karen was reluctant to contribute orally in class. Reading was mentioned as an area of difficulty by all of her teachers, and most mentioned that Karen had to work very hard to achieve as well as she did. Several teachers said they believed that she was achieving close to her potential. Her future success may well depend on the ability and willingness of the school to provide the support she needs to help her overcome her difficulties with reading, or at least to help her compensate for them.

## Reading Achievement Profile #3: David

David was the third less able reader identified by this study. A considerable amount of concern about his academic progress was expressed by his parents and his teachers who believed that he was achieving far below his potential. David's verbal and nonverbal IQ scores placed him well within the average range of intelligence. His CTBS comprehension scores placed him below grade level every year except grade 4 when he scored slightly above. His grades 5 and 6 scores place him a full year below grade level. His teachers for those grades agreed that these scores were indicative of his actual achievement in reading.

David's miscues at four grade levels revealed little evidence that he was relying more heavily on one cueing system than on another, except in grade 2 where he seemed to be more reliant on the grapho-phonetic cueing system than on the semantic and syntactic. By grade 6 the proportions of miscues in all four categories were quite evenly distributed, indicating that David was capable of using all cueing systems in decoding print. Perhaps more significant was the fact that in grade 4 and grade 6 he generated relatively few miscues on grade level materials indicating that after grade 4, decoding did not present a problem for him. The results of the miscue analyses are presented in Table 11.

Table 11

David: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 88 | 84 | 65 | 63 | 30 |
| 3 | 66 | 59 | 70 | 70 | 30 |
| 4 | 67 | 67 | 75 | 83 | 25 |
| 6 | 64 | 62 | 62 | 64 | 9 |

An examination of David's recall after reading the grade 6 level passage, and his answers to the comprehension questions revealed an interesting phenomenon. David had a considerable amount of difficulty in constructing his recalls of the passages. Invariably they were very short and incomplete. His recall of a passage which generated less than 1% miscues contained only three clauses.

David became quite anxious when asked to recall the passage on his own, and kept repeating, "This is hard to do - I can't do this - I don't know what to say". When the investigator suggested that some questions might help him to remember he seemed very relieved, and proceeded to answer all the probe questions but one correctly. His

comprehension of the passage inferred from these answers was quite adequate. He made use of his background knowledge to elaborate some answers and was able to give a title for the story which synthesized its content very succinctly. An examination of the recall and the answers to questions on other passages and at other grade levels suggested a similar pattern. It appeared as if David needed some external structure to help him organize information, and that the probe questions provided such a structure.

An examination of the results of discourse analyses for four grade levels presented in Table 12 indicates some ability to summarize and synthesize information presented in text. However, these analyses were made on the basis of very brief and inadequate recalls, and perhaps do not give a very reliable picture of his abilities in these areas. His responses to the probe questions indicated that the discourse analysis may underestimate these abilities.

Table 12

David: Percentages of Recalled Information in Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 20 | 20 | 60 | 0 |
| 3 | 33 | 33 | 0 | 33 |
| 4 | 25 | 62 | 0 | 13 |
| 6 | 64 | 21 | 0 | 15 |

Although an examination of the discourse analysis showed that David made inferences independently at only one grade level from grades 2 to 6, the results of the Inferencing Abilities Test (Table 13) indicated that he is able to generate appropriate inferences in response to direct oral questions. All this evidence indicated that David was able to relate textual ideas to each other and to his own background knowledge. However, the evidence also revealed that he did not do this spontaneously when reading independently. Why he does not do so is a question of considerable complexity and may partially explain why teachers invariably reported that they found David's difficulty with reading very hard to understand.

Table 13

David: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 72 | 53 | 94 |

Information provided by David's grade 6 teacher regarding projects in her room may contribute something to an understanding of his difficulties. When the study of a special topic, air transport for example, was undertaken, researching and organizing the information was a class venture under the direction of the teacher. Information was gathered by brainstorming and by exposure to various information sources such as books and films. An outline in the form of jot notes organized under headings was developed cooperatively by the children and the teacher. David contributed well to this phase of the work.

After the outline was complete, the students were then expected to work independently. They were required to write up the information in a logical and organized way, extending the information and adding details where they could. Most grade 6 students were able to do this without undue difficulty. Their finished projects were well organized and elaborated by the addition of pictures

and drawings. David, however, seemed unable or unwilling to do this part of the work despite his keen interest in the planning stages. His report consisted largely of a disconnected list of isolated bits of information. The difficulty seemed to be in organizing and presenting the information. His difficulty with recalls also indicated that he had problems organizing and presenting information which he had read, and understood. The difficulty appeared to be a more generalized cognitive disability rather than a specific reading problem. David seemed to be unable or unwilling to engage in the relatively strenuous mental activity demanded by the task of organizing bits of information into some coherent whole, whether it was in presenting information orally after reading, or in presenting it in writing when doing a school project.

Vocabulary was another area where inconsistent evidence invited speculation about the real nature of David's ability. Considering that the spring testing would have been done in April or early May, the CTBS Vocabulary Subtest Scores (Table 14) were at or above grade level each year. However, the PPVT scores show him to be somewhat below average in vocabulary proficiency. His age equivalent on this test was 10.8 at a time when his chronological age was 11.6, placing him at the 37th percentile. These discrepancies may of course, reflect

differences in the format of the tests, and in the aspect of vocabulary being measured.

Table 14

David: Grade Point Scores for CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 4.1 | 4.8 | 5.4 | 7.5 |

Generally David's teachers reported that he had little difficulty in learning new words, and in fact suggested that in certain specialized areas such as science and mechanics, his vocabulary was quite extensive. David seemed to be very interested in these areas, and an extensive vocabulary probably reflected extensive background knowledge. David also showed some evidence that he was able to generate appropriate vocabulary. While he forgot that, in a story about penguins, the young were referred to as chicks, he surmised that they might be called "hatchlings". This was a viable guess based on appropriate background knowledge. By his own report, and confirmed by his mother, David's leisure reading was largely in science and mechanics magazines. One of his teachers described him as a "walking encyclopedia of

scientific facts and figures". No doubt this specialized reading had influenced the development of a specialized vocabulary.

There was some evidence to support the idea that David's conceptualization of reading was meaning oriented, and that he monitored the ongoing reading process on the basis of this concept. When asked in his interview what he did when he couldn't pronounce a word he responded that he read on "to see what would make sense". When asked about difficulties in understanding the text he said he read it "over again in my head", and he reported that he slowed down his reading when the text was difficult for him. In grades 2, 3, and 4 he corrected a high percentage of miscues, indicating an awareness of when a word doesn't make sense or sound right. The percentage of miscues corrected became much lower at the grade 6 level, perhaps indicating that he had learned that the occasional mispronunciation was unlikely to have a serious effect on overall meaning. This is characteristic of able readers who view reading primarily as a meaning getting process. Like the able readers, at the grade 6 level his miscues had become quite infrequent.

When David was in grade 4 he reported that he believed himself to be "about average" in reading ability. By grade 6 he had changed this to "a little below average". He said that he was probably in the middle of

the class in terms of report card grades. David's teachers reported a very negative attitude towards the reading which was part of a school assignment, and towards school work in general. When asked why he thought he found some reading hard, David's reply was that "I don't want to do it much". This attribution of difficulty to lack of effort implies that he believed that if he wanted to do it he probably could, and this is more indicative of a motivation problem than of low self-esteem or lack of confidence.

Information derived from interviews also seemed to point at affective factors as being strongly influential in David's pattern of achievement. David's mother told the investigator that he loved books as a small child, was read to often, and initiated story reading sessions. She was able to name favourite books by title. He imitated reading behavior and enjoyed cutting and making things with paper and glue. She described him as a very curious and active preschooler, interested in his environment, and always looking for something different to do. He attended a day care centre which the mother believed was of benefit socially, and was quite eager to start school in kindergarten. However, the mother reported that his initial enthusiasm began to slip very early in the primary school years. In her words he was "disappointed with school, and wanted to do more". At the beginning stages

of reading instruction he was able to read the materials sent home for practice, but didn't want to. In fact he tried to avoid any work connected with school. This struggle over homework persisted throughout elementary school with grade 6 described as the "roughest yet".

David's mother reported that he enjoyed the social aspects of school, liked being a library prefect, and was interested in any kind of "hands on" work such as art projects or science experiments. He disliked language arts as a subject, but was an avid reader of science magazines and comics. He also read fairly undemanding literature such as the Hardy Boy books. He had "collections" of various types, participated in sports, was a member of a church sponsored boys' group, and until recently played an instrument in a local band.

David's own interview revealed very negative attitudes towards the academic side of school. He described school as generally "boring". He believed he had too much homework, and sometimes did not have time to finish. If he could be the school principal he would eliminate homework. The questionnaire completed in grade 4 as part of the SESA study also showed many negative feelings. Under the heading "school is a place where.... David disagreed with statements such as "I get enjoyment", "I like to learn new things", "I am happy with how well I do", "I really like to go", and "I feel happy". He agreed

with the statements "I feel lonely", "I feel restless", and "There is nothing exciting to do". The negative attitudes to be inferred from these statements confirmed those mentioned by his mother.

All of David's teachers reiterated these negative attitudes. Descriptors such as "turned off", "avoids work", "disinterested", "disorganized", "immature", "short-attention span", and "dawdler" were used over and over. When asked if he depended on the teacher for help and direction, his grade 6 teacher explained that he avoided contact with the teacher as much as possible, never asked for help, and did the absolute minimum of the assigned work. Without exception, David's teachers believed that he was achieving far below his potential.

His teachers reported many efforts to solicit more interest and cooperation. In October of the school year his grade 4 teacher set up weekly telephone conferences with the home in the hope that constant and systematic contact would result in some change in behavior. The parents seemed cooperative, but so little difference was noted that by April this teacher gave up in discouragement. His grade 6 teacher visited the home to discuss the problem with David and his mother, again to no avail. He had frequently been detained after school to complete unfinished work. It seems that all efforts to force his interest and involvement have failed. His

teachers believed that he was at risk of failing grades in his junior and senior high school years. His teachers were able to present few theories to explain David's negative attitude and lack of interest. By his mother's report, the problem occurred very early and had gotten progressively worse.

The SESA parent questionnaire was completed by David's mother and indicated that books had some importance in his home. The mother reported that children and parents visit the public library, that they subscribed to children's magazines, that the children were read to on a regular basis, and discussions involving books took place. David reported that his mother read "big thick books". In this home children were involved in playing various word and board games, puzzles were used, and the family participated in activities such as visits, attending church, and going on vacations. David reported watching a lot of television. In fact he told the present investigator that he watched television six or eight hours a day. Believing this estimate to be rather high, the investigator asked him to name some shows that he watched regularly. His list was lengthy, leading the investigator to conclude that while he probably overestimated the number of hours spent viewing, it was likely that he did spend a considerable amount of time watching television. He was quite specific about the hours spent viewing on Saturday, stating that he watched from 8:00 in the morning

until 2:00 p.m., and then began to watch again at 5:00 p.m. He reported that his Saturday morning music school made him miss all the good cartoons, so he gave it up. David reported that he had a television set in his bedroom and that there were few restrictions placed on his viewing. While David's mother didn't indicate the number of hours that David spent watching television she indicated that they tape shows which come on during homework time to be viewed later. She did comment "we are not big TV people".

At the time of this study David was experiencing serious difficulties at school. The underlying causes of his school problems were, however, difficult to ascertain. Lack of motivation seemed to have had a strong negative effect on achievement. He also appeared to have a generalized disability in organizing and presenting information. It may be speculated that instruction in specific strategies designed to help him overcome this difficulty might be beneficial provided the means of motivating him to apply the strategies could be found.

**Reading Achievement Profile #4: Gregory**

For the purposes of this study Gregory was considered an able reader. His teachers agreed that his reading ability had developed well and presented few problems for

him. His IQ scores on both the CCAT and the Lorge Thorndike group intelligence tests placed him within the average range of intelligence. His CTBS comprehension test scores had been consistently slightly above grade level, with one exception in grade 3. He was described by his teachers as an average student who had worked close to his potential throughout his elementary school years.

An examination of Gregory's miscue patterns suggested that in grade 2 he was somewhat more dependent on the grapho-phonetic cueing system than on the semantic and syntactic cueing systems. However, as he progressed through the grades the more even distribution of miscues across the four categories suggested a growing ability to access all cueing systems in the ongoing process of word identification. This is a common developmental trend. It was perhaps more significant that by grade 4 he was generating very few miscues on grade level passages, and by grade 6 generated only 3% miscues on a passage designated a grade 8 reading level. This evidence indicated that by grade 4 Gregory had become quite proficient at decoding. A summary of the miscue analysis is presented in Table 15.

Table 15

Gregory: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 71 | 71 | 48 | 53 | 10 |
| 3 | 89 | 82 | 73 | 83 | 10 |
| 4 | 67 | 66 | 55 | 60 | 30 |
| 6 | 77 | 79 | 74 | 85 | 6 |

Gregory's recalls were also quite complete, showing an ability to recall in sequence, and indicating a good memory for details. His recall was largely text explicit suggesting a thorough but literal processing of the text. However, the results of discourse analysis (Table 16) indicated some ability to synthesize and summarize information. His answers to probe questions gave further evidence of his ability to see relationships between ideas. While Gregory's recall did not contain a high percentage of inferential information, responses to probe questions indicated that he was able to make appropriate inferences. The results of the Inferencing Abilities Test (Table 17) also showed a good ability to make inferences in response to oral questions. These assessments

supported the opinions of his teachers that he was able to decode and comprehend grade level materials without difficulty.

Table 16

Gregory: Percentages of Recalled Information in Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 50 | 37 | 13 | 0 |
| 3 | 61 | 6 | 17 | 16 |
| 4 | 85 | 7 | 8 | 0 |
| 6 | 80 | 13 | 5 | 2 |

Table 17

Gregory: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 81 | 72 | 84 |

Table 18 shows Gregory's scores on the CTBS vocabulary subtest given in the spring of each year from grade 3 to grade 6. The expected average grade point score for testing done in April or early May would fall at .8 or .9 of the particular grade level. The table indicates that Gregory's scores were near or somewhat above grade level for each year. His age equivalent score for the PPVT was equal to his chronological age, and fell at the 53rd percentile. These test results indicated that Gregory's vocabulary development is average for his grade and age.

Table 18

Gregory: Grade Point Scores for CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 3.7 | 4.8 | 6.2 | 6.7 |

Correction of miscues indicates some monitoring activity, and Gregory reported using "fix-up" strategies such as reading on if a word is unknown, reading difficult material more than once, and reading difficult material more slowly. Use of these strategies indicated a meaning oriented view of the reading process. They are used in

response to an awareness that something does not make sense.

In grade 4 Gregory described himself as being a little above average in reading. By grade 6 he had changed this assessment of his own reading ability to average. Gregory seems to have a realistic concept of his own capabilities. The SESA questionnaire completed when he was in grade 4 indicated a positive attitude towards school and a positive self-concept. He agreed with statements such as "I can do well enough to be successful", "I am happy with how well I do", and "People think that I can do a lot of things". When Gregory was interviewed in grade 6 he expressed the opinion that school was "pretty good", that he and his parents were happy with his report card, and that his teachers were fair in setting homework and other assignments. Although Gregory expressed admiration for the student he considered to be the smartest in the class, he left the distinct impression that he is pretty well satisfied with himself the way he is.

Gregory's teachers described him as a quiet cooperative student, serious about his work, and persistent in the face of difficulties. He contributed to class discussions when asked, but was shy about volunteering. His parents were reported to be very supportive of the school, and held high expectations for

their children. It seemed that Gregory's school career had been quite successful, and he exhibited the positive attitudes that such success engenders.

