AN INVESTIGATION OF THE INTERRELATIONSHIPS AMONG GRADE SIX READERS' CONCEPTS OF SELF, METACOGNITIVE AWARENESS, GENDER AND READING COMPREHENSION

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BY

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ABSTRACT

The purpose of this study was to investigate the inter-relationships among reading comprehension, students' perceptions of themselves (both globally and scholastically), and metacognitive awareness (specifically, view of reading task, knowledge of reading strategies and perceptions of self as a reader).

Forty-five female students and forty-five male students were identified from four grade six classrooms at an elementary school school in Marystown. [Six groups of fifteen, were assigned, according to gender and percentile ranking in the Comprehension sub-test of the Gates-McGinitie Reading Test, Level D, Form 1]. Subjects were randomly selected from three categories of ability until equal numbers of highly-skilled (scoring between the 58th and 99th percentile in the Gates-McGinitie), moderately skilled (scoring between the 44th and 54th percentile in the Gates-McGinitie) and less skilled (scoring between the 7th and 27th percentile on the Gates-McGinitie) male and female readers. Students were interviewed orally using the Thomas Attitude and Awareness Inventory to determine their level of metacognitive awareness with respect to their attitudes and perceptions about the reading task, their knowledge of the reading task and reading strategies, and their perceptions of themselves as readers. Interviews were tape-recorded, transcribed and scored for "meaningful" answers. Numerical scores were tabulated for each of the three sections of the inventory. The Harter Self-Perception Profile for Children was also then administered to each student in order to tap each child's judgements of

his/her competency in five different domains. Four domains included: scholastic competence, social acceptance, physical appearance and behavioural conduct; as well, a global perception of their worth or esteem as a person, was measured. Numerical scores were tabulated for each question in each domain. Scoring resulted in a total of six sub-scale means which defined the child's profile.

The results obtained were submitted to correlational analysis to determine the relationships of the selected variables to reading comprehension as well as the relationships among these variables. At the .01 level of confidence, statistical analysis revealed relationships existed between:

skill in reading and perceptions of scholastic competency,

skill in reading and reading attitude,

skill in reading and knowledge of reading strategy,

skill in reading and perceptions of self as reader,

scholastic competency and reading attitude,

scholastic competency and knowledge of reading strategies,

scholastic competency and global self-concept, and

reading attitude and knowledge of reading strategies.

At the .05 level of confidence, statistical analysis revealed relationships existed between:

gender and knowledge of reading strategies; and

perception of self as reader and knowledge of reading strategies.

Teaching methods which allow interactive dialogues, explanations, modelling,

and practice time that help students learn reading strategies in a variety of reading texts within positive classroom climates (i.e., those which are conducive to students' chance-taking and decision-making) appear to be critical educational implications of this study. As well, providing opportunities for the development of an enjoyment of reading and visualization comprehension strategies for male readers are important considerations.

Further research studies are recommended using more accurate instrumentation and sophisticated correlational designs which extend the scope of this investigation to include the influence of parental attitudes and beliefs on children's perceptions and value of the reading task and attributions for success, (or failure). Such studies should also include rural and urban communities within provincial and cross-cultural settings.

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CHAPTER I

INTRODUCTION

Background of the Study

Most educators today would agree that a fundamental goal of education is to teach children to become self-directed learners who seek to acquire new information and to master new skills. Self-controlled learners plan, evaluate, and regulate their own activities and they develop a life-long interest in learning (Paris, 1983).

Reading is an extremely important part of this development. Recent emphasis on metacognition has introduced new dimensions to the analysis of reading. Specifically, studies have shown that an awareness of the utility and appropriateness of various actions is characteristic of better (or more strategic) readers.

Flavell and Wellman (1977) wrote that metacognition involved several dimensions:

1. Knowing about oneself and one's abilities in relation to the task.

2. Knowing about the task (i.e., what is the purpose and scope of the task?)

3. Knowing about the strategies that are relevant to the task and knowing when and how to use these strategies.

Although the term metacognition is new, the concept is not. When E. L. Thorndyke claimed in 1917 that "reading is reasoning" he was stating a metacognitive concept, although he might have been surprised to hear it!

This new focus in research has identified and documented students' metacognitive abilities and disabilities at all levels, but mostly for those children at risk for academic failure.

Commenting on differences in reader's strategies, Holt (1964) wrote "successful school children check their answers and their thoughts against common sense, while other children not expecting answers to make sense, not knowing what is sense, see no point in checking, no way of checking." (p. 71)

Society considers reading a basic life skill. As stated by the American National Commission on Reading (1985): "It is a cornerstone for a child's success in school and, indeed, throughout life. Without the ability to read well, opportunities for personal fulfillment and job success inevitably will be lost" (p. 1, Becoming a Nation of Readers). While there are a number of complex and interacting factors in the cognitive and affective areas of development that are related to children's poor performance in reading, conclusions from recent research have suggested that the lack of metacognitive knowledge (Bos & Filip, 1984; Myers & Paris, 1978), negative self-beliefs and poor motivation (Nicholls, 1979; Hiebert, Winograd & Danner, 1984) are important contributing factors.

Based upon a newly emerging framework from the fields of cognitive psychology, specifically addressing metacognition and motivation, the interactive operations of an individual's knowledge about the value of strategies and perceptions of one's abilities, as well as beliefs about reasons for task success and failure have been proposed as important influences on performance (Kurtz & Borkowski, 1984;

Winograd & Paris, 1989). In classrooms where children are learning to read, there are many occasions for risk-taking that result in their monitoring of positive or negative feedback which over time affects their concepts of themselves as readers. As Deeds (1981) has described:

> Children in our school systems are asked daily to take chances; to write a paper that will be evaluated, to read for a class that may laugh, to do board work that may be wrong, to create an object of art that will be judged. Viewed at another level, children are asked to risk their self-concept (p. 78).

For those children who experience repeated success in school, such situations may be of little consequence, but for children who constantly meet with failure, those same situations can be seriously damaging to the self-concept. A child who has problems in reading is constantly risking his/her self-concept. As Cook (1983) has suggested: "Because reading permeates the entire curriculum, learning to read is vital, and not succeeding at it can result in helplessness, frustration and a negative self-concept". (p. 4) Repeated unsuccessful encounters with print may have damaging effects on different traits of the developing reader. As the American report, Becoming A Nation of Readers, (1985) explained:

> Failure is not fun. Predictably, poor readers have unfavourable attitudes toward reading. What is not so predictable is whether lack of proficiency in reading stems from unfavourable attitudes or whether it is the other way around. Probably the truth can lie in either direction. (p. 14)

Frustration and anxiety arising from unsuccessful attempts to read may lead less proficient readers to exhibit beliefs about themselves that might account for some of the observed differences in reading behaviour and/or inhibit the use of or

effectiveness of metacognitive knowledge and strategies. Reading for these children can be a troubling and possibly traumatic experience. As Deeds (1981) elaborated:

> Children who come to school believing they will not succeed in reading, as well as children who gain this concept at a later time, become victims of a self-fulfilling prophecy. Because they anticipate failure in reading, their behaviours and efforts during reading instruction contribute to making their expectations come true (p. 79).

When children do not learn to read, the social consequences may be negative also. As Quandt and Selznick (1984) has suggested: "With the current emphasis that society places on reading ability most children today grow up in an environment in which inability to read is socially unacceptable" (p. 4).

Compound societal pressure with that which the school places on the child where reading is the code to learning and one can see the benefits of investigating the relationships among self-perceptions, metacognitive awareness and reading achievement to obtain findings which might inform teaching by provision for the multifaceted aspects of the reading act.

Introduction to the Problem

Children who approach the reading task with appropriate schemata (including background information schema(s) specific to the text being read and about the act of reading itself) would appear to be at a distinct advantage in learning to read. As well, students who have experienced success and have internalized a schema of themselves as readers and competent readers, would also seem more likely to

approach the reading situation expecting, evaluating and persisting until realizing success.

According to the research literature, the self-concepts of individuals are developed, at least partially, as a result of the experiences that they have had with others. Quandt (1984) suggested that from a very early age children learn two concepts from the reactions of people who are important to them, their significant others: how competent s/he is in activities which are deemed important to the child and how valuable s/he is as an individual. He posited that not only is self-concept involved in learning to read but that a resulting reading disability leads to poor self-concept. He suggested that: "an entire spiral of reading disability and self-concept continually reinforcing one another is possible" (p. 5).

Chapman & Boersma (1979), have suggested that some children who have a weakness in a particular academic area may generalize their feeling about this to other facets of the school situation. Given the critical importance of reading to both school and society generally, it is possible that perceptions such as a specific reading self-concept may extend to children's more global view of the self.