An interview with Gregory's mother served to reiterate her interest and concern, and supported the opinion of his teachers that while his parents held high expectations of him, their expectations were reasonable. The investigator had the impression that this home was supportive and willing to contribute in any way it could to the fulfillment of these expectations. The interview revealed that Gregory was read to consistently as a young child, and that he particularly liked animal stories. He was eager to start school in kindergarten, and experienced little difficulty with the early stages of reading instruction. His mother reported that she always supervised homework, read assignments with him, and discussed their content. At the time of this interview, Gregory's mother reported that while he was quite independent with homework, she still checked his written work for errors, and helped him to prepare for tests which he took very seriously. It was obvious that Gregory's mother was quite interested in grades. She identified subjects in which his grades were improving and also mentioned areas in which his grades seemed to be slipping. She told the investigator that she was very strict about homework time, and felt that if she had not strictly

enforced study hours her son would not have achieved as well as he did.

The mother's responses to the SESA home life questionnaire indicated that the children of this family had some access to books at home. However, Gregory reported that he and his family did not use the public libraries, and that his main source of books was the school library and a book club operated by the classroom teachers at his school. He was able to name several books which he had read recently, and expressed a preference for adventure stories and humourous books. The parents' own reading was confined to newspapers and homemaker's magazines. Based on a visit to Gregory's home, the investigator believed that time and space for reading would be readily available.

Gregory reported an interest in some television shows, but stated that if the weather was good, he would prefer to be outside. He told the investigator that he was not allowed to have the television on while homework was being done, and was not permitted to watch shows which started after 9:30 p.m. on school nights. It was obvious that since the family owned one television set, the parents also had to forgo viewing while the children did their homework. Gregory's mother reported that she controlled television viewing "pretty strictly".

Gregory belonged to a church sponsored boys' group, but this was the extent of his scheduled out-of-school activities. He expressed an interest in informal sports activities, but did not belong to any teams. He enjoyed going in the woods to cut trees and build cabins, and liked working with motors. His father owned a small auto-repair garage, and Gregory reported that he liked to go into the garage to help out. However, this was discouraged by his mother, who told the present investigator that her husband had to work very long hours at rough and dirty work in order to make a living. The mother hoped that her son, through education, would find a better means of making a living when he left school. It was obvious to the investigator that this home, while spotlessly clean and well organized, was not particularly affluent. These parents seemed to view education primarily as a means of getting a good job and thus achieving a better life style than their own. They were very conscientious in their efforts to help Gregory and their other children achieve these goals.

Family trips, visits to parks and other points of interest, and family attendance at plays, concerts, and other types of entertainment were reported to be infrequent occurrences, probably because of cost and the father's long hours at work. The mother reported that the family did engage in local pursuits such as berry picking,

going on picnics, and attending church together. This home was somewhat limited in its ability to provide travel, attendance at cultural events, and expensive lessons. However, it appeared to provide a well organized, warm and supportive environment for the children.

It was apparent that Gregory's school experiences had been successful and satisfying. His good self-concept and positive attitude towards school were probably a result of these experiences and of his supportive home environment.

### Reading Achievement Profile #5: Sarah

For the purposes of this study Sarah was identified as one of the three able readers. Her elementary school teachers agreed with this assessment of her reading ability, but her earlier primary school teachers reported that she had made a very slow start in beginning reading. In the primary grades her teachers and her parents were quite concerned about her progress.

The CCAT results gave her a verbal IQ of 87, and a nonverbal IQ of 91. A year later, when she was in grade 4, the Lorge Thorndike group intelligence test scores resulted in a verbal IQ of 102, and a nonverbal IQ of 104. Many factors, of course, could explain these wide differences, although in this sample there is no

consistent pattern showing Lorge Thorndike IQ's to be higher than those obtained on the CCAT. It was interesting that in Sarah's case this increase in IQ score was accompanied by improvement in academic performance in general, and with reading performance in particular. However, since these tests involve reading, these results are not surprising.

CTBS comprehension scores also improved at the grade 3-4 level which seemed to be a time of transition for Sarah. At the end of grade 2 her grade point score on this test was 1.8. This was a full year below grade level. A year later, at the end of grade 3 her 3.7 score was very close to grade level, and by the end of grade 4 she scored slightly above grade level. Both her grade 5 and grade 6 CTBS scores were well above grade level.

Miscue analysis also seemed to point to a transition period between grade 3 and grade 4. In grade 2 the low percentages of miscues in the meaning oriented categories indicate little use of context as an aid in word recognition. Indeed the low percentages of graphically and phonetically similar miscues showed little proficiency in the use of these cueing systems either. Combined with a fairly high occurrence of miscues generally, it might be surmised that at this level Sarah was experiencing difficulty with all aspects of reading. In fact, at the

grade 2 level she told the SESA researcher that she hated reading.

By grade 3 the percentages of grapho-phonetically similar miscues had increased, as had miscues which were appropriate in terms of syntax. However semantically acceptable miscues were still a low percentage of all miscues made. In grade 4 and again in grade 6, the occurrence of miscues in the graphically and phonetically similar categories had increased considerably, although percentages of miscues that were acceptable in meaning were still relatively low. It seemed that by these grades Sarah had become quite proficient in the direct visual processing of print. In fact, in grade 6, Sarah made only four miscues on a passage designated a grade 10 reading level. At this time Sarah simply pronounced unfamiliar words phonetically and read on without pause or hesitation. It appeared that she had realized that a word perfect rendition of the text is not essential to understanding. In fact, the miscues generated on passages read in grade 6 seemed to have little negative effect on comprehension, except when questioning revealed that she did not know the meaning of the mispronounced word. The results of the miscue analysis are presented in Table 19.

Table 19

Sarah: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 67 | 61 | 53 | 55 | 5 |
| 3 | 79 | 68 | 40 | 70 | 20 |
| 4 | 90 | 77 | 60 | 55 | 25 |
| 6 | 90 | 70 | 60 | 75 | 10 |

In grade 2 Sarah corrected very few of the large number of miscues generated. This lack of monitoring behavior seemed to fit well with her general lack of ability at this time. The higher percentages of corrections in grade 3 and 4 showed some attention to monitoring. By grade 6 the percentage of corrected miscues was again quite low, but it must be recalled that at this level very few miscues were made even on materials considered to be well above her grade level. This ignoring of occasional word level difficulties is characteristic of good readers who seem to realize that these kind of problems are unlikely to adversely affect meaning.

Sarah reported use of reading strategies which reflect a meaning oriented concept of reading, and an awareness that lack of understanding is the essential reading problem. She reported that if she didn't know a word she would pronounce on the basis of how it looked and read on. She stated that she would likely get it right later when her teacher discussed the passage. She also reported that she read difficult material more than once, and that she read some materials more slowly than others, especially if she is reading a mystery and didn't want to miss any of the clues. Adjusting reading rate to the purpose for reading is a mature reading skill. Sarah also reported her use of mature study skills such as making notes of impor points as she read. This study technique was taught to her by her mother.

An examination of the results of discourse analyses (Table 20) showed that Sarah had demonstrated some ability to synthesize and summarize information gleaned from print from grade 2 on. In grade 2 and 3, however, a significant proportion of her recalls was erroneous, indicating lack of understanding, or misunderstanding of some portions of the passages. In grade 4 and grade 6 none of the recalled information was erroneous. In grade 6 Sarah's recalls were quite complete and sequential. She systematically began each recall with a statement summarizing the overall content of the passage. Her responses to probe questions

on passages up to the grade 9 level showed some ability to relate textual information to her own background knowledge. Misunderstandings seemed directly related to problems with the meaning of specific words. She was able to decode a grade 10 level passage well, but had trouble with comprehension. At this level her recall was incomplete and her answers to probe questions were vague and general. Considering that the topic of the grade 10 level passage was the problems faced by European immigrants in New York in trying to bring relatives to America, one might well assume that most grade 6 students in Newfoundland would have little background information to bring to this passage.

Table 20

Sarah: Percentages of Recalled Information Falling into Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 50 | 30 | 0 | 20 |
| 3 | 33 | 25 | 17 | 25 |
| 4 | 75 | 25 | 0 | 0 |
| 6 | 67 | 20 | 13 | 0 |

The results of the discourse analysis (Table 20) did not indicate a developing ability to make inferences. However the results of the Inferencing Abilities Test (Table 21) showed a very high score in grade 4 compared to the average scores achieved in grades 2 and 3. The large increase at this stage corresponded to a large increase in scores on several other assessments including IQ. It also corresponded to an overall improvement in school performance in general, and in reading in particular, which was reported by Sarah's parents and teachers at this time.

Table 21

Sarah: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 72 | 63 | 91 |

Based on her CTBS vocabulary subtest scores, Sarah's vocabulary development seemed to be lagging somewhat behind her ability to comprehend extended text. These results are presented in Table 22, and generally show Sarah's grade point scores to be somewhat below grade level. However her age equivalent on the PPVT was one

full year above her chronological age and was at the 68th percentile. The fact that this was a receptive oral vocabulary test which did not rely at all on decoding ability may account for some of this difference in scores.

Table 22

Sarah: Grade Point Scores for CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 3.6 | 4.8 | 5.4 | 6.3 |

Sarah's teachers in the early primary grades believed her to be somewhat lacking in background knowledge, although her home seemed to provide a variety of interesting experiences, including trips to Florida and other holiday areas. These observations were based on her contributions to discussion in class, and at this time Sarah was described as shy and reluctant to volunteer information. However, one teacher speculated that since Sarah was the last child of parents who are very actively involved in running a family business, and since her siblings were much older, she might have been somewhat overlooked in general family conversation which might have contributed to background knowledge and vocabulary

development. While this study had no means of assessing these home factors, such an assessment might well have helped to explain some of Sarah's early difficulties.

In an interview with the present investigator, Sarah's mother recalled that as a pre-schooler Sarah showed little interest in books, seldom requested that a story be read, and made no attempt to imitate reading behavior. She learned general kinds of things from television, but did not learn the letters of the alphabet from Sesame Street as many children do. Her mother reported that she found it difficult to settle down to any activity for any significant length of time. It was not surprising then that Sarah seemed unready for the formal introduction to reading in late kindergarten and in grade 1. Sarah's mother reported that she had difficulty from the beginning, had little interest in reading, and tried to avoid it whenever she could. This parent claimed that her child was into formal reading instruction before she knew her letters, and in fact she taught Sarah her letter names at home at the end of the kindergarten year. She expressed surprise that this was not reported by the school until Sarah was near the end of her kindergarten year. This perhaps explained the mother's somewhat ambivalent feelings towards the school which were reported by two of Sarah's early grade teachers. In addition, the mother commented that she was quite dismayed by Sarah's

lack of progress because none of her older children had experienced any academic difficulty.

During the early primary grades Sarah's teachers reported various kinds of difficulties. She did not seem to be able to settle, and seemed unready for formal reading instruction. She was described as shy, insecure, and in need of extra attention from her teachers. She made few friends at school and was a reluctant participant in class activities. Her teachers believed that she had good academic potential, but for some reason did not seem to be achieving as well as her potential indicated. Her reading difficulties included problems in recalling sight words, difficulty in learning new vocabulary words, apparent lack of background knowledge, and problems with comprehension. These teachers reported giving Sarah extra attention and encouragement, and they believed that her parents were encouraging and supportive at home.

These poor beginnings, which according to Stanovich (1986), can result in a continuing downward spiral of negative effects, seemed, fortunately, to have been overcome in Sarah's case. Her mother reported that by grade 4 Sarah seemed to be doing much better, and her interest in reading began to increase. The test scores available to this study reflected this change, and her grade 4 teacher reported that she was doing well in reading. She appeared to be less dependent on her

teachers for reassurance and direction, and her social position in the class had improved. Her grade 6 teacher described her as a very able reader, among the best in the class. Sarah herself reported that grade 6 had been her best year in school. She liked her teacher, seemed to have many friends, and brought home mostly A's and A+'s on her report card.

It was difficult to attribute these happy results to any one cause. There was no special intervention at school and no particular changes were reported at home. It may be speculated that in the latter part of grade 3, which was relatively late, Sarah "cracked the code"; she learned to make use of the alphabetic principle to gain independent access to print. This led to successful and rewarding encounters with print, which led her to read more, which in turn led to more success and positive results. These are the positive Matthew effects from which many good readers are able to benefit much earlier than Sarah. Fortunately, however, her previous negative experiences did not seem to detract from her subsequent success, except perhaps in the area of vocabulary development.

It may also be significant that despite her difficulties, Sarah's mother reported that she was fairly happy with school in the early years. Sarah herself expressed positive feelings towards school in her SESA

Quality of School Life questionnaire. She agreed with statements such as "teachers are usually fair", "I am happy with how well I do", "I can do well enough to be successful", and "people think that I can do a lot of things". Her response to the question "How good are you in reading?" in grade 4 was "a lot above average". By grade 6 she had changed this response to "a little above average". She believed her report card grades to be similar to her friends', with perhaps "more A+'s". She told the investigator that she often finished assigned work before the others, and so had time to read or to work on a craft, and she really enjoyed these privileges.

On the SESA Home Life questionnaire the mother reported that there are many books in the home, that they had subscribed to children's magazines, and that dictionaries and encyclopedias were available to the children. Sarah told the investigator that she was usually allowed to order "lots of books" from the book club, and that her older sister had "shelves full of books" which she shared. She also reported exchanging books with her friends, and getting them as gifts from her grandmother. She listed reading as one of her favourite leisure time activities and expressed an interest in mysteries and in books about girls her age. She named Gordon Korman and Beverly Cleary as her favourite authors.

Sarah's home was quite affluent in terms of material wealth. However, apart from vacation trips to Florida, family outings were reported as occasional or rare events. It was likely, of course, that a family with grown-up children, as well as a younger one, was less likely to be as cohesive as a family where all the children are close in age. In addition this family was involved in a business requiring evening and weekend work. No doubt this too had some effect on the kinds of activities the family can enjoy together.

Sarah reported that she watched television about two hours a day, except when the weather was bad and then she reported watching about four hours a day. Her mother told the present investigator that watching soap operas after school was forbidden, and Sarah reported that she did not watch television after 9:30 p.m. She also reported that she read while viewing television. Sarah did have many interests including gymnastics, music, sports and boating with her parents.

While Sarah's reading development was marked by a period of difficulty in the early primary grades, at the time of the present study she was performing well. Her teachers predict a successful school career for her. Considering her present status as a reader, these predictions seemed to be well grounded.

## Reading Achievement Profile #6: Adam

Adam was the most able reader included in this study. His verbal and non-verbal IQ scores on the CCAT were 106 and 104 respectively. A year later Adam's scores on the Lorge Thorndike group intelligence test were somewhat higher at 115 (verbal) and 110 (non-verbal). Adam's teachers believed him to be high average in intellectual ability.

CTBS comprehension scores over a five-year period pointed to superior ability in the area of reading comprehension as it was measured by this test. While both fall and spring test scores were below grade level when he was in grade 2, his score at the end of grade 3 showed him to be two years above grade level. In fact, between grade 2 and grade 3 there was an increase of 2.9 years in comprehension ability as measured by the CTBS. Adam's comprehension scores for grades 4, 5, and 6 remained consistently well above grade level. At the end of grade 6 Adam's grade point score in comprehension was 9.4 which is close to 3 years above grade level. Interviews with Adam's elementary school teachers confirmed his superior performance in reading comprehension.

An analysis of Adam's miscues in grades 2, 3, and 4 showed an interesting pattern in relationship to the CTBS scores. Recall that at the end of grade 2 Adam's CTBS comprehension was somewhat below grade level. At this

same grade level the highest proportion of his miscues were graphically similar to the text. This seemed to indicate more attentiveness to the visual aspects of the text than to the meaning aspects. In fact only 53% of his miscues were semantically acceptable. This was quite consistent with Adam's relatively low score in reading comprehension at this level.

In grade 3 the proportion of miscues in each of the four categories (graphically similar, phonetically similar, semantically acceptable and syntactically acceptable) were fairly even, although a slightly higher percentage were graphically similar to the original words. It seemed that Adam was still quite attentive to the visual input. However, comprehension of the same passages read for the miscue analysis, was quite thorough. Also, recall that Adam's CTBS comprehension score at the end of grade 3 placed him two years above grade level. While miscue patterns indicated attentiveness to the visual aspects of the text, this did not seem to detract from understanding at this level.

In grade 4 this apparent discrepancy recurs. In fact the proportion of miscues which were semantically acceptable was only 40% compared to 83% which were graphically similar. Yet Adam's recall of the same passages which produced these miscue patterns was quite complete, indicating a high level of comprehension. His

CTBS score at the end of grade 4 also showed superior comprehension ability. How is this apparent paradox to be explained?

A close examination of the passages read at these levels revealed that decoding had been mastered well enough that the proportion of miscues relative to the total number of words in the text was quite low. Adam seemed able to focus on the overall meaning of the text, and ignored word level errors. He simply pronounced unfamiliar words phonetically and read on. Fortunately, while the mispronounced words might have rendered the immediate context incomprehensible, they were infrequent enough not to affect the meaning of the text as a whole. It may be speculated that the ability to concentrate on the sense of the whole and to focus attention on that rather than on individual words might be the source of Adam's strength in comprehension.

Concentrating on the sense of the whole will break down if decoding has not developed to the point where the reader has access to most of the context. Infrequent miscues can safely be ignored, but frequent miscues will render so much of the context inaccessible, that overall meaning is distorted or cannot be figured out at all. Fortunately in Adam's case, decoding skills were developing rapidly. By grade 6 Adam was decoding so well that virtually no miscues were made on passages with

designated reading levels up to grade 12, and a miscue analysis could not be carried out. Results of the miscue analysis in grades 2, 3, and 4 are presented in Table 23.

Adam's CTBS comprehension scores indicated superior ability to understand printed text. Recalls of passages read orally in grades 2 through 6 confirmed this. Adam's recalls were sequential and very complete. Discourse analysis revealed an ability to summarize information gleaned from text and to make appropriate inferences. The summary of the discourse analysis presented in Table 24 indicated that the proportion of summarized and inferred information relative to verbatim or reworded information was quite high. In this area Adam was superior to the other able readers in the study, and was considerably superior to the less able readers.

Table 23

Adam: Percentages of Miscues in Each of Four Categories, and Percentage of Miscues Corrected

| Grade | Graphically Similar | Phonetically Similar | Semantically Acceptable | Syntactically Acceptable | Corrections |
|---|---|---|---|---|---|
| 2 | 71 | 64 | 53 | 60 | 5 |
| 3 | 80 | 77 | 73 | 78 | 6 |
| 4 | 86 | 83 | 40 | 65 | 2 |
| 6 | too few miscues made to calculate percentages | | | | |

Table 24

Adam: Percentages of Recalled Information Falling into Each of Four Categories

| Grade | Verbatim or Reworded | Summarized or Synthesized | Inferential | Erroneous |
|---|---|---|---|---|
| 2 | 64 | 27 | 9 | 0 |
| 3 | 42 | 19 | 27 | 12 |
| 4 | 60 | 13 | 27 | 0 |
| 6 | 44 | 39 | 17 | 0 |

Results of the Inferencing Abilities Test also indicated superior ability in the area of inference making. Table 25 presents the results of this test in grades 2, 3, and 4. It is believed that extensive background or world knowledge contributes largely to the ability to generate inferences. Adam's teachers from kindergarten to grade 6 commented on the extensiveness and the excellent quality of Adam's general knowledge.

Table 25

Adam: Results of Inferencing Abilities Test: Percentages of Total Possible Inferences Correctly Made

| Grade 2 | Grade 3 | Grade 4 |
|---|---|---|
| 88 | 84 | 91 |

Adam's performance on the two vocabulary measures was also excellent. CTBS vocabulary subtest scores were well above grade level each year that the test was given (grades 3, 4, 5, and 6). These results are presented in Table 26. Adam's performance on the Peabody Picture Vocabulary Test confirmed that his vocabulary was rich and extensive. Adam's score was at the 97th percentile in this test, and his age equivalent was 16.7 at a time when his chronological age was 11.10. In Adam's case, rich background knowledge, rich vocabulary, and the ability to comprehend texts occurred together. These relationships have been hypothesized by many studies, and have been borne out in Adam's case.

Table 26

Adam: Grade Point Scores for CTBS Vocabulary Subtest

| Grade 3 | Grade 4 | Grade 5 | Grade 6 |
|---|---|---|---|
| 5.4 | 6.0 | 7.3 | 8.7 |

Adam's conceptualization of the reading process, as inferred from his responses to interview questions, was clearly meaning oriented. When asked why he thought something might be hard for him to read, he replied that it would be hard if it was not a story, or if the passage contained a lot of new words for which he had no meanings, which might be the case in a social studies or science text. The fact that he mentioned that reading was difficult if it was not a story was significant. Generally children learn to read stories or narrative materials first, and often the expository texts to which they are exposed at about grade 4 cause comprehension difficulties.

Adam suggested "saying the word somehow and read on" as his first fix-up strategy if he did not know a word. His miscue analysis suggested that he used grapho-phonetic information to pronounce the word, and if overall meaning is not seriously impaired by a mispronunciation he did not

bother to return to the word. Adam monitored on the basis of meaning. While oral reading one of the graded passages he commented that "I'm not sure how to say that word, but I know what it means". He told the investigator that he reread materials if he didn't understand something, and that he read "difficult stuff" slowly. He said that he liked "big paperbacks" that he could read fast just for the story. It could be inferred from these comments that Adam adjusted reading rate to suit his purpose for reading and the difficulty of the material. These are well recognized strategies to use in facilitating comprehension. It was also noted that Adam was quite independent in his interaction with text; he did not rely on an outside source for assistance. Adam also believed that reading lots of books was what made a person a good reader.

However, Adam's perception of himself as a reader was fairly modest. In grade 6 he checked "average" to describe his own reading ability. He explained his choice by saying that he found it hard to read aloud. In grade 4, he also indicated that he believed his ability to read to be about "average", while indicating that he believed that he was "a little above average" in his other school work. Interviews with Adam's elementary school teachers indicated that he seemed to be a little insecure and

unsure of his own ability, and needed reassurance that he was doing assigned work correctly.

However, information gleaned from the Quality of School Life questionnaire completed by Adam when he was in grade 4 indicated a positive self-concept in the school setting. Adam agreed with statements such as school is a place where "I can do well enough to become successful", "I like to learn new things", "I know people think a lot of me", and "I feel good about my work". He disagreed with statements such as school is a place where "I get upset, "I feel sad", and "you are bossed around too much". His grade 6 interview revealed that he enjoyed school, and that the best thing about it was that he could see his friends there. He had few complaints about the work at school or about homework. He related his life outside of school to his school work, and thought that reading lots of good books helped him with reading at school, and that building models helped him with measurement in mathematics. Adam expressed confidence in his ability to be able to handle the work at the junior high school. Adam had a positive attitude towards school and his place in it. His self-concept in reading also seemed positive; while he was somewhat nervous about reading aloud, he enjoyed reading to himself, and found it valuable as a tool for learning new things.

The interviews with Adam's teachers described two distinct phases in his school life. Teachers at the early primary levels described Adam as a very emotional and easily frustrated child who did not seem to be achieving his potential academically, particularly in reading. While they commented on the extensiveness of his background knowledge and his ability to contribute orally in class, they were much less positive about his work habits and his attitude towards school. He found the classroom situation difficult to deal with and was prone to frequent emotional outbursts. His grade 1 teacher indicated that he had difficulty with the beginning reading program, and became very frustrated when he could not read what he wanted to. His grade 1 teacher believed that Adam was very anxious at this time and had few friends in the class. His grade 2 teacher's comments were similar. She referred to emotional upsets, and a rebellious and non-cooperative attitude. These teachers believed that his academic potential was good, but he was achieving far below it.

Both these teachers described Adam's class as a particularly difficult one, and this may well have contributed to his difficulty at school. The class had 36 children in grade 1 and again in grade 2, and among these children were a particularly large number who had academic and social difficulties. In classes of this size the

amount of individual attention the teacher could give any of the children was quite limited, and could well affect a child's attitude towards school and academic achievement.

An interview with Adam's mother confirmed that these early primary school years were very difficult for him. She believed that there was a poor match between Adam's interests and abilities, and what the primary curriculum at the time was offering. At the same time she realized the difficult circumstances under which his teachers were working.

Adam's mother told the present investigator that he was very interested in books from an early age, and was read to very frequently from good quality children's literature. She said that he imitated reading behavior early. However, she stated that Adam had little success with initial reading experiences at school, and had little interest in the materials being used. When asked how she helped him cope with difficulties in reading the basal series, she replied that she didn't try to help with that at all, but simply went on doing what she had always done: reading lots of good books to him. Adam's early teachers confirmed his extensive exposure to good books, and said that he frequently brought favourites to school to share with the class.

Adam's mother also told the present investigator that she still read aloud to her son. When asked what kind of

material she chose to read to a boy who was obviously capable of reading very complex materials independently, she said that she tried to choose books which were complex or mature in terms of theme or concepts. She chose books which she believed she and Adam would both enjoy, and which perhaps could be better understood and appreciated if they could discuss them together. Adam's mother was a busy professional person, and indicated that this reading time was a very special sharing time for her and for Adam. It did seem clear that this extensive exposure to excellent books had contributed to Adam's rich store of background knowledge and to his ability to attend to the wholeness of the printed message.

One may speculate that the basal readers used in his initial reading instruction may have been dull fare for a child with Adam's literary experiences. One may also speculate that he very likely had high expectations of being able to read as soon as he went to school, and that the basal materials in use may have had little natural and predictable language which would have made this possible for him. These speculations may help explain his frustration and disappointment with the early stages of reading instruction at school.

Fortunately these difficulties seemed to have been resolved by the end of grade 3. Adam's mother indicated that by late grade 2 he was becoming much happier with

school. His grade 3 teacher reported that the emotional upsets became fewer and fewer as the year went on. She also reported that reading skills were developing well at this stage. It seemed that about this time (late grade 2, early grade 3) Adam had acquired enough basic skills such as command of the phonological system to give him independent access to books. One may speculate that this, coupled with Adam's good literary background and keen desire to read, led to the dramatic increase in reading ability about this time.

From grade 4 on Adam's teachers described him as a cooperative, pleasant and high achieving student. "Creative", "bright", and "well motivated" were frequently used descriptors. His grade 4 teacher mentioned his wonderful ability to converse, and the present investigator found him to be very articulate. His teachers commented frequently on the extensiveness of general knowledge, and on his rich and varied vocabulary. At the time of the present study Adam seemed to be happy at school, he was confident about his ability to handle the work, and he expressed satisfaction with his grades. His mother also reported that she was happy with his progress. Interestingly enough, she reported that she never worried about his academic ability even when his early grade teachers reported difficulties. She assumed that when he was ready to read he would. While he might

have felt anxious and frustrated at school, his mother's attitude prevented this from being carried over into the home.

The most outstanding feature of Adam's home environment was interest in and devotion to books. This was likely to have been the source of Adam's superior background information and vocabulary. The advantages of such a background in reading were observed by the present investigator. For example, Adam was familiar with the immigrant wave in New York in the early years of this century, and had read something of the life of Albert Einstein. Consequently he had little difficulty comprehending stories about these topics in the graded passages used in the informal reading inventories.

Adam had many interests among which reading was a major one. He named several authors that he enjoyed and told the present investigator about Bridge to Terabithia by Katherine Patterson which he was reading at the time. He was interested in models, and was involved in outdoor activities such as skateboarding and ball games. He reported that he liked television and watched 2 or 3 hours per day. His mother expressed concern about large amounts of television viewing, but reported that she placed few restrictions on Adam's viewing. Like other able readers, Adam reported watching television and reading books simultaneously.

At the time of this study Adam's reading ability was superior, and his performance in all aspects of school life was excellent. He was regarded very positively by his teachers who seemed justified in believing that he will have a very successful school career.

# CHAPTER V

# INFORMATION PROCESSING ABILITIES, CONCEPTUALIZATIONS, SELF PERCEPTIONS AND HOME ENVIRONMENT FACTORS IN READING

This chapter considers the information presented in the reading achievement profiles in terms of the research questions generated by the study. The children within each group are discussed so that comparisons can be made between the able and less able readers.

## Information Processing and Reading

"Viewing reading as an information processing task, how do the processing abilities of able readers differ from those of less able readers?" In discussing this research question word level processes such as word recognition and the use of three cueing systems are considered. This is followed by an evaluation of comprehension. Special aspects of comprehension such as inference-making and vocabulary are also included.

### Word Level Processes in Reading

Research suggests that word level processes are important in reading. Readers must deal with the visual aspects of the text; that is, words must be identified.

While not sufficient to ensure good reading, word recognition is a necessary part of all reading. Researchers such as Stanovich (1986) have suggested that early mastery of the grapho-phonetic aspects of print has many positive effects. It allows the learner independent access to print which leads to the development of more and more efficient methods of decoding. This in turn facilitates comprehension. Positive experiences with reading foster the development of self confidence and interest. Conversely, delay in the development of decoding proficiency can have many negative effects.

None of the children included in this study were especially precocious in the development of reading ability. With the exception of Gregory, teachers and parents reported that all the other children experienced some difficulty with reading in the initial stages of instruction. The two most able readers found the early stages of reading instruction frustrating and unsatisfying. It is significant that at the end of grade 2 Gregory's CTBS comprehension score was closest to grade level, and all the others scored somewhat below or considerably below the 2.7 or 2.8 score expected in the spring of the second grade.

Among these students, Karen had the most difficulty with the actual decoding of print. As her profile indicated, she did not focus on the details of the visual

input and made frequent pronunciation errors on grade level materials. While she was able to make some use of the semantic and syntactic cueing systems in word recognition, miscues were frequent enough to seriously interfere with comprehension. Her difficulty with decoding slowed her reading considerably and this also interfered with comprehension. However, her ability to attend to the meaning aspects of print often enabled her to gain a general idea of the meaning of the message, although she frequently missed or misinterpreted details.

Good reading may be characterized by the ability to balance information gleaned from the text with one's world knowledge, including knowledge of language structure, to achieve an understanding of the message encoded in print. Apparently Karen's ability to use world and language knowledge was not strong enough to compensate for her difficulty with the direct processing of print. If reading is a "psycholinguistic guessing game" (Goodman, 1970), then in Karen's case there seemed to be perhaps too much guessing, and too little accurate processing of the visual text. Stanovich (1986) believed that this kind of reading disability occurs whenever slow and inaccurate decoding prevents the reader from using context to aid comprehension. Children who do not achieve an early mastery of the visual aspects of print find themselves in an ever widening spiral of negative Matthew effects. They

are barred from satisfying reading experiences, and often become discouraged and give up.

On the surface it might be assumed that Bradley's ability to decode the visual symbols was good. Generally on grade level materials his decoding was quite accurate. His miscue patterns showed a developing reliance on the grapho-phonetic cueing system in word recognition. In grade 6 93% of his miscues were graphically similar to the original words while only 43% were semantically acceptable. These results, combined with poor recall of the passages read, indicated that while Bradley was decoding accurately, he was unable to comprehend much of what he read. Bradley may be described as a word-caller, and by Stanovich's (1986) definition, a word caller has to give so much cognitive attention to the actual decoding, that little attentional capacity is left over for comprehension. In other words, these readers who seem to be decoding accurately actually have a decoding problem in that decoding has not become automatic, or at least very efficient, for them. The nonsense word substitutions made on the grade 7 level passage may be further evidence that Bradley had to give so much attention to decoding that he could not attend to meaning. The nonsense words were similar to the text in appearance and sound but the fact that they were meaningless was completely overlooked by this reader.