There has been a current upsurge in research conducted on the individual's perception of self and his/her situation as a major influence on behaviour. Athey (1985) has stated: "There is probably little disagreement today, even among the most fervent advocate of a cognitive-linguistic view of reading, that affective factors play a role in reading achievement and reading behaviour" (p. 527). Pottebaum, Keith, Ehly (1986) believed that this changing focus stems from

consideration that children's perceptions, beliefs and feelings about themselves are key factors in school achievement.

If our definitions of reading concur with Thorndyke's that reading is thinking, then the affective component is implicated in the reading process. As McWatters (1989) has noted: "The reader brings so much of him or herself to reading through his or her thoughts, that what he or she thinks of him or herself is also added baggage" (p. 3).

In summary, it seems reasonable to state that the constructive process of reading is affected by children's awareness level, not only of the task at hand (namely reading) and how to monitor their understanding, but also by their perceptions of competency.

Rationale for the Study

Being able to read is considered of critical importance both in our classrooms and in our society. Today, not being a reader often carries a most debilitating stigma - perhaps even affecting at least some aspect of the individual's self-concept. As Singh (1972) described:

> In every society, individuals must acquire the prescribed skills and knowledge which are functional both to the society and the individuals. (Brookover & Gottlieb, p. 465) Both lay and professional people are now seriously evaluating the reasons given by educators and social scientists about why some children have not achieved in learning, while other children are very successful (p. 10).

More and more there is a deepening interest in individual perceptions of themselves and their situations as major influences on their behaviour. Investigations

are continuing to explore the domain specific nature of children's self-perceptions and concepts of their competence. This study extends the investigation to the specific domain of reading and seeks to uncover the interrelationships that such perceptions have with other important variables in the reading act. As Deeds (1981) posited: "there is an intricate interrelationship between a person's image of self and the ability to read" (p. 78).

In the area of reading research, numerous studies have shown that positive reading attitudes (intrinsic value of role as reader) are positively related to reading performance (Kennedy & Halinski, 1978; Alexander & Filler, 1976; Ashkov & Fischbach, 1973); that self-concept of ability is related to reading achievement (Quandt & Selzick, 1984; Deeds, 1981; Crawford, 1976; Forte, 1975) and also that metacognitive awareness is related to reading achievement (Garner & Kraus, 1981-82; Canney & Winograd, 1979; Myers & Paris, 1978).

The need to investigate such relationships has been stated by Wigfield & Asher (1984), who claimed that researchers interested in the development of achievement motivation processes "generally have not explored how such processes operate in particular achievement contexts such as reading". As well, they have contended that "integrating these literatures (i.e., achievement motivation processes and specific processes) should provide a more complete account of social and motivational influences on reading" (p. 423). Likewise, Oldford-Matchim (1991) has observed that: "Overall, the research literature on social-psychological factors, and their interrelationships, and children's reading skill is relatively fragmented" (p. 2).

While it appears evident that much research has been conducted on relationships between reading achievement and various reasons for reading difficulties, and in the area of global self-concept and academic achievement, relatively little has been completed in investigating possible relationships among self concept, metacognitive awareness and achievement in the specific domain of reading.

Consequently, this study investigates the relationships among the variables selected for this study to contribute to our understanding the role they play in children's learning to read.

Statement of the Problem

On the basis of the rationale outlined, the objective of this investigation was to investigate the relationships among self-concept, including the specific domains of scholastic competence, global self-concept and metacognitive awareness including the specific schemata:

1. attitude toward reading task,
2. awareness of metacognitive strategies,
3. view of self as reader,

and reading comprehension, as measured by a standardized reading comprehension test.

The specific research questions investigated were:

1. What is the relationship between each of the parameters of the reading task, namely:
   A. perception of the task and strategies
   B. attitude

C. view of self as reader
and sixth-graders' reading comprehension skill level?

2. What is the relationship between sixth-graders reading comprehension and their perceptions of their scholastic competency?

3. What is the relationship between sixth-graders reading comprehension and their overall perception of global self-worth of esteem?

4. What is the relationship between sixth-graders' global self-concepts and the perceptions they hold about their scholastic competencies?

5. What is the relationship between sixth-graders view of self as reader and their perceptions of scholastic competencies?

6. What is the relationship between sixth-graders attitudes towards reading and their perceptions of scholastic competencies?

7. What is the relationship between sixth-graders perceptions of reading strategies and their scholastic competencies?

Significance of the Study

It is generally accepted among teachers that children with positive self-concepts perform well in school. Purkey (1970) has described the situation as follows: "For generations, wise teachers have sensed the significant and positive relationship between a student's concept of himself(herself) and his(her) performance in school. They believed that the students who feel good about themselves and their abilities are the ones who are most likely to succeed" (p. 14).

Aaron (1984) contended that "The confidence learners have in their ability to learn is an important and sometimes neglected aspect of reading achievement. Self-concept is among the most important influences upon learning" (Quandt & Selznick, 1984, p. iv). Furthermore, Quandt & Selznick (1984) stated:

> If successful in extracting ideas from the printed page and if people important to them enable the children to recognize their success, they will develop concepts of themselves as "readers." As a result of such successes, children will attempt more difficult material, take more pleasure in reading, and be apt to read more widely. The wide reading makes children better readers. As children recognize their improvement, and as people important to them notice, children's concepts of themselves as readers, are enhanced, and the cycle continues (p. 5).

Combs (1952) has described the possible effects of negative or poor self concepts on reading outcomes:

> Such a child (one with a poor concept of self as reader) is likely to avoid reading, and thus the very experience which might change his concept of self is bypassed. Worse still, the child who believes himself unable to read, confronted with the necessity for reading, is more likely than not to do badly. The external evaluation of his teachers and fellow pupils, as well as his own observations of his performance, all provide proof to the child of how right he was in the first place! The possession of a particular concept of self tends to produce behaviour that corroborates the self-concept with which the behaviour originated (p.669-70).

Perhaps, in this explanation, Combs was referring to monitoring of a metacognitive nature when he included the child's observations of his performance as critical to the development of self-concept as reader.

Athey (1982), as well, has posited that affective variables may be incorporated under the rubric of metacognitive monitoring and that affective responses taking place during the course of these activities may facilitate or inhibit reading performance.

Within the generally accepted information-processing paradigm of learning to read, the effect that the children's information regarding their perception of their competencies has received relatively little attention.

Consequently, in light of the importance of these variables and their interrelationships, this study attempted to explore the relationships among those facets of the grade six reader. Specifically, the present study investigated the relationships among the child's view of him/herself globally, perceptions held by the child of him/herself as a learner, perceptions of him/herself as a reader, the child's attitude toward reading, the child's knowledge of reading strategies and reading comprehension. As well, the study included genders as a variable and investigated the relationships among these variables and gender.

Hypotheses

The following null hypotheses were tested. If significant correlations were found at the .05 level of confidence between the variables, the null hypothesis was rejected.

1. The correlation between reading comprehension and perceptions of global self-worth will be zero.

2. The correlation between perceptions of scholastic competency and reading comprehension will be zero.

3. The correlation between reading comprehension and reading attitude will be zero.

4. The correlation between reading comprehension and knowledge of reading strategies will be zero.

5. The correlation between reading comprehension and perception of self as reader will be zero.

6. The correlation between gender and perceptions of global self-concept will be zero.

7. The correlation between gender and perceptions of scholastic competency will be zero.

8. The correlation between gender and reading attitude will be zero.

9. The correlation between gender and knowledge of reading strategies will be zero.

10. The correlation between gender and perception of self as reader will be zero.

11. The correlation between gender and reading comprehension will be zero.

12. The correlation between perceptions of scholastic competency and of global self-worth will be zero.

13. The correlation between perceptions of scholastic competency and reading attitude will be zero.

14. The correlation between perceptions of scholastic competency and knowledge of reading strategies will be zero.

15. The correlation between perceptions of scholastic competency and perceptions of self as reader will be zero.

Methodology

The purpose of this investigation was to ascertain whether or not there were significant statistical relationships among reading comprehension, global self-concept, scholastic competence, perception of self as a reader, knowledge of reading strategies and reading attitude, as measured by standardized instruments and gender.

Three tests were used in this study; the Gates-MacGinitie Reading Test, the Thomas Attitude and Awareness Inventory (1984), and the Self-Perception Profile for Children (1985).

The Gates-MacGinitie Reading Tests are a series of tests designed to measure group and individual achievement from Kindergarten through Grade twelve. Form D, suitable for Grade six, was administered according to the procedure outlined in the examiner's manual.

The Thomas Reading Attitude and Awareness Inventory consists of 3 sections, each sampling a different construct or category of behaviour:

1. attitude toward reading
2. view of reading task and strategies necessary for understanding
3. view of self as a reader.

The Thomas Inventory was developed on the premise that subjects are more likely to communicate orally than in writing and would thereby, provide a greater quantity of more sensitive data than could be obtained from a written questionnaire. Using the Thomas Inventory, subjects may be encouraged with prompts or wait-time, and the information acquired may be more personal and honest in a face to face meeting.