The third less able reader, David, decoded accurately, and there was no evidence from his miscue analysis to indicate overdependence on any cueing system during word recognition. Also the high incidence of corrections of miscues in grades 2, 3, and 4, indicated attentiveness to meaning. The fact that David understood what he read was evident from his response to probe questions, although, as indicated in his profile, he found constructing his recalls very difficult. Decoding, however, did not seem to be the root of David's difficulty with reading.

Among the more able readers, Gregory alone seemed to have made steady and acceptable progress in the early stages of reading when decoding skills were first developing. At the time the current study was conducted his ability to decode was quite sufficient. Sarah and Adam were both late starters and were in grade 3 before they were able to recognize most words efficiently and accurately. In both cases a dramatic improvement in reading ability occurred at this time, together with an overall improvement in attitude towards school. Interest in and enthusiasm for reading increased. By the end of grade 6 both Sarah and Adam decoded directly, efficiently, and perhaps automatically. Any miscues tended to be similar graphically and phonetically to the original text, and a much smaller proportion of semantically and

syntactically acceptable miscues occurred. However, miscues were infrequent enough to be ignored without impairing comprehension. These three able readers seemed to fit into Stanovich's (1986) definition of the able reader who does not need to use semantic and syntactic context clues in word recognition because direct and visual processing of print is so accurate and efficient.

In summary, two of the three less able readers found decoding, the actual word identification aspect of reading, to be difficult and attention demanding. Karen's decoding difficulty was evident and her miscues were numerous. In Bradley's case the problem was less evident. However, considering that he comprehended little of what he read it can be assumed that much of his attentional capacity while reading was taken up by word recognition. In fact Bradley's interviews indicated that he believed reading to be pronouncing words. David did not have a problem with decoding. He read texts accurately and his response to oral probe questions indicated that he could understand what he had read. His difficulty with reading did not seem to be related to decoding or to literal interpretation.

The three able readers had no difficulty with decoding, and all three were able to give accurate pronunciations of unfamiliar words through the use of the grapho-phonetic cueing system. Their reading was

characterized by fast, efficient, direct decoding and flexible use of the three cueing systems in word recognition.

Text Level Processes in Reading

Comprehension is the essential reading skill. For the present study, two means of assessing comprehending ability were used. The CTBS comprehension subtest was administered in grades 2, 3, and 4 by the SESA study. In grade 5 and 6 this same test was administered by the school district. Spring testing only was considered by this study. In addition, informal reading inventories were administered in grades 2, 3 and 4 by the SESA study, and in grade 6 by the present investigator. These inventories involved evaluating the children's recalls after reading and evaluating their answers to the probe questions asked after their recall was given.

Not only did the less able readers consistently score below grade level on the CTBS Comprehension Test, but generally they recalled less information after reading than did the more able readers. Of the less able readers Bradley's ability to comprehend what he had read was weakest. His recalls were short and incomplete and he was frequently unable to answer probe questions about the material he had read even when this material was one or two years below his current grade level. Interestingly,

these poor levels of comprehension occurred even when his oral reading of the text was quite accurate.

Karen, on the other hand, understood the gist of what she had read despite the fact that her oral reading of the text was quite inaccurate in terms of the number of words correctly pronounced. It seemed that Karen, because of her difficulty with the word recognition, was forced to attend to context in the ongoing process of reading. Consequently she was able to glean some meaning from it provided that the context was partially accessible to her. However, at grade level or slightly above, her decoding difficulties made much of the text inaccessible and, at this point, comprehension failed because she had so little on which to base an interpretation. Since Karen frequently paused to use context to help her decode unknown words, her reading was slow and hesitant and this further detracted from her comprehension.

David was able to accurately read texts which were up to two years above his grade level but was able to offer very little in a recall situation. This task seemed to demand organizational and expressive abilities which were beyond him. However, when an external structure, in the form of oral probe questions, was provided he was able to demonstrate a good understanding of what he had read. David's low CTBS scores may have reflected this need for an external organizational structure and may indicate that

he was unable to provide it for himself in independent reading situations. Since the CTBS tests were done independently David may also have had difficulty staying on task.

An important observation may be based on this discussion of the comprehension abilities of the less able readers in the present study. All three had difficulty with comprehension of printed material, and this difficulty was reflected by the CTBS comprehension tests and by informal assessment via the reader's recall and responses to probe questions. However, the factors underlying these difficulties were unique for each of the three individuals. It seems evident that efforts to assist such readers cannot be based on any general notion of comprehension disability but must examine the specific underlying causes which vary from child to child.

Among the three more able readers, general comprehension of instructional level materials was good. They could all give complete and sequential recalls of the materials they had read, and could answer probe questions about any detail omitted in their recalls. Most differences within this group were based on higher order comprehension abilities such as inference-making which is discussed in the next section.

Inference-Making

Inference-making is an important element of comprehension and characterizes skilled reading. It must be recognized, however, that for optimal levels of comprehension to occur, a balance between what the text actually says and what readers bring to it from their own repertoire of conceptual knowledge is necessary. For example, if discourse analysis reveals high proportions of inferred information and low proportions of verbatim information, it may well indicate that the reader is paying little attention to what the author has actually written, and the interpretation may not be what the writer intended. A second point should also be made with regard to inference making. The ability to make quality inferences is likely to increase with the age of the child. Research indicates that older children, because they have had more and more varied experiences, are likely to possess a more complex and elaborated repertoire of conceptual knowledge than younger children. This increases the potential for making inferences.

Generally speaking, the less able readers made fewer appropriate inferences than the more able readers. Among the weaker readers Bradley demonstrated the least amount of ability in this area. Results of discourse analysis showed that Bradley made inferences at only one grade level from grades 2 to 6. His scores did not show the

development one would expect between grade 2 and grade 6, and his teachers reported that he seems somewhat deficient in background knowledge which may partially account for his problems in this area. Difficulty with inference making may also be related to the inability to activate whatever appropriate background knowledge he did have and to relate it to the material being read. It has been suggested that poor readers may treat reading tasks as isolated events, unrelated to anything previously known, and this may account for the failure to relate previous knowledge to incoming information. Considering Bradley's narrow view of reading as a largely decoding task, this may well apply in his case. Recall as well that decoding accurately seemed to occupy a large amount of Bradley's attention, leaving little attentional capacity for literal comprehension, much less higher order processes such as inference making.

Karen made inferences at all four grade levels for which discourse analyses were carried out, although the percentages of inferred information recalled were generally lower than those of the stronger readers. In addition the results of the Inferencing Abilities Test showed some development from grade 2 to grade 4. Recall that Karen's main difficulty with reading was the actual decoding of the text. Consequently any inference making may have been based on a limited amount of text

information. In addition, while teachers believed her background information to be average, it had no doubt been limited somewhat because she has done relatively little independent and recreational reading. Karen's ability to use inferences to extend her interpretation of texts was constrained by these factors.

David's results on assessments of inferencing ability contained contradictions and inconsistencies which make them difficult to interpret. At the grade 2 level 60% of his recall was inferential information. At the same time, he recalled only 20% of what the text had actually said. This imbalance probably points to an overreliance on what he previously knew, and a tendency to disregard what the text actually said. In contrast to this high percentage in grade 2, he made no inferences at all on the test passages in grades 3, 4, and 6. Results of the Inferencing Abilities test also showed inconsistencies. For example, at the grade 4 level the percentage of inferences correctly made was the highest of all the children in the study. However, his percentage at the grade 3 level was second lowest.

While these assessments showed that David's performance in the area of inference making was rather inconsistent, the results were not at variance with what other assessments revealed about his reading ability. David's teachers indicated that his background knowledge

was strong in certain topics. No doubt if the passage read reflected these strong interest areas, David would have had considerable information on which to base inferences. Also recall that in David's case, discourse analysis was based on a limited amount of recalled information which could have led to distorted percentage figures.

As indicated earlier, the able readers made more inferences when reading than the less able readers. At the grade 6 level the mean percentage of inferences made by the stronger readers was 11.6 while for the weaker readers it was only 2.3. However, as with the less able readers, interesting within-group differences occurred.

The most able reader, Adam, consistently had the highest percentages of inferences at most grade levels. The only exception was in grade 2, but at this level Adam was still struggling with decoding. Many sources of information indicated the superiority of Adam's background knowledge. It may be surmised that his superiority was largely attributable to his extensive and early exposure to quality books and to his subsequent independent reading of many varied materials.

While Sarah and Gregory were described as having adequate background information, they could not approach Adam in this regard. Recall that Gregory's experiences were limited in that travel and exposure to many social

and cultural events were fairly circumscribed by family social and economic circumstances. While Gregory did read, the family could not provide the number of quality books that were available in Adam's home. Sarah's home provided advantages such as travel, and there seemed to be many books available to her. However, her position as the youngest child in a family of busy adults and older children, and the fact that she did little reading at all before grade 4 have probably limited her background knowledge.

In summary, the less able readers were less effective in making inferences to extend and enrich the interpretation of texts than the more able readers. However, many interesting individual differences existed within the groups, and many factors unique to each individual appeared to influence the complex area of inference making. General mental ability, background knowledge, and factors in the home and social environments which encouraged relating book world knowledge to information obtained by reading no doubt influenced inferencing ability. Athey (1983) and Greaney (1986) both mentioned factors which seemed to contribute to the ability to relate world knowledge to information obtained from reading. For example, the quality of parent-child communications is likely to have been influential in the development of background information and inferencing

ability. Considering factors such as this was, unfortunately, beyond the scope of this study.

Vocabulary

Another important factor in reading is vocabulary development. Traditionally vocabulary knowledge and reading have been shown to correlate strongly and positively. While these relationships are intuitively logical, recent work in the area of inference making and vocabulary acquisition (Nagy et al., 1986, Ruddell, 1976, Johnson & Pearson, 1986) have explored why these relationships occur. The preceding case studies have attempted to explore some of the interrelationships between vocabulary, world knowledge, inference making, background experiences contributing to vocabulary development, and reading achievement.

Two quantitative measures were used to assess vocabulary proficiency: the CTBS vocabulary test administered in grades 3 through 6, and the Peabody Picture Vocabulary Test administered by the present researcher when the students were in grade 6. As one would expect, the more able readers as a group scored higher than the less able readers on both these measures. At the end of grade 6 the mean grade equivalent CTBS vocabulary score for the three less able readers was 5.9, while for the more able readers it was 7.2. On the PPVT

the mean percentile rank for the less able students was 29 while for the more able readers it was 72.6.

Among the students who comprised this study's case base, Bradley was by far the weakest in vocabulary achievement, with his PPVT score falling at the 13th percentile. Bradley had limited literary experiences as a young child at home, experienced little success in the early stages of reading instruction, and consequently had read relatively little. If, as Nagy et al. (1986) argued, the major source of vocabulary development in the elementary grades was independent reading, then it became evident why Bradley's vocabulary was so deficient. Karen, too, had not developed reading skills which allowed her independent access to a large variety of interesting reading materials and, as a result, her vocabulary development was also deficient.

In sharp contrast to these children, Adam's CTBS vocabulary scores were consistently well above grade level and his PPVT score was at the 97th percentile. Adam experienced early and extensive exposure to books through a parent who realized the importance of literary experiences to a child's overall cognitive development. Despite some early frustrations with reading instruction at school, Adam was a reader who had read a great variety of materials independently. In his case there was ample evidence to support the reciprocal relationship between

vocabulary and reading achievement suggested by Stanovich (1986).

Adam's advantage over children like Bradley and Karen was even more dramatic if one accepts arguments by such researchers as Ruddell (1976) and Johnson and Pearson (1984) that vocabulary simply provides labels for concepts and that it is these concepts which allow essential reading behaviors such as inferencing making to occur.

Sarah and Gregory, as able readers, generally have above average scores on measures of vocabulary proficiency. However, in both cases, their immersion in "literary events" at home was much more limited than Adam's. There was also some evidence that their homes lacked the stimulating verbal interaction which characterized Adam's home environment. In addition Sarah was a slow starter in reading and did little independent reading before grade 4. While these two children did engage in independent reading, and no doubt their reading had contributed to adequate vocabulary development, it may be speculated that perhaps their full potential had not been realized.

A discussion of David's vocabulary scores may help reiterate a key point: to achieve a comprehensive understanding of an individual's achievement in reading, one must look beyond test scores, regardless of how reliable they seem to be. David, while characterized as a

less able reader, scored at or above grade level in three out of the four years for which the CTBS vocabulary scores were available. However, at the end of grade 6, while his CTBS score was 7.5, six months above grade level, his score on the PPVT fell to the 37th percentile.

A possible explanation for these inconsistent vocabulary scores may lie in the nature of the vocabulary measures, and the kind of vocabulary knowledge reflected by each. Beck et al. (1982) argued that a word may be known at many levels. They hypothesized that while a student may know a word well enough to pass a multiple choice item such as those which comprise the CTBS vocabulary test, this does not mean that the student "knows" the word well enough to facilitate comprehension. This requires deeper and more extensive word knowledge. Perhaps the PPVT which required the student to recognize the pictured situation which corresponded to a given word may more nearly reflect the kind of word knowledge which could contribute to the comprehension of texts.

In David's profile it was speculated that the source of much of his conceptual knowledge was television viewing and magazine reading. Busch (1978) suggested that information obtained from television viewing tended to be surface information, and did not contribute to a real indepth knowledge of a topic. Logically, the vocabulary which reflects these concepts might consist of narrow and

superficial knowledge of word meanings. It may also be speculated that magazines which offer short articles on a variety of topics and eye-catching picture captions may also result in superficial concepts and vocabulary. These ideas were substantiated further by Beck et al. (1982) who suggested that deep knowledge of word meanings is the result of many encounters with the word in a variety of contexts. Each time a word is encountered in a different print context, the depth and breadth of knowledge about it increases. Considering these ideas and the sources of much of David's information, it was not surprising that his knowledge of word meanings was deficient.

In summary, differences between able and less able readers in vocabulary were evident from an examination of the results of the tests which assessed this aspect of reading. Differences also existed in the sources of vocabulary knowledge. The able readers gained considerable vocabulary knowledge through encounters with words in a variety of print contexts. The less able readers were denied this source because their poorly developed reading skills limited the materials which they could read independently. They relied on oral contexts such as general conversation around them and from television, which resulted in less extensive and also more superficial vocabulary knowledge.

The reciprocal relationship between vocabulary and reading suggested by Stanovich (1986) seemed to be supported. For example, Adam was able to bring a well developed oral vocabulary to his reading. This contributed to his understanding of what he read, and this reading in turn contributed to further vocabulary development.

Stanovich also suggested that vocabulary proficiency would continue to contribute to reading proficiency at all levels of development. Adam's extensive vocabulary should continue to enrich his reading, which in turn should continue to contribute to further vocabulary development. On the other hand, readers such as Bradley and Karen are prevented by other poorly developed reading skills from extensive independent encounters with print. They are likely to continue to be at a disadvantage in further vocabulary development unless some intervention halts the downward spiral of negative Matthew effects.

## Conceptualization of Reading

Research question two asked "How does the way able readers conceptualize the reading task differ from the conceptualization of less able readers?". In the literature this question is frequently considered in conjunction with a discussion of the self-monitoring

activities of readers. This link is based on the premise that readers' concepts of reading will influence their approach to the reading task. In simple terms, if readers believe the reading task to be pronouncing words then they are unlikely to be concerned when what they are reading does not make sense and they will not self-monitor for meaning. Readers who are aware that reading is making meaning are more likely to be concerned when gaps in understanding occur, and are more likely to adopt strategies to remedy the situation.

Five of the six students reported meaning-oriented concepts of reading. They also reported the use of meaning-oriented fix-up strategies when a reading difficulty occurred. The strategies most frequently reported were reading ahead when they met an unfamiliar word, rereading material which didn't seem to make sense, and reading complex materials more slowly. These children had either been taught these strategies or had figured them out for themselves. In any case they were able to describe them to the investigator.

The evidence suggested that these students who reported "fix-up" strategies based on a meaning-oriented concept of reading also used them in their reading when meaning was unclear. The three most able readers had efficient and largely effortless decoding skills which allowed them to focus on meaning. They had less need to

use fix-up strategies than their less able counterparts. These able readers occasionally paused when the sense of a phrase or sentence was questionable, but generally overlooked mispronunciations provided they didn't interfere with overall meaning. This, of course, was further evidence of their meaning oriented concept of reading.

Among the less able readers Karen reported meaning oriented fix-up strategies and used them frequently in her reading. She was aware of the meaning aspect of the printed message, and used the semantic and syntactic contexts to aid her slow and laborious decoding. Karen frequently reread phrases; returned to unfamiliar words to try them again, and read slowly. Unfortunately, use of these strategies was insufficient to compensate for her deficient decoding skills. In many cases she could not identify enough words to give an accurate interpretation of the text. However, this awareness of meaning is one of Karen's strengths and could be a good starting point for building more effective reading strategies.

David also reported use of appropriate fix-up strategies, based on the self monitoring of text for meaning, and applied them appropriately during reading. David's difficulty seemed to occur after the reading, in organizing and representing the information he had read.

Of the six students who comprised this study's case base, only Bradley did not report a meaning-oriented concept of reading. Based on his self-report, it seemed that he believed that reading was pronouncing words. His approach to reading was word oriented, as evidenced by his frequent nonsense word substitutions. Although the investigator was certain that Bradley's reading instruction at school had been meaning oriented, he did not seem to have internalized this concept. His mother's comment that she had to show him where to stop when reading is further evidence that Bradley was unaware of the meaning units of printed text. Perhaps early difficulty with decoding led him to concentrate on words at the expense of meaning. It was not surprising then that Bradley reported no meaning oriented fix-up strategies, and used none in his reading.

In summary, five of the six children in the present study reported meaning-oriented concepts of reading, reported uses of meaning-oriented fix-up strategies, and actually used these strategies when appropriate. This was evidence that possessing and expressing a concept of reading based on meaning influenced the strategies used in reading, and in particular seemed to lead to use of strategies based on meaning. With the exception of Bradley, differences between the able and less able

readers were largely in the need to use these strategies, and the effectiveness of doing so.

## Self-Perceptions of Reading Ability and Self-Concept

The third research question asked "How does the perception of one's ability to read and reading self-concept differ in able and less able readers?". Self-concept is a construct which is frequently associated with self-perceptions of ability. The positive or negative feelings which may result from these perceptions influence motivation, attributions for outcomes in reading, and persistence in the face of difficulty. How realistic these perceptions are may also affect reading interest and performance.

Two of the three weaker readers reported that they believed that they were below average in reading ability when that question was asked by the present investigator. The third and weakest reader, Bradley, reported his ability in reading in grade 4 and again in grade 6 to be above average. This was a most unrealistic perception and was, in fact, inconsistent with his self-reporting of difficulties in reading his school texts. His teachers reported that he was "tuned out" academically and that he tried to get attention in class by "clowning around". Perhaps these factors signified a lack of satisfaction

with the academic side of school. As indicated in his profile, Bradley seemed to be a confident boy with a positive self-concept. It was clear, however, that this is based on factors other than academic success, which did not seem to be important to him. He expressed a wish to be like his older brother who was allowed out at night and who had a motor bike. The interview with Bradley's mother, revealed that this older brother was failing in high school.

Karen's perception that her reading ability was below average was quite realistic. She also reported that she believed that she was towards the bottom of her class in terms of report card grades. Karen's teachers reported that she lacked confidence, was anxious and nervous in situations which demanded reading, and that she was quite dependent on her teachers for help and support. Despite all this Karen expressed positive feelings toward school and her teachers. No doubt this was a response to the concerned attitude towards her which was generally expressed by her teachers. They perceived her to be a student of limited ability, who was perhaps achieving as well as she could.

David also reported his reading ability to be below average. He expressed many negative feelings towards school, and seemed to resent demands made on him academically. His teachers reported him to be lacking in

motivation. Perhaps realistically, he attributed his lack of success to lack of effort.

In fact the three less able readers showed some evidence of the "learned helplessness" syndrome described by Johnson (1981) and Bristow (1985). Both Bradley and David expressed negative feelings towards school and study. David in particular avoided school work whenever possible. Bradley and Karen were both dependent on teacher help and direction. Karen was frequently described as nervous and anxious, especially when required to read aloud. There was evidence that both Karen and David have a low self-concept in the school setting, and that Bradley's more positive self-concept did not seem to depend on academic success. All three children showed evidence of passivity when involved in reading tasks. They did not seem to engage in active comprehension fostering strategies such as purpose setting and activating relevant background information. These readers viewed reading as a difficult and onerous task and took little pleasure or satisfaction from it.

In contrast, a cluster of positive affective factors were associated with the more able readers. All three reported that they believed their reading ability to be above average, a perception which was both positive and realistic. They also reported that they believed their report card grades to be somewhat better than those of

their classmates, and reported their own and their parents' satisfaction with their school progress. They reported many positive feelings towards reading, and towards school in general. They seemed to accept the demands of school and homework cheerfully. Generally they attributed their success in reading to their own ability and effort and expressed confidence that they would have few difficulties with academic work in the future. All these factors are indicative of positive self-concepts in the school setting.

It was evident that important differences existed between the less able readers and the more able readers in terms of affective factors such as perceptions of ability, self-concept, and attitudes towards reading and school in general. No doubt some of these differences could be attributed to the amount of success experienced in the school setting. The cases of Adam and Sarah gave ample evidence that able children may be late starters, particularly in the decoding aspect of reading, and that this experience can lead to frustration and negative feelings. Fortunately for these two children the resolution of the academic difficulty was accompanied by the emergence of more positive attitudes towards themselves as readers, and their subsequent success and enjoyment with reading fed these positive feelings. The present investigator suspects that what was perceived to

be a problem with reading for Sarah and Adam was simply a developmental delay, and that more demands were made of these children than they were ready to handle. It is significant that the "problems" resolved themselves without any particular intervention. It seems clear that, particularly in the early stages of reading instruction, a support system must be in place so that reading ability can emerge in a no-risk environment, and failure and the negative feelings which may result can be avoided. It is also clear that some children will require this support system much longer than others.

## Home Environment Factors

Finally, aspects of the home environment and their possible effects on reading formed the basis for comparing the able and the less able readers. The fourth research question addressed these issues when it asked "How do the home and social environments of able readers differ from those of less able readers?".

First, socio-economic factors were considered. The homes of all six children in this study seemed to have adequate financial resources to provide for their children. All the fathers were employed, and four of the six mothers interviewed were employed outside the home. A question on the Home Life questionnaire completed by

parents when the children were in grade 4 asked parents to rate how privileged they believed their children to be in comparison to children of other families. The rating scale ranged from "among the most privileged of children" to "not privileged at all". Five of the six parents completing this questionnaire rated their children as average on this scale, and one other rated her child as privileged. The number of children in these families ranged from one to three. No child in this study came from an impoverished or crowded home environment.

The parents were generally comparable in terms of their level of education. All of the parents reported that they had at least a high school diploma plus some post high school education. Usually this took the form of trade school courses. One parent only was a university graduate. All parents were reported by teachers to be supportive of the school system and interested in their children's progress. Four of the six families reported that they expected their children to attend a college or university, and five of the six reported that some financial plans to provide post high school education have been considered. It may be inferred that these parents were interested in the education of their children.

These parents, as a group, also showed considerable interest in children and youth, not only in their own families, but in the community as a whole. Among them was

a career educator, a school board member, a Sunday school teacher, a scout master and a volunteer worker at the local school. They generally encouraged their children to participate in youth groups, sports, or extra lessons, and provided the financial means to support these interests. The Home Life questionnaire reported that a variety of activities and interests were pursued by the children in these homes.

These students, then, were perhaps representative of many children from average-income homes in the larger towns of this province. There were no extremes of poverty or wealth represented. None of the parents were poorly educated in terms of the amount of formal education received, but only one could perhaps be described as well educated. Interest in education was evident in all these homes. It would be difficult to attribute differences between the able and less able readers in this study to socio-economic factors or to the level of parental interest in education. However, the most able reader came from the home where the parents were most highly educated. Some of the most important home environment factors which might relate to reading are not necessarily associated with socio-economic status. One important group of factors have been termed "literacy environment". This refers to factors such as interest in books and reading in the home, use of books in parental interaction with

children, particularly pre-schoolers, availability of books in the home, and the availability of time and space for reading.

All the mothers who were interviewed for the present study indicated that they had read to their young children. However, there were differences reported in the amount of reading done with children who were described as very interested in books, and with those who were described as lacking in interest. Both Bradley and Sarah were described by their mothers as showing little interest in books or reading at an early age. Their mothers reported that these children were very active, lacked the attention span necessary to listen to a story, and seldom initiated story reading sessions. It was apparent that these children were read to less often than some of the others. It is difficult to deny a small child who asks for a story, and it is perhaps also difficult to interest a small child in a story if he/she wants to do something else. Their kindergarten and grade 1 teachers described these two children as disinterested in stories, and generally unsettled in the school setting.

The parents of these two children reported making no special efforts to interest them in books. They allowed them to do what interested them at this stage. Sarah's mother did say that she was bothered by her lack of

interest, because her older children seemed to be more attentive and settled.

This study was unable to assess any of the important child-parent interactions in these cases. Children are likely to be more interested in books if they are encouraged to participate in the reading, and if parental conversation helps the children make connections between the books and their own real worlds. No doubt the attractiveness of the available books is also important, but again, this study had no means of assessing such a factor. Perhaps if the parents realized the importance of books in the development of intellectual abilities and as preparation for reading, more systematic efforts to capture the interest of the children might have been made. Sarah eventually did develop an interest in reading and reads for both pleasure and information. Bradley has never developed either an interest in books, or the ability to read well.

The parents of the other four children reported that the children were interested in books as pre-schoolers. These parents reported that they read to their children frequently, usually several times a week. Again this study had no means of assessing the important parent-child interactions which occurred during book reading sessions. However, Adam's mother stood out from the others in the expression of her strong belief in the power of books to

foster intellectual growth, to give pleasure, and to provide a background for literacy. Later, when Adam was having problems in the early stages of reading instruction her belief persisted. She simply kept on reading to him. It may be speculated that Adam's early disenchantment with reading at school may have been because the instructional materials (basal readers) were far less interesting than the literature which he had heard at home.

Adam's literary environment was also outstanding because of the quality of the books available to him. Because of her background as an educator, and particularly as a librarian, Adam's mother had the knowledge and access to the books which enabled her to provide the best available children's literature for her child. There are vast differences in the quality of children's books, and generally the best has not been available at local book stores. The families in this study generally did not make much use of the public library. In fact only David's mother said that she took the children there regularly. These families relied on what was available locally, or they participated in mail-order book clubs which provided books such as the Dr. Seuss series or Walt Disney versions of fairy tales. While these kind of books may have a place, and the fact that parents bothered to purchase them at all was indicative of their interest in providing reading materials for their children, they do not

represent the best of children's literature. Without a doubt, Adam's exposure to literature was far more extensive than that of any of the other children, and the quality of that literature was superior. The present investigator would speculate on a causal relationship between Adam's superior background knowledge and his early and continuous involvement with good books.

On the basis of the evidence available to this study, the literacy environments of the able readers as a group were not clearly distinguishable from those of the less able readers. However, some interesting observations may be made. Certainly, Adam, the most able reader in this study, had a strong background of literary experiences. Bradley, the least able reader, had little. Adam read extensively for pleasure and for information; Bradley read little. Sarah, like Bradley, showed little initial interest in reading. However she came from a family where her mother and sister both engaged in leisure reading, and eventually Sarah, too, developed this interest. Books also seemed to be important in David's family. The mother read and she took the children to the library. However, David's own reading was limited; he tends to rely on television for pleasure and information. Karen liked books as a young child, loved to hear stories, and expressed an interest in reading in her grade 6 interview. Unfortunately, Karen's independent access to interesting

books was limited by her decoding difficulties. Karen, however, had a strong meaning oriented approach to reading and this may have been a function of her early exposure to whole books and stories. Gregory's initial interest in reading continued, and he named reading among his leisure time pursuits. This study was unable to fully trace the relationships between the home literacy environment and the children's present reading ability and interest. However, based on the available information, the present investigator believes that this factor was important and that its influence was far-reaching.

Another aspect of the home environment considered by this study was television viewing. Recent literature such as Neuman's (1986) article cautioned that the relationships between television viewing and reading are not likely to be simple, and are likely to be tied to other complex sets of influences. While all six children in this study enjoyed television and included it among their favourite leisure time activities, the less able readers reported that they spent more time watching television than did the able readers. Apart from this general comparison of the two groups, other observations may be made.

David reported what might be considered an excessive amount of television viewing (6-8 hours per day). This excessive amount of viewing was associated with poor

performance in reading. It has already been speculated that background information obtained from television might be shallow and poorly integrated. In David's case excessive amounts of television was also associated with lack of motivation for school and reading, with difficulty in becoming actively involved in the reading task and with difficulty in organizing information and relating one idea to another. David and Bradley both reported that they had their own television set in their bedrooms. Both boys were heavy viewers, and both were less able readers.

Two of the three more able readers reported watching television and reading simultaneously. Busch (1978) reported that this was characteristic of able readers who engage in this activity more frequently than less able readers.

Finally, like the parents interviewed by Neuman (1986), the parents of these children expressed concern about the amount of television viewing done by their children. While Neuman observed that this concern made no difference in practice because these parents made no effort to control or monitor television viewing, four of the six families involved in this study reported some efforts to control television viewing. However, apart from Gregory's family where the mother emphasized that she was very strict about enforcing her rules, the present investigator had the impression that the children in this

study had a good amount of freedom with regard to television.

In conclusion, the present study recognized the importance of home environment factors on both general cognitive development and on reading ability and interest in particular. By necessity the observations made by the present investigator were based on information about fairly general aspects of the home environment. However, perhaps the most influential aspects of the home environment might be those most difficult to assess such as the quality of parent-child verbal interaction suggested by Greaney (1986). A more intensive study of these subtle home environment factors might contribute considerably to our understanding of the differences between able and less able readers, and to the acquisition of literacy generally.

# CHAPTER VI

# CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

The final chapter has three purposes. First, the study is reviewed and its limitations are stated. Second, the study's findings are summarized and conclusions are drawn. Finally, implications for education and for further research are suggested.

## The Study in Review

This study recognized that reading is a complex cognitive process involving interaction between a reader and a text, and that achievement in reading is influenced by many cognitive and noncognitive factors. The research endeavoured to understand and describe the acquisition of literacy in six local elementary school children by examining their reading achievement patterns over a five year period and by exploring the cognitive, social and affective factors which were related to these patterns of achievement.

The children involved in the study represented an average range of ability as assessed by two measures of general intelligence. At the end of grade 2 all six children scored at or somewhat below grade level on the CTBS comprehension subtest. However, by the end of grade

4 CTBS scores began to indicate the emergence of a more able and a less able group, and by the end of grade 6 the difference in the two groups in terms of CTBS scores had widened considerably. Thus, a second purpose of the study was to compare the reading achievement patterns of these two groups. Because the investigator conducted an indepth study of a small number of individuals, a case study approach was used.