Section A, Attitude toward Reading, asked 12 questions to determine how the reader responds to reading and the intensity of that response. A score of 1 was given for a positive response and a score of 0 (zero) was given for a negative response.

Section B, Awareness of Reading task and Strategies, asks the reader to report on her/his knowledge of the reading process and the strategies used in reading. Section B contained 11 questions. A score of 1 (one) was given if the response

referred to meaning in text or a strategy for obtaining meaning. A 0 (zero) score was given if the response indicated that the subject was unaware of those strategies.

Section C. View of Self as a reader, asked 4 questions that required the subject to evaluate his/her own reading skills. This section was scored on the basis of a realistic versus unrealistic assessment of the reading skills, by reference to the subject's percentile score on the Gates MacGinite. A fifth question, "Is it important for you to be a good reader?" was added in an effort to elicit whether children valued reading.

The Total Inventory score established a numerical representation of the three separate categories of knowledge and attitudes held by the reader.

Reliability of .94 of the Thomas Reading Attitude and Awareness Inventory was determined by the split-half method as a measure of internal consistency. Validity was established through extensive collaboration with a panel of judges, questionnaires to experts in the field of reading and pilot studies (Thomas, 1984, p. 4).

The Self-Perception Profile for Children (revision of the Perceived Competence Scale for Children) is a scale devised to tap children's perceptions of themselves. The profile was developed to examine the differences in the individuals' scores across five different domains in an effort to provide a rich and accurate picture of the child's self-concept. The six separate subscales are:

1. Scholastic Competence
2. Social Acceptance
3. Athletic Competence
4. Physical Appearance

5. Behavioral Conduct
6. Global Self-Worth

For the purposes of this investigation, only the subscales for scholastic competence and global self-worth were used.

1. Scholastic Competence - taps the child's perception of his/her competence within the realm of scholastic performance.

2. Global Self-Worth - taps the degree to which the child likes oneself as a person, is happy the way one is leading one's life, and is generally happy with the way one is.

(From p. 6, Susan Harter, Manual for the SELF-PERCEPTION PROFILE FOR CHILDREN, University of Denver, 1985)

Each of the two subscales used contains six items, constituting a total of 36 items. Each item was scored on a scale of 1 to 4, where a score of 1 indicated low perceived competence and a score of 4 reflected high perceived competence.

Each child completes a questionnaire entitled WHAT I AM LIKE in a group setting. The means of the two subscales used are added to determine the child's profile.

The internal consistency reliabilities for the two subscales used are in Table 2.

TABLE 2		
	Scholastic Competence	Global Self-worth
Sample A	.80	.84
Sample B	.85	.80
Sample C	.82	.78
Sample D	.80	.78

(p.14,Harter, 1985)

These reliabilities were based on Cronbach's Alpha.

Setting

The sample population for this investigation was from four grade six classes at a large elementary school in Marystown, Newfoundland.

Grade six students were selected as the focus of this investigation since this age group were developmentally more capable of giving more accurate information regarding their feelings, and observations and perceptions of their own competencies as individuals and as readers.

According to Selman's model (1980) of interpersonal understanding (which focused primarily on perspective taking),

> A level 2 child (age 7-12) comes to appreciate that others also know how the self might be feeling. In I-Me-Other terminology, the "I" not only observes the "Me" of others but observes the "I" of others observing the "Me" of the self. That is, the "I" can observe other as both actor and object, and can observe that the actor component of the other is observing the self. This level, then, sets the stage for the looking glass self in that the child becomes aware that others are appraising the self (p. 304).

While there is incomplete agreement, there is a wealth of evidence that supports the idea that true self-awareness in the form of the "I's" ability to take the "Me" as an object of observation does not emerge until middle childhood.

The ability to make judgements about self-worth becomes apparent during middle childhood and the concept of a global self-worth appears to take on meaning during these years, as well. Harter (1983) claimed "one would expect stability in self-concept during the later elementary years to the extent that environmental demands, performance expectations and one's social comparison group are all relatively stable" (p. 282).

In light of this evidence, it is the goal of the present investigation to offer a more comprehensive explanation of the interplay among children's self-knowledge, metacognitive awareness and achievement in the specific domain of reading.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

Contemporary reading research trends have been influenced by advances made in several fields including physiology, psychology, linguistics, anthropology, social psychology, computer science as well as in education. The whole concept of the 'reading process', including comprehension, has been revamped drastically in the last decade, particularly.

One of the most influential forces in the reconceptualization of the reading/comprehension process was caused by a paradigm shift in the area of psychology. The decline of behaviourism, a theoretical approach of the 1940s - 60s which strove for precision in the formulation of observable skill hierarchies accompanied by instruction focused on text detail and drill, was followed by a cognitive orientation in the field of psychology.

The evolution of the transformational-generative linguistics theory by Chomsky (1957, 1959), the emergence of the field of psycholinguistics led by Miller (1965) and an increased appreciation of the human mind's information-processing ability pioneered by Bruner (1957) and Miller (1956), all greatly contributed to the manner in which language processing (including reading comprehension) was studied.

The actual attempt to construct models of human cognitive processes by computers was yet another great force in the redefinition of the reading process. The models from computer science opened the doors to describe many facets of the human

mind that had previously been unconsidered such as working memory, attention, encoding and retrieval of information through parallel, sequential and interactive processes. Studies in artificial intelligence, mental processes concerned with the representation of meaning and the structural and processing aspects of knowledge, all led to a new era in language research.

Language began to be studied in units longer than single sentences, a trend that eventually led to research in discourse structures, information integration, inferencing, cohesion devices and schema theory. Kamil (1984) summarized the shift: "Reading research is, and has been undergoing changes that seem similar to what Kuhn (1962) has termed a paradigm shift. The pressures for the changes have been:

1. an emphasis on the reader as an active information processor.

2. the development of comprehensive systems of discourse analysis that could be applied to reading (eg. Fredericksen 1975, Halliday & Hasan 1976, Kintsch 1974, Kintch & Van Dijk 1978, Thorndyke 1977).

3. an increased interdisciplinary interest in precisely translating research into practice (p. 39).

As a consequence, previous models of reading are being replaced by models that emphasize the critical significance of the cognitive, metacognitive and affective dimensions of reading.

With the emphasis now focused on the reader as a most involved processor of information, and not only of the information found in the text but that which the reader brings to the reading situation, it must be acknowledged that the information

about him/herself as a learner is a critical component of this processing. Athey (1982), however, has claimed that within the generally accepted information-processing paradigm of learning to read, relatively little emphasis has been placed on the affective/cognitive interdependence of the reading activity.

An individual faced with a task can mobilize his/her resources in various ways. The concept that a given trait may be employed in different ways and for different purposes at different levels of reading ability was first introduced by Holmes (1960) in his sub-strata theory of reading.

Athey (1985) used Hebb's (1949) notion of brain cell assemblies to provide a useful way of thinking about how incoming information is processed and stored in the substrata factors. Affective responses (she suggested the examples of SELF-CONCEPT and ANXIETY) are generated at the time of input and become an integral component to the assembly as cognitive, task-oriented responses.

> With more experience, the subsystems of brain-cell assemblies become facilitated by firing in phase. In this way, diverse appropriate subsets of information learned under different circumstances at different times, and hence stored in different parts of the brain, may be brought simultaneously into awareness when triggered by stimuli. The cognitive and the affective become merely different aspects of the complex of knowledge and attitudes that comprise the substrata factor (Singer & Ruddell, 1985, p. 549).

Reading as an Active Search for Meaning

The critical difference between the old and new view of reading is with the status of meaning. The passive-receptive view of reading, with the reader seen as "the empty vessel" (Miller 1977) has been replaced by the active-constructive theory

(Anderson and Pearson 1984), with the reader considered the "spontaneous apprentice" (Miller 1977), constructing meaning while proceeding through text.

Although the value of fluent decoding is still held, the active construction of meaning from text is emphasized "with decoding being a means to that goal rather than an end in itself" (Orasanu, 1986, p. 2). Previously, meaning was thought to exist within the text; now meaning is thought to be created by the reader based on the information given in the text and his/her existing knowledge about its active search for meaning, with the text viewed as a kind of blueprint for meaning, a set of clues that readers use as they build a model of what the text means (Collins, Brown & Larkin 1980).

To explain this reading process, Rumelhart (1977) developed an interactive model which emphasized flexible processing and multiple information sources, depending upon contextual circumstances. An interactive model, unlike the linear which passes information along in one direction only and does not permit the information contained in a higher stage to influence the processing of a lower stage, can account for several well-known occurrences during reading. Rumelhart's model contained information from syntactic, semantic, lexical and orthographic sources which converge upon a message center or pattern synthesizer. These sources provided input simultaneously and the pattern synthesizer must be able to accept these sources of information, hold the information, and redirect the information as needed.