The case studies were based on data collected by the SESA project over a three year period, on data made available by the children's schools, and on data collected by the present investigator. Multiple data sources and the longitudinal dimension of the study allowed a comprehensive description of each case's reading achievement, and permitted an exploration of the many factors which influenced it.

## Limitations of the Study

Limitations of this study may be classified into two categories: (a) limitations of design; and (b) limitations of the data collection. In category one the first limitation had to do with the sample size. A sample of six children in two schools within one school district cannot allow for generalizability in the usual sense of the word. Also, the selection of children for the sample

was guided partially by scores on a measure of general intelligence. These scores generally fell into the 90-110 range, excluding any very low or very high scoring children. This resulted in a fairly narrow range of abilities on which to base comparisons of achievement patterns.

Second, the study made no provisions for the investigation of instructional methods, although this factor may have had a powerful influence on achievement. In addition, the children who comprised the study's case base had different teachers throughout their elementary school years; no doubt this factor has influenced achievement in unknown ways.

The other category of limitations concerns the data collection. First, although this study covered a five year period from grade 2 to grade 6, there was little information available for the grade 5 level. The SESA study gathered data in grades 2, 3 and 4. When the current study was undertaken, the children were in grade 6. The present investigator carried out additional assessments similar to those carried out by the SESA researchers to update the data base for each child in the case study analysis. The information available at the grade 5 level consisted only of standardized test scores obtained from school records, and information gleaned from interviews with the children's grade 5 teachers.

Any limitations which applied to the SESA study, also applied to the present study. In particular, the use of graded passages for the informal reading inventory has been mentioned by Hasinoff (1986). Formulas for deciding grade levels of reading passages have no means of taking into consideration the influence of the child's background knowledge. A child was frequently able to read a more "difficult" passage for which he had appropriate schema more readily than he could read an "easier" passage for which he had no background knowledge. No doubt this uncontrollable factor was operating in the administration of the informal reading inventories.

One other point should be made in connection with the administration of the informal reading inventories. Passages were read orally, and the miscue and discourse analysis were based on oral reading. Results may well have been different if they had been based on silent reading.

Some factors considered critical with regard to the literacy environment of the home could not be assessed by this study. For example, Shanahan and Hogan (1983) identified the quality of parent-child interaction during story reading sessions as being very important in preparing children for literacy. The assessment of such a factor would require systematic observation over a period of time, and was beyond the scope of this study.

## Summary of Findings and Conclusions

This section summarizes the study's findings and states conclusions based on these findings. The section is organized under four headings reflecting the focus of each of the four research questions posed by the research.

### Cognitive Factors in Reading Achievement

As expected, there were important differences between the two groups in the cognitive abilities involved in reading. The able readers generally were more proficient decoders than the less able readers. They processed print on the basis of visual input, and perhaps more significantly, this seemed to occupy little of their attentional capacity. Indeed, for these able readers, decoding seemed to be quite effortless. These readers were thus able to focus on meaning. Two of the less able readers found decoding so demanding that little attention could be paid to overall meaning. Consequently comprehension was seriously impaired. These observations seem to support a theory of automaticity of word recognition among skilled readers similar to that proposed by LaBerge and Samuels (1974).

It must also be noted that the better readers could easily switch from their direct and visual processing of print to conscious use of the semantic and syntactic contexts to help them work out unfamiliar words which

interfered with meaning. However, they generally ignored mispronunciations which did not seriously impair comprehension.

Flexible use of all the cueing systems in word recognition was characteristic of the skilled readers, rather than exclusive use of either top-down or bottom-up strategies. The less skilled readers seemed to lack this flexibility. These findings tend to support the interactive theory of word recognition proposed by Stanovich (1980).

While the stronger readers made direct use of context to aid decoding only when decoding became problematic and interfered with meaning, it was obvious that they were well able to attend to context in the ongoing process of comprehension. They could perceive and express the relationships between textual ideas and were able to smoothly integrate the pieces of information obtained through reading into a coherent whole message. One of the weaker readers seemed to experience failure at just this point, while the other two seemed to be unable to decode well enough to even get that far. The able readers also made more inferences, could use information from their background knowledge to elaborate and extend the incoming ideas gleaned from the text, and had more extensive vocabularies than the less able readers.

On the basis of these findings it may be concluded that efficient means of decoding is important if comprehension is to proceed. Many researchers including Biemiller (1977-78), Juel (1980), and Perfetti et al. (1979) have emphasized the importance of fast and effective decoding in reading. This study supports this idea and suggests that if this development does not take place there may be long term negative effects on many aspects of comprehension such as seeing relationships among textual ideas, summarizing and synthesizing information, inferencing and vocabulary development.

Conceptualization of Reading Ability and Achievement

Five of the six children in the study reported a meaning oriented conceptualization of reading, and said they used "fix-up" strategies based on this conceptualization. These readers all demonstrated use of these strategies while reading. One child only clearly expressed a decoding conceptualization of reading, reported no meaning oriented strategies to use if the reading became problematic, and used none.

The main difference between the able and the less able readers in this regard was in the actual need to use the fix-up strategies which they reported, and in the comprehension gain accrued from doing so. The able readers seldom needed to reread, slow their reading pace,

or consciously use context to decode unfamiliar words while reading instructional level materials. When they did the result was usually clarification of meaning. The able readers possessed a meaning-oriented concept of reading, self-monitored on the basis of meaning, and could make effective use of fix-up strategies when necessary.

On the other hand, the less able readers who also held a meaning-oriented view of reading did not realize the benefits of being aware that reading was for meaning. First, they needed to apply fix-up strategies relatively frequently, and this prevented a smooth reading flow which in turn detracted from comprehension. Second, the use of such strategies did not seem to work well for the weaker readers, perhaps because there were too many negative factors to counteract. Factors such as poor decoding ability, difficulty in seeing relationships, and deficient vocabulary development made the application of fix-up strategies relatively ineffective for these children.

In conclusion, reporting a meaning-oriented conceptualization of reading and demonstrating the use of fix-up strategies did not distinguish the able readers from the less able in this study. It is likely that meaning had been stressed in reading instruction for all these children. However, the difference lay in the frequency with which fix-up strategies needed to be applied and in the effectiveness of their use. These

differences tended to be directly related to proficiency in other reading skills. Unfortunately, the more a reader needed fix-up strategies, the less effective their use seemed to be.

Self-Perceptions of Reading Ability and Affective Factors in Reading Achievement

The able and less able readers differed in the way they perceived their own ability to read. They also differed in self-concept and in affective factors such as attitude towards school and motivation for learning. The less able readers expressed either negative or unrealistic perceptions of their reading ability and had little confidence in being able to cope with their work at school. Teacher descriptors included "nervous", "anxious", "lacks persistence", "disinterested", and "unmotivated". Their parents expressed worry and concern about their academic future. The degree to which the children were aware of these teacher perceptions and parental fears is unknown. However it seemed possible that they may have constituted a self-fulfilling prophecy with the children responding and behaving in accordance with their teachers' and parents' expectations. In any case, these children did not enjoy school and found little satisfaction in academic tasks.

The able readers held positive and realistic perceptions of their reading ability, were confident,

reported that they enjoyed school, and were positively regarded by their teachers. Their parents expressed satisfaction with their children's progress, and teachers predicted successful school careers for them.

These findings supported the conclusion that many negative affective factors accompanied poor achievement in reading, and positive affective factors accompanied good achievement. No doubt these affective factors will influence future achievement, and future achievement or lack of it will affect personality traits such as self-concept.

Home Environment and Reading Achievement

The homes of the children involved in this study were comparable in socioeconomic terms, and in terms of community involvement. The parents appeared interested in education and generally expressed a positive attitude towards the schools. All the children were supported in their involvement in youth groups and in the pursuit of various interests such as sports and hobbies. These boys and girls all mentioned purchasing books from school sponsored book clubs, indicating that their parents believed reading to be important and were willing to supply their children with money to buy books.

While the homes of both able and less able readers seemed similar on many easily observable characteristics

there did seem to be differences between the two groups in what might be termed the literacy environment. The investigator had the impression that at least two of the able readers came from homes which placed considerable emphasis on reading as an important source of information and as a recreational activity. This was especially true of the most able reader.

Differences were also noted in the amount of television viewing, with the able readers reporting less television viewing than the less able. The more able readers also reported that they read and watched television simultaneously and they also reported more family rules governing television viewing than the less able.

These findings lead to the conclusion that aspects of the home environment such as the emphasis on and involvement in literacy pursuits may be more closely related to achievement in reading than the more traditional and more easily observable socioeconomic aspects of the home. This conclusion supports the hypothesis offered by Greaney (1986) that socioeconomic status may underestimate the effect of the home on the child's mental and scholastic development. He suggested that what parents do is more important than what they are.

## Implications for Education

In discussing the implications of the current study for education two areas of interest will be explored. Stanovich's idea of "Matthew effects" seemed important and relevant, and will be considered first. Secondly, the role of reading in learning to read and in expanding and refining reading abilities will be discussed.

### Matthew Effects and Early Reading Instruction

The longitudinal nature of this study allowed the observation of possible "Matthew effects" in the reading achievement patterns of the children who made up the study's sample. Stanovich (1986) defined Matthew effects in reading as those positive or negative results which are the consequence of earlier reading experiences. They can be both cognitive and affective, and have a cumulative effect on future achievement in reading.

Teachers have always noticed the vast differences in the cognitive development of the children in their kindergarten and grade 1 classes. Stanovich's theory of Matthew effects posits that schools, far from being an equalizing influence, actually enhance the achievement of the high achievers and serve to depress the achievement of the low.

The present study has noted the many negative effects caused by a delay in the development of proficient

independent decoding abilities. The most immediate effect is that these children read less than their more advanced peers and lack of practice has a negative influence on the further development of reading abilities including decoding, comprehension, and vocabulary development. This effect has been well documented by Biemiller (1977-78) and by Allington (1980).

To exacerbate this problem, children have frequently been moved along through a basal series until they often find themselves trying to read materials which are much too difficult for them. Stanovich (1986) refers to the frustration and dislike of reading which this may cause. These negative affective factors in turn have even further negative effects on reading achievement.

Teachers, especially those of beginning readers, have a grave responsibility with regard to this situation. They need to be aware of these long term consequences, so that as far as possible they can be avoided. Teachers of beginning readers need the knowledge, the support of administrators and school boards, and the materials to ensure that children do not experience negative Matthew effects as a result of teaching practices.

Lip service has long been given to the principle of providing reading materials geared to the children's reading abilities. However, in practice lack of a large supply of books at many reading levels, use of highly

structured and skills oriented programs, and large classes frequently made this principle difficult to follow.

Two serious negative effects may result from pushing children into reading materials which are too difficult. The most obvious is that children will not be successful. If children have to struggle with very difficult materials they will become frustrated and will likely give up and avoid reading whenever possible. The second negative effect is that children will not get the independent reading practice necessary to test their hypotheses about the way reading works, and to make their own generalizations about written language. The provision of appealing materials at the child's own reading level is essential if this important learning is to take place. This practice is important in the development of the fast and efficient decoding strategies which are characteristic of able readers.

One of the most positive aspects of the trend towards a whole language approach to teaching reading is the success children experience when they read predictable materials, materials which emerge from their own language, and the enriching language of fine literature. Another advantage is that children are reading some materials independently from the very beginning stages of instruction, and can make many important generalizations

about written language on the basis of these reading experiences.

There is some confusion about the means through which children gain initial reading ability. If the principles of whole language are not thought through thoroughly by teachers and others responsible for reading instruction, it may be concluded that mere exposure to good reading materials will be sufficient, and that children will learn to read "naturally". However, children do need to acquire a repertoire of sight words, so that they may achieve some independent access to print at the earliest stages, and so that children have words on which to base their generalizations. This does not imply the need to use reading materials with controlled vocabularies, or that words be taught in isolation. Rather, the repertoire of sight words will evolve from the reading materials being used in relation to theme study, or from the predictable books or literature being read by the children and teacher. The point to be stressed is that for most children it cannot be left to chance, because the decoding aspect of reading is basic.

Finally teachers must provide a supportive and comfortable environment in which children can learn to read. Early efforts to read will not result in perfect renditions of texts. Children must be free to make their approximations and learn from their miscues. Use of

materials which ensure success and instructional practices such as shared reading which provide essential support contribute to the risk-free environment in which the growth of literacy should flourish.

Teachers also need to recognize that there is no magic age or grade level at which all children learn to read. In the present study, the two most able readers were relatively late starters, and their teachers believed that they were experiencing difficulty. Some children need the kind of support offered to beginners longer than others. Awareness of the stages of reading development proposed by Chall (1983) may help teachers recognize these stages in their pupils, and help them provide the instructional methods and materials appropriate to the child's stage of development.

The acquisition of literacy can be encouraged and nurtured, but it cannot be forced. Early experiences with reading can have long term effects on the development of reading ability and on attitudes towards reading. It is the responsibility of schools to see that the effects so generated are positive.

## The Role of Reading in Learning to Read

A large amount of the research reviewed for this study and the findings of the study itself, supports the role of reading in learning to read and in extending

reading abilities. Studies by Ehri (1985) suggested that reading practice is important in establishing the acquisition of spelling to sound knowledge which supports independent word recognition, and which leads to rapid and accurate decoding. Nagy, Herman, and Anderson (1985) concluded that considerable vocabulary growth takes place through the gradual accumulation of word meanings gained from reading. Reading also increases background information which contributes to the ability to make inferences.

Considering the benefits of reading, every effort must be made to provide time and materials to encourage independent reading. From the earliest grades time for sustained silent reading should be provided, and an extensive supply of books suited to the children's interests and abilities should be available in the classroom. In addition, teachers should read to all elementary school children, and primary children should hear several stories a day. Apart from the benefits already mentioned, the motivational power of exposure to good books cannot be overestimated.

The findings of this study strongly suggest that if children are to engage in extensive amounts of reading, the schools must provide the books. The families represented by this study made little use of the public library, and few children's books of literary value are

available in the local stores. Most of the books read by these children came from the school library or from book clubs operated by classroom teachers. Funds to provide well-stocked resource centres and classroom libraries must be provided.

## Implications for Research

Two of the suggestions which follow are attempts to overcome the limitations of the present study. A major limitation was that no direct study of instructional methods was undertaken. A second limitation was that study of the home environment was limited to information provided by parents and children in interviews and questionnaires. The third suggestion is concerned with synthesizing the vast amount of research in reading.

### Instructional Practices

If many of the differences between able and less able readers are the result of an accumulation of positive and negative effects which can be traced back to early reading experiences, then it is important to examine these experiences and trace their long term effects. Stanovich (1986) suggested that a major problem for future research will be to determine what instructional practices are factors in generating Matthew effects. One of the

problems in interpreting research into individual differences in reading achievement is the vast number of relationships which have been found between a legion of cognitive and non-cognitive factors and reading achievement. Stanovich posited that if some of the causes of differential achievement in reading could be attributed to earlier reading experiences, then this has the potential of clarifying reading theory. If a few of these effects are responsible for a large part of the variance in reading ability, then the result is a paring down of the number of potential causal relationships. Stanovich further suggested that if some of the factors which lead to differences in achievement could be traced to classroom practices it would be fortunate because theoretically at least these are controllable.

Home Environments

The present investigator believes that the role of the home in the acquisition of literacy is extremely important. However, this study's investigation of home environments could not assess several factors which theorists believe to be influential.

Researchers such as Athey (1983) and Greaney (1986) stated that conventional measures of home background such as socioeconomic status are insufficient in examining the relationship between home background and reading

achievement. These researchers listed such influential factors as using literary language, pointing out similarities and differences between pictures of objects and the objects themselves, consciously relating book information to the real world and the real world to book information, sharing reading in a safe and warm environment, and adopting parents' positive attitudes towards books. In addition, Athey stressed expanding conversation, exchanging ideas, and parents' responding to their children's talk as important home environment factors to consider. Flood (1977) assessed parental style in reading to children, and found that reading styles which allowed and encouraged child participation related positively to the acquisition of literacy. Assessing factors such as these in the home would require long term observational methods well beyond the scope of this study, but would perhaps reveal important differences between the home backgrounds of able and less able readers.

A study by Shirley Brice Heath (1982) made a case for the broad framework of sociocultural analysis in examining the development of language use in relation to written materials in the home and the community. Several important points were made. First, it cannot be assumed that literacy events such as a bedtime story are part of all children's experiences. Secondly, even if it is, different sub-cultures of society may structure such an

event in completely different ways. A mainstream, school-oriented society which was composed mainly of school-successful people structured such an event so that their children were well prepared for school literacy events which were also run by school-successful people. According to Brice Heath these parents asked "what" questions, they provided labels, they related book events to real life and vice versa, they encouraged the suspension of reality and the use of imagination, they accepted books and book-related activities as entertainment and they taught children to listen to stories as an audience.

In contrast, a blue-collar subculture who also believed books to be important structured story reading sessions with their children in a completely different way. Children were introduced to discrete bits and pieces of books--alphabet letters, shapes, colours, and pictures of separate items. No efforts were made to relate book information to the real world, or the real world to books. Later these children were introduced to pre-school workbooks. Activities such as colour-by-number and push out and paste were prevalent in these. Language generally was used in a more narrowly functional way than by the mainstream group. Children were encouraged to repeat book stories or answer "formulaic" questions about their contents, but were not encouraged to elaborate or

improvise. They learned relatively simplistic and literal ways of taking from books which might serve them well at the early stages of schooling, but which might fail them when the task became making inferences, making affective judgments, or imagining hypothetical situations.

Children in a third sub-culture were raised in an almost completely oral environment. No bed-time stories existed, and frequently no bed-time existed either. Children were assimilated into the adult culture as soon as they were old enough to aggressively demand their place. These children's experiences left them completely unprepared for what they would experience in schools operated by middle-class, school-successful individuals.

This brief discussion of the Brice Heath work leads to the conclusion that the influence of home environment on the acquisition of literacy is very complex. Interestingly enough, Brice Heath believed that if schools understood what children were bringing to them in the way of language development and ways of taking from books, means could be found to capitalize on the strengths the children had gleaned from their culture, and to compensate for the weaknesses.

Considering the problems experienced by many Newfoundland children in school, research into home environments might be revealing, and it might be put to practical use. In the experience of this investigator,

the family unit in this province is supportive and strong. Most local parents want to do only that which is best for their children, but they need knowledge and information which professional teachers and other school personnel can give them.

Synthesizing Research Findings

Research methodologies need to be found which will contribute to a synthesis of the vast amount of knowledge in the area of reading. A comprehensive theory of reading, perhaps similar to that proposed by Stanovich (1986), is needed to integrate, and in some cases to reconcile, the many strands of viable research in the area of reading.

Another consideration is the need for diverse methods of research which can examine the many influential factors which can affect the acquisition of reading ability. Particularly in assessing the cultural factors affecting reading, an open-minded attitude to non-traditional methods of research is important.

Finally, the pragmatic value of research in reading should not be overlooked. Reading instruction in classrooms should be guided by the best available reading research. Means of communicating what is known in terms which can be understood and used by teachers should be an important aspect of research in reading.

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# APPENDICES

# APPENDIX A

ID #____

INSTITUTE FOR EDUCATIONAL RESEARCH AND DEVELOPMENT

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

HOME LIFE

For the past two and a half years your grade four child has been helping us to conduct a study about the development of children's reading and mathematical abilities. Now we are asking you to help us. We are trying to find out what parents can do to help their children in school.

Most of the items on the next eight pages state either that HOME IS A PLACE WHERE something happens to your child, or THE WHOLE FAMILY likes to do certain things together. We want you to say whether you Definitely Agree, Mostly Agree, Mostly Disagree, or Definitely Disagree with the items.

Please read each item carefully and tick (✓) the place which best describes how you feel. Don't forget that you have to put HOME IS A PLACE WHERE...or THE WHOLE FAMILY...in front of each item for it to make sense.

Please answer every question.

All the answers you give are confidential.

Thank you for your help.

HOME IS A PLACE WHERE...

| | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 1. children should go to bed at a fixed time on school nights | ☐ | ☐ | ☐ | ☐ |
| 2. children should never be hit (or spanked) as punishment | ☐ | ☐ | ☐ | ☐ |
| 3. children should not be paid for helping with household chores | ☐ | ☐ | ☐ | ☐ |
| 4. children should not be assigned regular chores | ☐ | ☐ | ☐ | ☐ |
| 5. children should be expected to let their parents know if the rules are too strict | ☐ | ☐ | ☐ | ☐ |
| 6. "children should be seen, but not heard" | ☐ | ☐ | ☐ | ☐ |
| 7. children must learn to do as they are told | ☐ | ☐ | ☐ | ☐ |
| 8. my children can make up their own minds about many things | ☐ | ☐ | ☐ | ☐ |
| 9. the whole family is expected to be present for the evening meal | ☐ | ☐ | ☐ | ☐ |
| 10. every member of the family has an equal chance to talk at the table | ☐ | ☐ | ☐ | ☐ |
| 11. the children are not allowed to borrow other family member's belongings without permission | ☐ | ☐ | ☐ | ☐ |
| 12. the father contributes much more than the mother to household finances | ☐ | ☐ | ☐ | ☐ |

| HOME IS A PLACE WHERE... | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 13. the mother does most of the housework | ☐ | ☐ | ☐ | ☐ |
| 14. if both the father and mother were in full-time employment both would share equally in caring for the home and family | ☐ | ☐ | ☐ | ☐ |
| 15. the husband has the final say when husband and wife disagree about child rearing | ☐ | ☐ | ☐ | ☐ |
| 16. the mother is responsible for attending parent-teacher meetings | ☐ | ☐ | ☐ | ☐ |
| 17. the children go to their mother for help with homework | ☐ | ☐ | ☐ | ☐ |
| 18. the father sees that homework is completed | ☐ | ☐ | ☐ | ☐ |
| 19. the mother should get the children off to school | ☐ | ☐ | ☐ | ☐ |
| 20. the father should pick up the child in the event of illness or accident at school, or emergency school closure | ☐ | ☐ | ☐ | ☐ |
| 21. the father deals with the teacher or principal when the children have a problem at school | ☐ | ☐ | ☐ | ☐ |
| 22. the mother encourages the children to take out of school activities | ☐ | ☐ | ☐ | ☐ |
| 23. the father usually takes the children to their out of school activities | ☐ | ☐ | ☐ | ☐ |
| 24. the father usually takes the children to the doctor or the dentist | ☐ | ☐ | ☐ | ☐ |
| 25. the mother settles any problems the children may have with the neighbours or with other children | ☐ | ☐ | ☐ | ☐ |
| 26. most weekends the father spends more time with the children than the mother | ☐ | ☐ | ☐ | ☐ |
| 27. the mother spends more time during the week with the children than the father | ☐ | ☐ | ☐ | ☐ |
| 28. never a day goes by without the father spending some time with the children | ☐ | ☐ | ☐ | ☐ |
| 29. the father has always done most of the reading to the children | ☐ | ☐ | ☐ | ☐ |
| 30. the father should be more involved in bringing up the children | ☐ | ☐ | ☐ | ☐ |
| 31. plans have already been made to finance the children's schooling beyond the high school level | ☐ | ☐ | ☐ | ☐ |
| 32. the children are expected to go on to college or university | ☐ | ☐ | ☐ | ☐ |
| 33. the children are expected to write letters and thank you notes | ☐ | ☐ | ☐ | ☐ |

| HOME IS A PLACE WHERE | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 34. the children bring leisure reading books from school | ☐ | ☐ | ☐ | ☐ |
| 35. the children keep their rooms tidy | ☐ | ☐ | ☐ | ☐ |
| 36. the children are expected to wash their hands and brush their teeth without being told by the time they are in grade 4 | ☐ | ☐ | ☐ | ☐ |
| 37. the children have been encouraged to play sports | ☐ | ☐ | ☐ | ☐ |
| 38. the children expect a reward for bringing home a good report card | ☐ | ☐ | ☐ | ☐ |
| 39. the children have hobbies (e.g., collect-stamps, coins and other things, build models, play a musical instrument, knit, sew, etc.) | ☐ | ☐ | ☐ | ☐ |
| 40. it is insisted that the children speak correctly | ☐ | ☐ | ☐ | ☐ |
| 41. the children are not allowed to "talk back" | ☐ | ☐ | ☐ | ☐ |
| 42. we do not mind how well the children do in school | ☐ | ☐ | ☐ | ☐ |
| 43. the children are expected to do something useful at all times | ☐ | ☐ | ☐ | ☐ |
| 44. the children must look out for themselves | ☐ | ☐ | ☐ | ☐ |
| 45. the children have the right to voice their own opinions | ☐ | ☐ | ☐ | ☐ |
| 46. the children keep busy without having to be attended to | ☐ | ☐ | ☐ | ☐ |
| 47. the mother handles the "kids" while the father attends to other things | ☐ | ☐ | ☐ | ☐ |
| 48. the children bring books from the public library | ☐ | ☐ | ☐ | ☐ |
| 49. we subscribe to children's magazines (Owl, World, Highlights, Sesame Street magazine etc.) | ☐ | ☐ | ☐ | ☐ |
| 50. an encyclopedia and/or a dictionary is available for the children's use | ☐ | ☐ | ☐ | ☐ |
| 51. there are lots of books for the children | ☐ | ☐ | ☐ | ☐ |
| 52. we have always read to our children on a regular basis | ☐ | ☐ | ☐ | ☐ |
| 53. we like to talk to the children about the books we read to them | ☐ | ☐ | ☐ | ☐ |
| 54. we like to talk to the children about the TV programs we watch together | ☐ | ☐ | ☐ | ☐ |

| HOME IS A PLACE WHERE... | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 55. the children like to play word games such as I spy...,scrabble, 20 questions and crossword puzzles | ☐ | ☐ | ☐ | ☐ |
| 56. the children like to solve puzzles (e.g. jigsaw puzzles, brain teasers, mazes, Rubick's cube etc.) | ☐ | ☐ | ☐ | ☐ |
| 57. the children like to play board games such as Snakes and Ladders, Sorry, Monopoly, Trivial Pursuit, Clue, Checkers, etc. | ☐ | ☐ | ☐ | ☐ |
| 58. the children like to play card games such as Go Fish, Snap, Old Maid, Crazy Eights, etc. | ☐ | ☐ | ☐ | ☐ |
| 59. the children take part in competitions (e.g. music festivals, church choirs, colouring contests, etc.) | ☐ | ☐ | ☐ | ☐ |
| 60. the children learn to look after themselves (to cook, to sew, to set table, wash dishes, etc.) | ☐ | ☐ | ☐ | ☐ |
| 61. the children learn to care for their things (to make beds, tidy their rooms, put toys away after use, etc.) | ☐ | ☐ | ☐ | ☐ |
| 62. the children learn to care for pets (dogs, cats, birds, fish, etc.) | ☐ | ☐ | ☐ | ☐ |
| 63. the children learn to fix things (bikes, toys, books, etc.) | ☐ | ☐ | ☐ | ☐ |
| 64. the children like to plant things (vegetables, flowers, shrubs, trees, etc.) | ☐ | ☐ | ☐ | ☐ |

| THE WHOLE FAMILY... | Rarely | Occasionally | Frequently | Most of the time |
|---|---|---|---|---|
| 65. watches educational TV programs together (Electric Company, 3-2-1 Contact, Mr. Rogers, Newton's Apple, etc.) | ☐ | ☐ | ☐ | ☐ |
| 66. goes to plays, concerts, movies together | ☐ | ☐ | ☐ | ☐ |
| 67. visits different communities, museums, exhibitions together | ☐ | ☐ | ☐ | ☐ |
| 68. participates in sports such as skating, swimming, skiing together | ☐ | ☐ | ☐ | ☐ |
| 69. goes on holidays together | ☐ | ☐ | ☐ | ☐ |
| 70. visits other countries together | ☐ | ☐ | ☐ | ☐ |
| 71. goes on hikes, picnics, berry picking or nature walks together | ☐ | ☐ | ☐ | ☐ |
| 72. visits zoos, parks, marine exhibits, historical buildings together | ☐ | ☐ | ☐ | ☐ |
| 73. entertains adult visitors together | ☐ | ☐ | ☐ | ☐ |

| THE WHOLE FAMILY ... | Rarely | Occasionally | Frequently | Most of the time |
|---|---|---|---|---|
| 74. has family get togethers with friends or relatives | ☐ | ☐ | ☐ | ☐ |
| 75. visits other provinces together | ☐ | ☐ | ☐ | ☐ |
| 76. visits local places of interest such as Cape Spear, the Cabot Tower, the University Marine Laboratory, etc. | ☐ | ☐ | ☐ | ☐ |
| 77. attends local events such as the craft fair, the horticultural show, the Pope's visit, a Royal visit, etc. | ☐ | ☐ | ☐ | ☐ |
| 78. attends live sporting events such as hockey games, softball games, swim meets, etc. | ☐ | ☐ | ☐ | ☐ |
| 79. attends church together | ☐ | ☐ | ☐ | ☐ |
| 80. reads aloud to one another | ☐ | ☐ | ☐ | ☐ |

Please indicate (✓) what you do when your child behaves in each of the following ways.