Stanovich (1980) expanded this perspective to develop the interactive-compensatory model. A key concept of this model is that "a process at any level can

compensate for deficiencies at any other level" (p. 36). Stanovich's model is interactive in the sense that any stage, regardless of its position in the system, may communicate with any other stage, and it is compensatory in the sense that any reader may rely on better developed knowledge sources when particular, and usually more commonly used knowledge sources are temporarily weak.

The Crucial Role of Schema Theory

The emerging model of reading can be viewed then as asserting that comprehension is an extremely active process in which the reader constructs meaning from text cues, calling upon his/her repertoire of knowledge of language, text structure and its conventions and content concepts (Farr, Carey & Tone 1986). A theoretical framework called schema theory is currently seen as useful in explaining how human knowledge is structured and used. Either implicitly or explicitly, schema theory has been alluded to for years in the works of Horn (1937), Gray (1917) and Huey (1908). Sir Frederic Bartlett is usually acknowledged as the first psychologist to use the term in the sense that it is used today (Remembering, 1932). As the 'revolution' in the conception of how humans process information continued with the work of computer scientists, more detailed statements of schema theory began to emerge (Rumelhart, 1980; Schank & Abelson, 1977) and to be applied to entities like stories (Stein & Glenn, 1979; Mandler & Johnson, 1977; Rumelhart, 1975) and processes like reading (Adams & Collins, 1979; Anderson et al., 1978, 1977).

Rumelhart and Ortony (1977) call schemata or "the data structures for representing the generic concepts stored in memory" (p. 10), 'the' key units of the

comprehension process. Wilson and Anderson (1986) defined schemata as "abstract knowledge structures - structured in the sense that they indicate relations among constituent concepts yet abstract in the sense that one schema has the potential to cover a number of texts that differ in particulars" (p. 33).

Rumelhart (1984) contended that as well, "...embedded in these packets of knowledge in addition to the knowledge itself, is information about how this knowledge is to be used." (p. 2).

Comprehension, of course, is not in the message, but constructed during an interactive process between previously acquired knowledge and the content of what is read. Rumelhart (1984) posited:

> Perhaps the central function of schemata is (this) construction of an interpretation of an event, object or situation in the process of comprehension. In all of this, it is useful to think of a schema as a kind of informal, private, unarticulated theory about the nature of the events, objects or situations we face. The total set of schemata we have available for interpreting our world in a sense constitutes our private theory of the nature of reality. The total set of schemata instantiated at a particular moment in time constitutes our internal model of the situation we face at that moment in time or in the case of reading a text, a model of the situation depicted by the text (p. 3).

He continued:

> Therefore,the fundamental processes of comprehension are taken to be analogous with hypothesis testing, evaluation of goodness-of-fit, and parameter estimation. Thus, a reader of a text is presumably constantly evaluating hypothesis about the most plausible interpretation of the text. Readers are said to have understood the text when they are able to find a configuration of hypothesis (schemata) which offer a coherent account for the various aspects of the text (p. 3).

Both content (topical and structural) and process factors are involved in reading comprehension. Pearson (1984) claimed that these two factors are not

independent: "In fact, process factors may be but different facets of the same amalgam under consideration when content factors are discussed" (p. 3). He referred to:

> attention, encoding, inference and retrieval, as well as executive monitoring of these procedures (metacognitive processing - knowledge about the procedures of how they are proceeding) as being process factors necessary for comprehension to be realized (p. 3).

Schema and Comprehension

The importance of organized knowledge (schema) in the reading comprehension appear to be indisputable. As Adams and Bruce (1982) elaborated:

> To say that background knowledge is often used, or is useful, in comprehending a story (would be) is misleading. It suggests that a reader has the option of drawing on background knowledge to enhance the comprehension process, but that she/he might just as well do without such frills- as if there were a reading process separate from the drawing-on-background-knowledge process.
>
> In fact, reading comprehension involves the construction of ideas out of pre-existing concepts. A more correct statement of the role of background knowledge would be that comprehension is the use of prior knowledge to create new knowledge. Without prior knowledge, a complex object, such as a text, is not just difficult to interpret; strictly speaking it is meaningless (pp. 22-23).

This construction of comprehension is a process which usually proceeds so smoothly that we are not aware of the operation of our own schemata; the process of fitting information into a schema (i.e. the instantiation of slots, assigning of default values, arriving at inferences, etc.) in order to achieve a satisfactory account of a message, proceeds rather nonchalantly. The efficient reader is most often quite unaware of the 'hustle bustle' involved in such an active and interactive operation!

And so the 'extremely-active' process of comprehension - the 'hypothesis-testing', 'schema-evaluating' attempt to match the incoming information with the previously attained schemata begins. Inferencing , filling in of slots, assignment of default values etc., continues as the reader predicts what words should come next. Micro-propositions are recognized and processed to see how coherent they are - that is how each preceding "particle" of information relates to the newly presented.

Subconscious evaluation of whether selected schema are 'working' or 'fitting' is also happening. Are the predictions accurate? Minor adjustments of fit, as schemas 'quietly' do not 'exactly' fit the reader's background are handled while more obvious problems with fit elicit help from the reader. So that while reading seems to be a rather fluid and constant process, it is decidedly at a rate determined by the individual reader, his/her purpose for reading and how she/he perceives the text.

According to Thomas (1984), Rumelhart's definition of comprehension as the selection and verification of appropriate schemata to account for that which is to be understood, would appear to bridge the gap between schema theory in contemporary research and metacognition (p. 2).

Metacognition

Although the term metacognition is new, the concept is not. Metacognitive constructs have been described since the turn of the century. Huey (1908) defined reading as "thought getting and thought manipulating"; Thorndyke (1917) claimed that reading was 'reasoning'; Gray (1925) stated that reading is "a form of clear vigorous

thinking." Piaget (1926) is most often referred to as the instigator of metacognition (and when he isn't, Tulving (1973) is given the credit).

However, metacognition has been seen as an explicit topic of scholarly interest in psychology since the early 1970s. The resurgence of interest in the topics of reasoning, thinking and reflection has created a focus on the child's metacognitive status, that is "the knowledge and control the child has over his or her own thinking and learning activities, including reading" (Baker & Brown, 1984a, p. 353). The many labels for phenomena studied under this term for 'self-knowledge' include a feeling of knowing, comprehension monitoring, metamemory, memory knowledge, metacomprehension and knowledge of understanding.

Metacognition and Skill in Reading

According to Baker and Brown (1984b), metacognition, cognitive monitoring, and comprehension monitoring are hierarchically-related concepts. Comprehension monitoring is one type of cognitive monitoring, and cognitive monitoring is a component of metacognition.

Metacognition involves at least two separate components:

1. an awareness of what skills, strategies, and resources are needed to perform a task effectively.

2. the ability to use self-regulatory mechanisms to ensure the successful completion of the task, such as checking the outcome of any attempt to solve the problem, planning one's next move, evaluating the effectiveness of any attempted action, testing, and revising one's strategies for learning, and remediating any difficulties encountered by using compensatory strategies (Baker & Brown, 1984b, p. 22).

According to Baker, comprehension monitoring entails keeping track of the success with which one's attempts to comprehend text, is proceeding, ensuring that the process continues smoothly and taking remedial action if necessary (Baker, 1979).

It is important to realize that all the many schema 'activations' and 'evaluations' that occur during the process, do so at varying times and points throughout the reading process. If, at any point before or during the process, the predictions or inferences, that the reader has made, fail to render the "click of comprehension, but the clunk of failure to understand" (Anderson, 1980), the efficient reader begins to realize that comprehension 'seems' to be breaking down. Perhaps the first sign to readers is their awareness of attempting to understand the material (Markman 1981). But perhaps the problem is more noticeable - perhaps they notice that they do not have the necessary background for dealing with particular portions of the text (i.e. no schema available) or they might be becoming increasingly aware that the selected schemata is just not appropriate (perhaps slots are failing to be instantiated, etc.) There might be definite problems making the selected schemata fit because, although the correct schemata has been selected the author has not supplied sufficient clues (Flavell, 1981; Markman, 1981; Brown, 1980; Rumelhart, 1980; Woods, 1980; Eller, 1967).

In order to disambiguate, a definite and strategic plan will go into operation - should the reader decide to remediate she/he might decide to proceed as 'open-mindedly' as possible and hope for clarification at a later point in the passage. If

clarification is 'ahead', then it may be used to clear up the trouble spot. If advancement fails to yield the desired information, the reader may decide to return and re-read carefully through phrases and sentences for exact meaning. As Whimbey (1975) described, "he probes and analyzes phrases and sentences for their exact meaning; he tries to visualize obtuse descriptions; and through a series of approximations, deductions and corrections he translates scientific and technical terms into concrete examples" (p. 91).

The 'new concept' of reading appears to be very much based on knowledge, but not only the belief that a knowledge background (schemata) is required for the construction of meaning during reading in attempting to acquire or assimilate newly acquired knowledge, but also the self knowledge that is viewed as being an integral part of the efficient reader.

A forerunner of research in the area of metacognition, Ann L. Brown (1975) wrote of 3 forms of knowledge:

1. Knowing which deals with the development of a knowledge system, semantic memory which underlies all cognitive activity.

2. Knowing about knowing, which refers to 'metamemorial' processes (Flavell, 1971) or the introspective knowledge of the functioning of our own memory systems.

3. Knowing how to know which refers to the repertoire of strategies and skills we possess for deliberate activities (p. 110-111).

Vygotsky (1962) described phases in the development of knowledge, first its automatic unconscious acquisition, followed by gradual increases in active control over that knowledge. Brown (1980) claimed that this distinction was essentially the

separation between cognitive and metacognitive aspects of performance. Yussen et al. (1982) described the distinction as being "between engaging in some cognitive activity such as reading, remembering or solving a problem on the one hand, and having knowledge about what the process involves and/or what influences it, on the other" (p. 190).

Myers & Paris (1978) regarded metacognition:

> as a 'higher' level of thinking than task specific strategies because metacognitive knowledge constitutes transituational information about the parameters of learning and performance. Metacognitive knowledge serves an executive functioning of coordinating and directing the learner's thinking and behaviour (p. 680).

More specifically, McNeil (1992) has suggested that, "In reading, metacognition transcends cognition by enabling individuals not just to use particular strategies, but to select appropriate ones, that is, to be aware of the importance of these strategies and how to appraise them" (p. 55).

This executive functioning or monitoring is implicitly if not explicitly incorporated into several recent models of comprehension (e.g. Collins, Brown & Larkin, 1980; Rumelhart, 1980; Woods, 1980; Goodman, 1976).

Baker and Brown (1984a) wrote of this knowledge about knowledge in terms of the developing child:

> If the child is aware of what is needed to perform effectively, then it is possible for him or her to take steps to meet the demands of a learning situation more adequately. If, however, the child is not aware of his or her own limitations as a learner or the complexity of the task at hand, then the child can hardly be expected to take preventative actions in order to anticipate or recover from problems (pp. 353-354).

In summary, it appears that the three main types of metacognitive skills considered in reading research are: awareness and perceptions of the reading task, monitoring of progress, and knowledge and deployment of compensatory strategies.

Perception of Reading Task and Comprehension

What is the reader's perception of the task? A fundamental form of understanding is knowing that the primary goal of reading is to understand content. Novice and poor readers often experience great difficulty reading intelligently because their understanding of what reading means is only partially accurate.

It appears that younger and poorer readers have little awareness that they must attempt to make sense of text; they view reading as a decoding process rather than as a 'meaning-getting' activity (Garner & Kraus, 1980; Canney & Winograd, 1979; Myers & Paris, 1978; Johns & Ellis, 1976; Clay, 1973; Denny & Weintraub, 1966; Reid, 1966).

According to Baker and Brown (1984b):

> It follows that if children believe the purpose of reading is to say all the words correctly, then their processing should reflect this. Instead of organizing text into larger segments of meaning the children would process in a word-by-word manner and hence, would have difficulty in comprehending (p. 29).

Most research in print and reading awareness has dealt with younger children, however, reading awareness continues to develop beyond age seven. Nine- and ten-year-old children were asked the question "What is reading?" in a study by Johns (1974). Poor readers gave a vague or no response, while better readers viewed reading as a combination of learning words and understanding the meaning of text.

He also found a modest, but significant, correlation between the maturity of answers to the question and performance on the vocabulary and comprehension scales of the Gates - McGinite Test of Reading Achievement.

In a more comprehensive study, Johns and Ellis (1976) interviewed 1,655 students from grades one to eight and asked them the following questions: "What is reading?" "What do you do when you read?" and "If someone didn't know how to read, what would you tell him he would need to learn?" They found that only 15% of the students defined reading as constructing meaning and most of those responses were from students in grades seven and eight. In response to the second question, only 20% of the students indicated that they tried to create meaning as they read. Again, most of the appropriate responses came from students in junior high. In response to the third question, more than half the students emphasized word recognition or decoding as the fundamental skill to be acquired for reading.

In a re-analysis of the data, Johns (1984) confirmed that more than 80% of the students interviewed were confused about the nature of reading. The overwhelming majority of students at all grade levels regarded reading as classroom procedures that are nurtured by skills for recognizing and decoding words. Comprehension and thought getting were rarely mentioned by any except the oldest students.

Myers and Paris (1978) examined the knowledge that eight and twelve year-olds have about person, task, and strategy variables related to reading. The twelve year-olds understood the structure of text and various goals of reading better than did eight year-olds. Older children also knew more about using strategies to construct

meaning and to resolve comprehension failures. Eight year-olds often regarded reading as interpreting symbols and words while having incomplete ideas about the existence, value, or need to use strategies for constructing meaning (Paris & Jacobs, 1984).

Forrest and Waller (1979) asked third- and sixth-graders "Is there a difference between knowing what a word says and knowing what a word means?" Good readers in both grades gave more appropriate and complete answers.

Canney and Winograd (1979) studied second-, fourth-, sixth-, and eigth-grade childrens' conceptions of reading by using experimental manipulations as well as an interview technique. Subjects were presented with five passages which were intact or altered in ways defined as semantic, syntactic, lexical, or graphic. The children were asked if each type of passage could be read. They were also given an interview probing their conceptions of reading. Children in second-, fourth- and even less skilled sixth-grade readers focused on the decoding. The better readers in sixth-grade and all eight-graders noted that reading was a 'meaning-getting' activity. Most good readers found many of the altered passages to be unreadable while most poor readers thought the altered passages were readable . Most poor readers also decided that the purpose of reading was to sound out words, not to understand or make sense of them.

Thomas (1984) found significant differences between good and poor upper elementary readers' views of the reading task, of what strategies they felt were needed for reading proficiency and in the level of accuracy of their awareness of the

level of their reading comprehension. The poor group was much more focused on decoding while better reader group was more oriented towards constructing meaning.

Myers and Paris (1978) also found that poor readers seemed to be insensitive to the demands of reading for meaning. They interviewed second and sixth grade children to ascertain their metacognitive understanding of how the different variables (namely person, task and strategy - Flavell & Wellman, 1977) affected reading performance. Developmental differences were quite evident in childrens' understanding of purposes and strategies. It should be noted that some of the children who considered accurate decoding to be the primary goal of reading were twelve to thirteen years old (Garner & Kraus, 1980; Canney & Winograd, 1979).

In summary, it appeared that younger and less proficient readers tended to focus on reading as decoding rather than a meaning-getting process. Probably because they are not automatic in their word recognition and this task is occupying their attention and their view of what reading is, poorer readers missed the whole point of reading - namely understanding. They generally had little knowledge of what they did and did not understand.

During elementary school, students' concepts about the nature of reading appeared to become more refined, but according to Paris, Wasik and Turner (1991) "reading remains a mysterious activity for students who receive daily instruction" (p. 619).

The understanding of the task of reading is critical for monitoring and repairing comprehension. Children's knowledge about reading develops concurrently

with their understanding and control of strategies, and both these factors develop with increasing age and skill (Cross & Paris, 1988). If a child has not internalized that reading is a search for meaning, it is unlikely that miscomprehension will be detected and even less likely that the child will develop active strategies to rectify such errors.

Reading Strategies and Comprehension

Realizing that one has failed to understand is but one part of the strategy of comprehension monitoring. Markman (1981) suggested that one need not continually ask whether or not one understands - that often information about one's comprehension is a by-product of the active-comprehension process itself.

Flavell et al. (1981) argued that there are probably few conscious metacognitive experiences when comprehension is proceeding efficiently. Brown (1980) characterized the skilled reader as one operating with 'a lazy processor' proceeding on automatic pilot until a 'triggering event' alerted the reader to a comprehension failure. The reader then slowed down and allotted extra processing to the problem area in an attempt to clear up the comprehension failure.

Baker and Brown (1984a) vividly described this phenomenon:

> and in the process of disambiguation and clarification we enter a deliberate, planful, strategic state that is quite distinct from the automatic pilot state, where we are not actively at work on debugging activities. The debugging activities themselves occupy the lion's portion of our limited processing capacity, and the smooth flow of reading stops (p. 357).

Proficient readers use numerous and various strategies in order to ensure comprehension. One of the problems of nonstrategic readers is that they often proceed on 'automatic pilot' oblivious to comprehension difficulties (Duffy &

Roehler & Putnam, 1987). Paris and Myers (1981) compared the spontaneous comprehension monitoring of good and poor fourth-grade readers as they read aloud. Students read paragraphs that contained nonsense words and phrases and were prompted to underline anything in the text that did not make sense. Less than half the errors were detected, and poor readers were able to detect as many inconsistencies as good readers only when the passages were simplified. Garner and Kraus (1982) and Grabe and Mann (1984) also found that poor readers had difficulty identifying inconsistencies in text.