1. Do nothing or ignore
2. Discuss or talk about the situation
3. Scold or threaten
4. Ground/send to room/take away privileges
5. Physically punish/spank

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 81. Does not come home when told | ☐ | ☐ | ☐ | ☐ | ☐ |
| 82. Fights with brothers/sisters/friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| 83. Does not come home on time | ☐ | ☐ | ☐ | ☐ | ☐ |
| 84. Refuses to own up after doing something wrong | ☐ | ☐ | ☐ | ☐ | ☐ |
| 85. Teases/torments smaller children | ☐ | ☐ | ☐ | ☐ | ☐ |
| 86. Talks back to mother/father | ☐ | ☐ | ☐ | ☐ | ☐ |
| 87. Is defiant (e.g. refuses to go to bed when asked) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 88. Does not do as he/she is told | ☐ | ☐ | ☐ | ☐ | ☐ |
| 89. Leaves belongings lying around | ☐ | ☐ | ☐ | ☐ | ☐ |
| 90. Tells a lie | ☐ | ☐ | ☐ | ☐ | ☐ |
| 91. Breaks something deliberately | ☐ | ☐ | ☐ | ☐ | ☐ |

Please indicate (✓) how often these happen in the home

1. Never/rarely
2. Sometimes/occasionally
3. Often/frequently
4. Always/most of the time

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 92. Bedtime rules are enforced | ☐ | ☐ | ☐ | ☐ |
| 93. Mealtime rules are enforced | ☐ | ☐ | ☐ | ☐ |
| 94. The TV is on during mealtimes | ☐ | ☐ | ☐ | ☐ |

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 95. The children eat everything on their plate | ☐ | ☐ | ☐ | ☐ |
| 96. The children "talk back" to their mother | ☐ | ☐ | ☐ | ☐ |
| 97. The children "talk back" to their father | ☐ | ☐ | ☐ | ☐ |
| 98. The children interupt a conversation between adults | ☐ | ☐ | ☐ | ☐ |
| 99. I "give in" to what my child wants even though it is against the family rules | ☐ | ☐ | ☐ | ☐ |
| 100. The children sleep in on school days | ☐ | ☐ | ☐ | ☐ |

HOME BACKGROUND QUESTIONS
(Every question is confidential)

101. What is the present or last main occupation of the father or guardian?

Occupation:_____

102. What does he do in this job?_____

_____

_____

103. What is the present or last main occupation of the mother?

Occupation:_____

104. What does she do in this job?_____

_____

_____

105/106. How much education have the father and mother had?

| | Father | Mother |
|---|---|---|
| Elementary School only | ☐ | ☐ |
| Some High School | ☐ | ☐ |
| Finished High School | ☐ | ☐ |
| Some College or University | ☐ | ☐ |
| Vocational School | ☐ | ☐ |
| Finished College or University | ☐ | ☐ |
| Other training (not degree or diploma; e.g. company sponsored course) | ☐ | ☐ |
| Advanced education, post-graduate degree (Master's, Ph.D., M.D., Ll.B., etc.) | ☐ | ☐ |

107. How many children are there in the family?

Boys____Girls____

| | | |
|---|---|---|
| 108. How many children are younger than the grade four child? | ____ | ____ |
| 109. How many children are older than the grade four child? | ____ | ____ |

How many of these do you have in your home?
(circle the number in each line)

| | | | | | | |
|---|---|---|---|---|---|---|
| 110. telephone | 0 | 1 | 2 | 3 | 4 | or more |
| 111. dishwasher | 0 | 1 | 2 | 3 | 4 | or more |
| 112. microwave oven | 0 | 1 | 2 | 3 | 4 | or more |
| 113. deep freeze | 0 | 1 | 2 | 3 | 4 | or more |
| 114. tape recorder | 0 | 1 | 2 | 3 | 4 | or more |
| 115. video casette recorder (VCR) | 0 | 1 | 2 | 3 | 4 | or more |
| 116. colour TV | 0 | 1 | 2 | 3 | 4 | or more |
| 117. bedrooms | 0 | 1 | 2 | 3 | 4 | or more |
| 118. bathrooms | 0 | 1 | 2 | 3 | 4 | or more |
| 119. vehicles (e.g. autos, vans, trucks) | 0 | 1 | 2 | 3 | 4 | or more |

120/121. How many hours does the father and mother work for pay each week? (check one)

| | Father | Mother |
|---|---|---|
| 1 - 19 | ☐ | ☐ |
| 20 - 29 | ☐ | ☐ |
| 30 - 34 | ☐ | ☐ |
| 35 - 39 | ☐ | ☐ |
| 40 - 44 | ☐ | ☐ |
| 45 or more | ☐ | ☐ |

122/123. In the last six months has the father or mother had a job in which they were temporarily laid off?

| | Father | Mother |
|---|---|---|
| Yes | ☐ | ☐ |
| No | ☐ | ☐ |

124/125. At the present time what is the employment status of the father and mother?

| | Father | Mother |
|---|---|---|
| Housewife/Househusband | ☐ | ☐ |
| Unemployed (looking for work) | ☐ | ☐ |
| Unemployed (not looking for work) | ☐ | ☐ |
| Self-employed | ☐ | ☐ |
| Employed (part-time) | ☐ | ☐ |
| Employed (full-time) | ☐ | ☐ |

126. Parental status

| | Father | Mother |
|---|---|---|
| Single parent | ☐ | ☐ |

127. Comparing your family to others, how privileged are your children? (check one)

- Among the most privileged of children ☐
- Privileged ☐
- About average ☐
- Less privileged ☐
- Not privileged at all ☐

128. The answers to this questionnaire were given by:

- the mother ☐
- the father ☐
- both mother and father ☐

THE END

Have you tried to answer all the questions?

Thank you for your help.

Please return the questionnaire in the stamped addressed envelope provided.

SESA/IERD
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 3X8

# APPENDIX B

ID #_____

INSTITUTE FOR EDUCATIONAL RESEARCH AND DEVELOPMENT

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

Write your name here:_____

SCHOOL LIFE

We want to know how you feel about your school. Each sentence on the next two pages says that SCHOOL IS A PLACE WHERE particular things happen to you or where you feel in a particular way. We want you to say whether you Definitely Agree, Mostly Agree, Mostly Disagree, or Definitely Disagree with each of the sentences.

Please read each sentence carefully and tick (✓) the answer which best describes how you feel. Don't forget to put SCHOOL IS A PLACE WHERE...at the beginning of each sentence so that it makes sense; for example,

School is a place where I really like to go.

Let's try a practice question.

| SCHOOL IS A PLACE WHERE: | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 1. I like to be | ☐ | ☐ | ☐ | ☐ |
| 2. I daydream a lot | ☐ | ☐ | ☐ | ☐ |

Thank you very much.

Your answers will be kept secret. No one else will see them.

| SCHOOL IS A PLACE WHERE... | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 3. I get enjoyment | ☐ | ☐ | ☐ | ☐ |
| 4. I feel sad | ☐ | ☐ | ☐ | ☐ |
| 5. people look up to me | ☐ | ☐ | ☐ | ☐ |
| 6. I learn to get along with other people | ☐ | ☐ | ☐ | ☐ |
| 7. teachers treat me fairly in class | ☐ | ☐ | ☐ | ☐ |
| 8. I can do well enough to become successful | ☐ | ☐ | ☐ | ☐ |
| 9. I like to learn new things | ☐ | ☐ | ☐ | ☐ |
| 10. I feel great | ☐ | ☐ | ☐ | ☐ |
| 11. I feel lonely | ☐ | ☐ | ☐ | ☐ |
| 12. I know that people think a lot of me | ☐ | ☐ | ☐ | ☐ |
| 13. I accept others as they are | ☐ | ☐ | ☐ | ☐ |
| 14. teachers are usually fair | ☐ | ☐ | ☐ | ☐ |
| 15. I am happy with how well I do | ☐ | ☐ | ☐ | ☐ |
| 16. I feel good about my work | ☐ | ☐ | ☐ | ☐ |
| 17. I really like to go | ☐ | ☐ | | ☐ |
| 18. I get upset | ☐ | ☐ | ☐ | ☐ |
| 19. people think I can do a lot of things | ☐ | ☐ | ☐ | ☐ |
| 20. I can get along with most of the students even though they may not be my friends | ☐ | ☐ | ☐ | ☐ |
| 21. teachers listen to what I say | ☐ | ☐ | ☐ | ☐ |
| 22. I know the sorts of things I can do well | ☐ | ☐ | ☐ | ☐ |
| 23. I can learn the things I need to know | ☐ | ☐ | ☐ | ☐ |

| SCHOOL IS A PLACE WHERE... | Definitely Agree | Mostly Agree | Mostly Disagree | Definitely Disagree |
|---|---|---|---|---|
| 24. learning is a lot of fun | ☐ | ☐ | ☐ | ☐ |
| 25. I feel restless | ☐ | ☐ | ☐ | ☐ |
| 26. people come to me for help | ☐ | ☐ | ☐ | ☐ |
| 27. I try to be nice to all the students in my class even though some of them are not my friends | ☐ | ☐ | ☐ | ☐ |
| 28. teachers give me the marks I deserve | ☐ | ☐ | ☐ | ☐ |
| 29. I know how to cope with the work | ☐ | ☐ | ☐ | ☐ |
| 30. I find the work interesting | ☐ | ☐ | ☐ | ☐ |
| 31. I feel happy | ☐ | ☐ | ☐ | ☐ |
| 32. there is nothing exciting to do | ☐ | ☐ | ☐ | ☐ |
| 33. I feel important | ☐ | ☐ | ☐ | ☐ |
| 34. I have lots of friends | ☐ | ☐ | ☐ | ☐ |
| 35. teachers help me to do my best | ☐ | ☐ | ☐ | ☐ |
| 36. I get satisfaction from the work I do | ☐ | ☐ | ☐ | ☐ |
| 37. I can get so interested in something I don't want to stop | ☐ | ☐ | ☐ | ☐ |
| 38. I feel proud to be a student | ☐ | ☐ | ☐ | ☐ |
| 39. you are bossed around too much | ☐ | ☐ | ☐ | |
| 40. people trust me | ☐ | ☐ | ☐ | ☐ |
| 41. having different kinds of students in my class helps me to get along with everyone | ☐ | ☐ | ☐ | ☐ |
| 42. I like my teachers | ☐ | ☐ | ☐ | ☐ |
| 43. the work I do is important to me | ☐ | ☐ | ☐ | ☐ |
| 44. I like all my subjects | ☐ | ☐ | ☐ | ☐ |

The next three questions are different. Answer by putting a tick (✓) in the box that describes how well you do.

45. How good are you in mathematics? (tick one box)

- A lot above average ☐
- A little above average ☐
- About average ☐
- A little below average ☐
- A lot below average ☐

46. How good are you in reading? (tick one box)

- A lot above average ☐
- A little above average ☐
- About average ☐
- A little below average ☐
- A lot below average ☐

47. How good are you in your school work in general? (tick one box)

- A lot above average ☐
- A little above average ☐
- About average ☐
- A little below average ☐
- A lot below average ☐

The End

Have you answered all the questions?

# APPENDIX C

# APPENDIX C

## CHILDREN'S INTERVIEW

### School Life

1. How do you like school this year?

2. What do you like the best about school?

3. a) What do you like most in a teacher?

   b) What do you like least?

4. a) How did you do in your last report?

   b) What did your parents think of it?

   c) How did you do compared to the other kids in the class?

5. Are you looking forward to going to the Junior High School in September.

6. Do you think the work will be hard for you?

7. Would you say school is getting easier or harder?

   a) Can you tell me anything that makes school work easier for you?

   b) Can you think of one thing that makes school work harder for you?

How about homework?

   a) Do you get a lot of homework?

   b) Do you find you have enough time to complete it?

   c) When do you usually do your homework?

   d) Who do you ask if you need help while you're doing your homework?

Social Life

1. What do you usually do after school?

   a) Do you go to any regular lessons or clubs?

   b) Do you get time to play with your friends after school?

      On weekends?

   c) What sorts of things do you do with your friends?

   d) Are your friends mostly from school or the neighbourhood?

   e) Who is the most popular kid in your class?

      i) Do you have any idea why?

      ii) Would you like to be more like him/her?

Personal Life

1. What would you do if you had a million dollars?

2. If you were given 3 wishes, what would you wish for?

   1.

   2.

   3.

3. If you could be anyone in your family, who would you be?

   Why?

4. If you could be anyone in your school, who would you be?

   Why?

5. a) What are your 3 favourite shows on T.V.?

5. b) Are there any rules about T.V. in your house? What are they?

c) How much T.V. do you watch every day?

On weekends?

Reading

1. How good do you think you are in reading?

A lot above average ____

A little above average ____

Average ____

A little below average ____

A lot below average ____

2. Do you know any really good readers?

3. What do you think makes a person a good reader?

4. Do you find the reading in any of your school books hard?

Reading

5. Why do you think some reading is hard for you?

6. What do you do if you come to a word you don't know?

7. What do you do if you don't understand what you're reading very well?

8. Do you ever read things very slowly or very quickly?

9. Why?

10. What kinds of things do you like to read most?

11. Do you have any favourite authors?

12. When do you do most of your reading at home?

13. Where?

Reading

14. Do you take books home from the library?

15. Do your parents ever go to the library with you to help you choose books?

16. Do you and your parents discuss books together?

# APPENDIX D

APPENDIX D

PARENT INTERVIEW

Pre-School Years

1. Was _____ interested in books before he/she went to school?

2. How often would stories be read to _____?

3. Did _____ ask to have stories read?

4. Can you recall any book or story that was a favourite?

5. Did _____ enjoy paper and pencil activities before going to school? (e.g., drawing, colouring)

6. Did _____ pretend to read books before he/she actually could?

7. Do you recall any game, toy or activity that was a favourite?

8. Did _____ attend nursery school?

9. Do you think this helped _____ prepare for school? How?

10. What do you think _____ learned from T.V. as a preschooler?

11. Would you describe _____ as being particularly active as a young child?

Early Years of School (Kindergarten - Grade 2)

12. Did _____ want to go to school in kindergarten?

13. Did _____ like school in the early grades?

14. In your opinion, was _____ successful in the early stages of reading instruction?

15. Did _____ have trouble reading materials sent home from school?

16. How did you try to help with difficult reading materials?

17. Was _____ ever upset or frustrated by reading material assigned to read at home?

18. Was _____ interested in reading assigned materials?

19. Did _____ find any grade especially difficult? Why do you think so?

20. Did _____ find any grade especially enjoyable? Why do you think so?

_____
_____
_____

The Present

21. Does _____ like school this year?

_____
_____
_____

22. Are you happy with _____'s present progress?

_____
_____
_____

23. Are you concerned with anything in particular with regard to academic progress?

_____
_____
_____

24. Does _____ usually need help with homework?

_____
_____
_____

25. How do you try to help if _____ is having difficulty?

_____
_____
_____

26. What subject area does _____ like best?

27. What subject area does _____ like least?

28. What academic areas cause most trouble for _____?

29. Are you concerned about the amount of T.V. _____ watches?

30. Could you name 2 or 3 leisure time activities which especially interest _____?

# APPENDIX E

# APPENDIX E

NAME OF STUDENT _____ GRADE _____

_____ TEACHER'S NAME _____

## TEACHER QUESTIONNAIRE

Introductory Questions

1. Is there anything about _____ that immediately comes to mind?

2. Is there anything about _____'s class that you can remember that might be significant? (e.g., Would you say it was an average class?)

3. Does anything stand out as a turning point in _____ _____'s progress?

4. Did _____ ever have remedial or other special help?

5. Does _____ have any special abilities in non-academic areas? (e.g., sports? art? music?)

6. Can you think of anything that might have hindered _____'s progress at any time? (e.g., illness, accident, home life, moving house?)

7. In grade _____, what did you think of _____'s potential? Why? (What made you think that?)

   a) Do you think he/she was working at his/her potential?

8. What kind of support did _____ receive from his home? (e.g., Were things returned on time, assignments completed?)

9. Were any additional parent/teacher conferences scheduled at either the parent's or teacher's request? Why?

10. How would you describe the parents attitude toward the school?

11. How would you describe the parent's attitude toward the child? (e.g., over-protective, encouraging, overly-strict?)

12. How important were extra curricular activities for _____? Did this ever create a conflict with the school work?

13. Did the child bring items from the home to share with the class?

14. What was the child's social place in the class? (e.g., loner, one of the boys, etc.)'

15. How much did _____ rely on the teacher or peers for directions?

16. Were there any management problems created by _____ in the class?

a) excessive talking

b) interruptions

c) tormenting other children

d) crying or emotional upsets

e) dawdling

f) losing things

g) leaving things at home (e.g., school supplies, texts)

h) getting work completed

i) distractability

17. How would you describe _____'s coordination? (e.g., ability to manipulate small objects, tying laces, overall physical grace)

18. How would you describe _____'s verbal contributions in class? (e.g., lots to contribute, shy responding verbally?)

19. How would you describe _____'s general knowledge?

20. In learning new words do you recall whether _____ had any difficulty?

21. What was _____'s reading like? (e.g., reading comprehension, word identification)

a) interest (e.g., high, disinterested?)
Did _____ take books home to read?

b) What kinds of books did _____ like? (e.g., took all books in a series)

22. How well did _____ do in spelling? (e.g., weekly spelling test, general work)

23. How well did _____ express himself in writing?

24. Did _____ have any difficulty with putting things down on paper?

25. How would you characterize _____'s general thinking ability?

26. How well did _____ perform on reasoning questions? (e.g., math problems?)

27. Did _____ have any particular problems with test taking? (e.g., Did scores usually reflect actual class performance?)

28. Do you consider _____ to be persistent when faced with a problem?