Ability to Detect Miscomprehension

Winograd and Johnston (1980) used passages describing a familiar event (i.e., a baseball game) to examine the likelihood that 6th graders would notice contextually inappropriate sentences. Though better readers were more likely to report the problem than poorer readers, the probability was quite low (a finding that typically occurs in research using an error detection paradigm.) Winograd and Johnston also found no significant increase in detection of inappropriate sentences when subjects took part in an orienting task which was designed to activate the relevant background knowledge.

Pace (1980), used a disruption technique and questioned kindergarteners about inconsistencies in short passages read to them. The children did not appear to have noticed anything unusual about the text. Pace (1980) in a later study showed that kindergartners could notice very evident errors, if warned in advance to be wary of them.

Garner (1980) introduced either difficult vocabulary items or contextual inconsistencies into passages and asked junior high students to rate the comprehensibility of the passages. Though the poor readers failed to mention the inconsistencies, they were apt to point out the difficult words. Although poor readers evaluated their understanding of individual words, they did not take remedial measures as often as did the better readers.

In general, these studies indicated that less proficient readers seemed to be employing such energy in decoding, that comprehension problems were rarely detected. This tendency to ignore word-level comprehension problems is not just a characteristic of immature readers (Anderson, 1979). Adults sometimes delay seeking outside help because of a strategic decision to avoid disrupting the smooth flow of reading. Only when the word is encountered several times or when it is clearly crucial to the passage does the mature reader decide that remedial action is necessary.

Dealing with Comprehension Failure

Metacognition not only involves knowing what one knows and does not know but also knowing what to do to remedy comprehension failure in order to increase learning. Researchers have focused on two different kinds of strategies: fix-up strategies to resolve comprehension failure and studying strategies to enhance storage and retrieval (where comprehension failure is not necessarily an issue).

When comprehension fails, the reader must make several important strategic decisions. First the reader must decide whether to take any remedial action, a

decision that depends largely on the purpose of reading (Alessi, Anderson & Goetz, 1979). If the reader decides to take some action, these are the options:

1. store the confusion in memory as a pending question in the hope that clarification will be forthcoming.
2. reread the text
3. look ahead in the text
4. consult another source

These have been labelled 'fix-up strategies' by Alessi et al (1979).

A great deal of research in the past twenty years has shown that young unskilled readers do not use strategies often or effectively without help (Brown, Bransford, Ferrara & Campione, 1983). Research on comprehension monitoring has clearly revealed both age and ability differences in the accuracy of children's comprehension monitoring. Baker and Brown (1984a) contended that one of the metacognitive skills children must acquire is the ability to accurately gauge their level of understanding:

> Readers are considered good comprehension monitors if they indicate that they are sure that their answers are correct when in fact they are or if they indicate that their answers are wrong when the answers are indeed incorrect. On the other hand, readers are considered poor comprehension monitors if there is a mismatch between their confidence ratings and the correctness of their answers (Baker & Brown, 1984a, p. 362).

Forrest and Waller (1979) report that older children and better readers were more successful at evaluating their performance on a comprehension test than younger and poorer readers (3rd and 6th graders were studied). The older and better readers also scored higher in the comprehension test and were more likely to adjust their

reading strategies in response to task instructions. A post-test questionnaire found that younger and poorer readers had less knowledge about comprehension and fix-up strategies. (These findings were quite similar to those of the Myers and Paris study done in 1978).

Wellman, Rysberg and Suttler (1980) and Brown, Campione and Barclay (1979) found developmental differences in childrens' ability to judge when they had studied a passage sufficiently well to be tested on the information.

Garner, in a number of studies, utilized the error detection paradigm, but with task and presentation adaptations. Using short passages, she asked upper elementary and middle school students to assist in editing passages and to rate them for comprehensibility. In one study (1980) some passages contained intrasentential informational inconsistencies; in a second study (1981) some passages contained similar inconsistencies while others contained non-meaning-changing polysyllabic words. Both studies yielded expected results, and the polysyllabic words were identified by poor comprehenders as interfering more with comprehension than were intrasentential inconsistencies. In a third study, Garner and Kraus (1982) found that poor comprehenders were unsuccessful at identifying any inconsistencies, good comprehenders were somewhat successful at finding intersentential inconsistencies and very successful with intrasentential inconsistencies.

Overall, these studies appear to suggest that being able to accurately reflect on one's level of understanding is a necessary reading skill. For many children, this task

is left to external agents such as teachers (Schallert & Kleiman, 1979) or too late, to tests.

Activation of Relevant Background Knowledge

Another learner characteristic that has received much attention in metacognitive research is the awareness and activation of relevant prior knowledge. A large body of recent studies demonstrated the crucial role of background knowledge in the mental processing of texts (Pearson, 1984; Lipson, 1983; Pearson, Hansen and Gordon, 1979).

According to schema theory, comprehension is a matter of activating or constructing a schema that provides a coherent explanation of the relations between the objects and events mentioned in discourse. The schemata provided by prior knowledge apparently guide readers to make inferences and elaborations while reading. Langer (1984) found that activating prior knowledge significantly improved comprehension. Research indicated that relating the text to prior knowledge is a more prevalent strategy among fluent than among less fluent readers (Garner, 1982; Sullivan, 1978; Olshavsky, 1977; Gibson and Levin, 1975; Bransford and Johnson, 1972). Even given equal levels of background, children differed in the extent to which they used it during comprehension (Spiro, 1979). Spiro (1980) found that poor readers did not usually draw upon background knowledge about a topic. Pearson and Gallagher (1983) reported that proficient readers demonstrated a more effective way of utilizing background knowledge than poor readers. Good readers had better vocabularies (both general and specific), drew more accurate inferences and

demonstrated better summarization skills. Bransford, Stein, Arbitman-Smith and Vye (1985) found that even when they ensured that less successful fifth-grade students had the background knowledge necessary to learn the information, they consistently failed to use this knowledge.

Poor readers do not seem consistently to appreciate that, using the analogy of Wilson and Anderson (1986), comprehending a story or text is like completing a jigsaw puzzle: all of the information must be used, the information must fit into place without forcing, all of the important slots must contain information, and the completed interpretation must make sense.

The Importance of Inferencing

Inferential elaboration is one of the most important functions of schema. The reader's schema allows the making of inferences that go beyond the literally stated information to complete the meaning of the text, thus, ensuring comprehension (Wilson and Anderson, 1986). Considerable research has shown that children have more difficulty answering inferential than literal comprehension questions (Raphael & Pearson 1985; Hansen & Pearson, 1983).

Hansen & Pearson (1983) trained skilled and less-skilled fourth grade readers (1) to be aware of the importance of making inferences (2) to utilize prior knowledge, and (3) to ask inferential questions. Poor readers benefitted from the training but the good readers did not.

Raphael & Pearson (1985) trained high-, average-, and low-reading sixth-graders in the question-answer relationship paradigm to investigate its effects on both

literal and inferential comprehension. Although questions with answers explicitly stated in the text were more easily answered than questions with answers implied, the training did increase students' inferential skills.

Forming a coherent representation requires drawing precise inferences, integrating inferences, and drawing such inferences is not something poor readers do routinely and spontaneously (Bransford, Stein, Nye, Franks, Auble, Merynski and Perfetto, 1982).

Perhaps Anderson and Pearson (1984), have summarized the situation:

> Firstly, poor readers are likely to have gaps in knowledge. Since what a person already knows is a principal determiner of what she can comprehend, the less she knows the less she can comprehend. Secondly poorer readers are likely to have an impoverished understanding of the relationships among the facts that they do know about a topic. Arbitrary information is a source of confusion. Thirdly, poorer readers are unlikely to make the inferences required to weave the information given in a text into a coherent representation (p. 286).

The Value of Context

Another metacognitive insight (strategy) is the knowledge that context can be used to figure out words one does not know. Young children who are just beginning to read tend not to think of this as an option (Myers and Paris 1978). Good readers were more likely to suggest using context than poor readers (Garner and Kraus 1980). However, even poor, more mature readers recognized the utility of the strategy (Ngandu, 1977; Sullivan, 1978; Paris and Myers, 1980).

The research indicated that better readers selected and capitalized on textual clues, including structure, expository and rhetorical techniques and transition devices

(Meyer, 1979; Brown and Smiley, 1978; 1977). The ability to grasp the organization of a text is also within the individual's prior knowledge of the world. If one does not have the relevant background knowledge, it may be difficult, if not impossible to detect the organization. Knowledge of story grammars for narrative text and knowledge of expository structures such as enumeration, compare/contrast, and hierarchial organization all contribute to the effectiveness of mapping and organizing text information (Calfee & Chambliss, 1987).

View of Self as Reader, Comprehension and Motivation to Engage in Reading

Learners possess perceptions and feelings about themselves as readers that affect their performance. Less skilled readers often experience failure which influences their perceptions about their abilities and their subsequent willingness to engage in reading tasks or to exert active effort to obtain meaning. Successful readers deal with failure in other ways - namely self-monitoring and reanalysis of the task at hand (Dweck and Licht, 1980). They realize that the text must make sense and that they are instrumental and capable of 'deciphering' meaning. As well, McNeil (1992) claimed that "children who perceive the importance of actively seeking and creating meaning from text before, during and after reading are more likely to enjoy reading than are students who see themselves controlled by the text" (p. 57).

The construct of 'concept of self as reader' was specifically mentioned in only one study conducted by Louise Thomas in 1984. While several other studies have purported to investigate this 'reader self,' they actually looked at the relationship between a global self-concept and reading achievement (i.e. McWatters, 1989; Deeds,

1981, and Vereen, 1980). Thomas (1984) considered the relationship between one's view of self as a reader and the resultant effect these schemas might have on the readers' employment of strategies to obtain meaning, and noted: "It seems singularly reasonable that the reader's awareness and control of the cognitive processes involved in reading must to some degree be polluted by feelings of competence or incompetence as a reader" (p. 8). Thomas investigated the relationship between 100 sixth grade students' performance on a reading comprehension test and view of self as a reader. She found a significant relationship existed between how good readers viewed their ability to read and their actual ability to read.

It would appear that the child's schema about his/herself as a capable reader would be an influence on his/her performance. More specific investigations of this particular facet of the self-concept would yield interesting information for educators.

Attitude and Reading Comprehension

The attitude which readers bring to a book and the attitudes which they derive from reading are intimately related both to the process of reading itself and to the personal qualities of the reader (Squire, 1969).

According to Good (1973) an attitude is a predisposition "to react specifically towards an object, situation, or value which is usually accompanied by feelings and emotions" (p. 49). And according to Smith (1990), a reading attitude is defined as a state of mind, accompanied by feelings and emotions, that makes reading more or less probable. An individual's attitude to reading is "dependent on perceptions of the

value of reading and on the level of satisfaction or pleasure derived from prior reading experiences" (Guthrie and Greaney, 1991, p.87).

Few if any researchers have questioned the belief that attitude is a potential contributor to or detractor from one's ability to comprehend what is read (Burns, Roe and Ross 1988; Parker and Paridis, 1986; Mathewson, 1985). Attitudes, along with interest, motivation, locus of control, self-concept, feelings and emotions are often included in what researchers in education refer to as affective concerns. It is these concerns or behaviours, Alexander and Filler (1976) noted, that are important to the reading process, because they provide the desire and will to learn. Of course, good comprehension competence is likely to lead to positive attitudes as well. An interdependence may exist between these variables.

Several leading authorities (Heilman, 1972; Bond and Tinker 1973; Harris and Sipay, 1985) have indicated that attitudes toward reading must be developed and maintained if reading habits are to be retained in later life. Dryden (1982) claimed that, perhaps, the single most crucial index of the kinds of readers that children will become is determined by their attitudes toward reading.

While educational professionals generally believe that the development of positive attitudes toward reading in the formative years will create individuals who are life-long readers, and despite "frequent testimonies to the importance of developing a positive attitude toward reading, relatively little research, (particularly when compared with research in the cognitive domain) has been conducted in this affective domain and the results have shown contradictory outcomes" (Cullinan, 1987).

Many unanswered questions concerning relationships between reading achievement and attitudes toward reading still exist despite the considerable research attention focused on the measurement of reading attitude (eg. Ewing & Johnstone, 1981; Lewis, 1979; Roettger, Szymczuk, & Millgard, 1979; Ashov & Fischbach, 1973; Estes, 1971). Of particular note is Parker and Paradis's (1986) comment that "the development or the change of attitudes for children as they proceeded through the elementary school grades has received little attention" (p. 313).

A child's attitude toward reading, many educators believe, is directly related to his or her achievement scores. Although relatively little empirical evidence exists about the relationship between attitude and reading, Teale (1983) stated, "It is widely accepted that a positive attitude contributes to achievement and should, therefore, be considered when assessing reading" (p. 3). How children feel about reading seems to be directly related to their success at reading. And numerous researchers have found positive correlations among students' attitudes toward reading and their achievement in reading (Asher, 1984; Fredericks, 1982; Lewis, 1980; Wigfield and Alexander and Filler, 1976).

Attitude Toward Reading and Reading Achievement

The relationship demonstrated between reading attitudes and achievement in a number of published research studies, appears to be inconsistent. Certain studies and their findings will be reviewed to illustrate this inconsistency.

Lewis (1979) studied the relationship between attitude toward reading and reading success. Subjects were 149 third, fourth, and fifth grade pupils. Their scores

from a reading attitude inventory were correlated with combined scores on the subtests of the Metropolitan Achievement Tests. The findings revealed a statistically significant relationship between the reading attitude inventory and scores from the achievement test.

Hall (1978) studied the relationship of reading attitude to achievement in fifth-grade children and found a significant difference between all levels of achievement, with high achievers having significantly more positive attitudes, and middle achievers having significantly more positive attitudes than low achievers. In other words, in this study achievement was related to reading attitudes. The results suggested that when achievement improved, attitude often improved, and when attitude improved, achievement often improved. Although the determination of which factor influenced the other was not made in the study (a cause/effect relationship was not established), it was clear that reading attitudes were closely related to achievement scores.

Kennedy and Halinski (1975) administered a seventy item Reading Attitude Inventory to 927 secondary students. Significant differences were obtained on scaled scores of positive and negative readers as selected by teachers. A level students scored significantly higher than B students, and B students scored significantly higher than students with lower grades. In this study there seemed to be a definite positive relationship between attitude and achievement.

Attitude toward reading and reading achievement were significantly correlated at the sixth-grade level, concluded Crews (1978) in a study investigating the attitudes toward reading of middle school students. Attitude toward reading and reading

achievement, however, were not significantly correlated at the seventh- and eighth-grade levels. Furthermore, Crews noted that sixth-grade students reported a significantly more positive attitude toward reading in terms of reading achievement than seventh- and eighth-grade students. White (1989) found a low but consistent positive relationship between students' attitude in reading and reading achievement. She studied 876 students from grades one to eight.

Another study concerned with attitudes and achievement in reading was conducted by Roettger, Szymczuk, and Millard (1979). They found that the correlation between attitude and achievement scores was significant, but low. They concluded that "contrary to the assumption that a positive attitude is essential to learning to read successfully, attitudes cannot be used as a predictor of academic achievement" (p. 140).

In contrast, a study by Foley, Honeker, and Crociata (1984) revealed that most of the sixty seventh- and eighth-grade participating students had a positive attitude toward reading, regardless of their achievement level. The research hypothesis of the study, that attitudes toward reading would vary significantly with achievement, was not substantiated by the results, which showed that most students had a positive attitude toward reading, regardless of their achievement level. Of the sixty participants, only five students revealed a negative attitude: one student in the low ability group, two in the middle ability group, and two in the high ability group.

At least one study was directed at the unanswered question of why some students had a good attitude toward reading despite difficulty with it, while other

students who read very well had little interest in reading. In 1980, Roettger conducted a study of elementary students who were selected because they contradicted the belief that students who read well have positive attitudes, while those who do not read well have negative attitudes. Roettger found that students had different expectations of reading. Students who scored high on the attitude assessment, but had low performance, viewed reading as a tool for survival. Low attitude, but high performance students saw reading as a means of gaining information to help them get good school grades. The commonly-held belief that the high achiever has a positive attitude toward reading may be erroneous. Alexander and Filler (1976) concluded that, although relationships are sometimes found between achievement and attitude, there is not always a positive correlation between high achievement and favourable attitudes. However, according to Saks (1981), classroom teachers often assume that children's attitude's toward reading have a high positive relationship with achievement, while little investigation has been done to actually verify this relationship. Therefore, he encouraged more investigation to be done to examine the "indeterminate relationships between reading achievement and attitude" (p. 16).

Davis (1978), after reviewing 110 research studies of student attitude toward reading also recommended a need for further research in this area. She noted a need for research that compares the attitudes of average readers with the attitudes of children who have reading difficulties and also compares the attitudes of average readers with those of high achievers.

The results of the studies reviewed pointed out the inconsistent relationship found in research studies between attitudes and achievement. Saks (1981) may have summarized the outcome when he noted that: "High achievers can have either high or low attitudes, and those with high attitudes have high or low achievement" (p. 15-16). Obviously, further research into the relationship between reading attitude and reading skill is necessary.

Self Concept

The study of self-concept represents one of the oldest areas of research in the social sciences. William James (1890) in writing Principles of Psychology, contrasted two fundamental aspects of self, the self as actor or subject, the 'I', and the self as an object of one's knowledge, the 'Me'. He 'created' an extremely rich and comprehensive description of an objective 'Me' which encompassed feelings, evaluations and attitudes. His was a forerunner of future conceptions of the self.

However, the self appears to have not been taken seriously during the following period when only the more tangible was considered worthy of scientific inquiry. And, predictably, education followed suit in disregarding the value of the self or self concept.

But during this time there were exceptions. Cooley (1902) was one of the first to indicate the importance of feedback or response from significant others as a major source of data about oneself. He proposed "the looking glass self" which arises out of symbolic interaction between an individual and his various primary groups.

Mead (1934) elaborated on James social self in a development of Cooley's theory and, thereby, produced a much more extensive theory of self. According to Burns (1979), Mead contended that "the self of any individual develops as a result of his relations to the processes of social activity and experience to other individuals within those processes" (p. 15).

Murphy (1947) presented the notion of a number of selves dynamically interrelated in the form of total organization.

Allport (1937) like James, focused on the interrelatedness of the self as both object and process. Although he used the term, 'proprium,' as opposed to self, he contributed greatly to an operationally-useful concept of a dynamic self.

Combs and Snygg, in their 1949 book, Individual Behaviour, influenced the reintroduction of the concept of self into both psychology and education. They claimed that all behaviour, without exception, is dependent upon the individual's personal frame of reference and that the basic drive of the individual is the maintenance and enhancement of the self (Purkey, 1970).

Prescott Lecky (1945) also contributed to the notion of self-consistency as a primary motivating force in human behaviour.

Diggory (1966) noted "the fact that the new self-psychologists (e.g., Allport, Murphy) were able to argue substantive matters of learning theory and motivation with the heirs of the behaviourists, made the latter pay attention and finally to agree that this might be something to the idea of self after all" (p. 57).

Carl Rogers (1969/65/59B/59A/51/47) considered self to be a phenomenological concept. He described the self as a social product arriving from interpersonal relationships and a need for consistency.

> As experiences occur in the life of an individual they are either symbolized, perceived and organized in some relationship to the self; ignored because there is no perceived relationship to the self structure; denied symbolization or given a distorted symbolization because the experience is inconsistent with the structure of the self (1951, p. 503).

He believed that there was a need for positive regard both from others and from oneself and that in every human be ,g there is a tendency towards self-actualization and growth as long as it is permitted by the environment. His general approach soon became known as Self-Theory.

In Kelly's (1955) formulation, the self was proposed to be hierarchically organized into core constructs (those by which a person maintains identity and existence) and peripheral constructs that can be altered without serious modifications of the core structure. These self-constructs served to organize and guide behaviour.

Current Self-Theory

Recent (adult) information-processing models have also been brought to bear on the construct of self, just as on reading. Sarbin (1962) considered the self as a cognitive structure or influence which is empirically derived; as with many cognitive structures around which behaviour is organized, he posited that the self undergoes progressive change as the result of experience.

Markus (1977) proposed that attempts to organize, summarize, or explain one's behaviour will result in the formation of cognitive structures about the self,

which she termed SELF-SCHEMATA. "Self-schemata are cognitive generalizations about the self, derived from past experiences, that organize and guide the processing of self-related information contained in the individual's social experience" (p. 64).

Her experimental paradigm allowed her to distinguish between adults with strong self-schemata and those she labelled, 'aschematics,' - people for whom a given dimension is not particulary relevant to their self-concept. She has demonstrated that those with well-articulated self-schemata for a particular trait or dimension can more readily process information about the self, retrieve behavioral evidence, predict their future behaviour, resist counter-schematic information about the self and evaluate the relevance of new information, all with regard to that dimension.

Lynch (1981) viewed self-concept as a set of rules for processing information that in turn regulated behaviour. He suggested that there are several general developmental shifts that occur during the periods of early and middle childhood. He particulary focused attention to the AFFECTIVE consequences for the child when rules about the self are not validated (for example, anxiety, frustration, etc.) which may lead to changes in self-concept.

As Hansford and Hattie (1982) claimed "The literature on self has now reached gigantic proportions and one may be inclined to describe it as a somewhat ill-disciplined field" (p. 123). And Lynch (1981) concurred:

> Self-concept has generally been treated by psychologists as an affective variable that has implications for their own personal personality theory but not as a variable that has a theoretical formulation of its own. As a result there are many singular and overly simplistic notions about self-concept but no unified theory that may be called a theoretical formulation of self-concept or of self-concept development (p. 119).

Also, Marsh, Smith, Barnes and Butler (1983) have noted, "There are interesting peculiarities about research in this area (of self-concept), one being that, unlike other areas of research, the study of self-concept has not occurred within a particular discipline" (p. 772). They maintained that much of the research in self-concept actually emphasized other theoretical constructs and that an interest in self-concept comes from an assumed relevance to these other constructs. It also appeared that many of these studies lack either a theoretical basis for the study of self-concept or methodological measurement sophistication.

Byrne (1984) contended "that self-concept is considered a critical variable in education and educational research is clearly evidenced by the plethora of studies concerned with aspects of self-concept in a variety of education settings and for a diversity of students" (p. 427). She also asserted that: "An important prerequisite to the valid use of self-concept in educational research is a thorough understanding of the construct itself" (p. 427).

Reviews of self-concept research (Burns, 1979; Wylie 1979, 1974; Shavelson, Hubner & Stanton, 1976; Welles & Marwell, 1976) emphasized the lack of theoretical basis in most studies, the poor quality of measurement instruments used to assess self-concept, methodological shortcomings and a general lack of consistent findings (other than the support of the null hypotheses).

Marsh et al. (1983) suggested that "self-concept like many other psychological constructs, suffers in that everybody knows what it is, and researchers do not feel compelled to provide any theoretical definition of what they are measuring" (p. 772).

But in very general terms, self-concept is our perception of ourselves; in specific terms, it is our attitudes, feelings, and knowledge about our abilities, skill, appearance, and social acceptability (Byrne, 1984; Labenne & Greene, 1969; Jersild, 1965).

Self-Concept and Developmental Implications

For the most part, theorists who have described the self as a theory or cognitive construction have not included a developmental perspective. According to Harter (1983) the implications of how the child's changing cognitive structures might alter the very fabric of the self-theory have not been dealt with.

> During the concrete operational period, the emergence of logical thinking should produce qualitative changes in the nature of the child's self-theory. The child's ability to hierarchically classify, and the penchant for logically organizing, the concrete events, objects, and people in one's life may also be extended to attempts to define the attributes of the self. Thus, the child would be expected to consolidate and verify certain contents of the self, primarily one's concrete, observable characteristics. Attributes in the self-theory would also show some hierarchial organization, for example, "I'm smart (higher-order trait) because I'm good at reading, spelling and math." (lower order behavioral characteristics). We would expect the child of this stage to proceed inductively, however, piecing together bits of data from experience in order to construct a puzzle of the self.
>
> ... newfound perspective-taking skills also equip the concrete-operational child with the ability to imagine what other people are thinking, and in particular what they are thinking of him or her. Therefore, the child can begin to construct rudimentary "generalized other" (Mead, 1934) or in Cooley's (1902) terms, a "self-idea." All three components of this self-idea would appear to emerge during the period of concrete operations: the imagination of how one appears to others, how they judge or evaluate that appearance, and an affective reaction or "self-feeling" such as pride or embarrassment (pp. 294-295).

The few studies attempting to document age changes in children's self-descriptions have been relatively recent (McGuire, 1981; McGuire & McGuire, 1980; Rosenburg, 1979; Bannister & Agnew, 1977; Montemayor & Eisen, 1977; McGuire & Padawer-Singer, 1976; Mullener & Laird, 1971).

Rosenberg (1979) has perhaps come closest to a thoughtful cognitive-developmental analysis of the child's changing self-theory between the ages of 10-18. Utilizing an open-ended interview technique, children were asked a series of questions about what the person who knows them best knows that others don't, questions on points of pride and shame, on how they were different from other children they know, as well as the same as, and what kind of person they would like to be when they grow up.

Across Rosenberg's questions there is evidence for the following developmental trends:

a) that younger children direct their gaze 'outward' toward the observable

b) they tend to respond in terms of a social exterior

c) with development comes the emergence and increasing use of dispositions and traits to define the self.

Rosenburg cites Murphy (1947) in this regard: "The vocabulary of the self becomes less and less sensory ... The child forms general ideas of himself. In short, the self becomes less and less a pure perceptual object, and more and more a conceptual trait system" (p. 505-506).

Across the few developmental studies that exist, (for example, Bannister & Agnew, 1977) there is general support for a gradual progression from self-descriptions based on concrete, observable characteristics such as physical attributes, material possessions, behaviours, and preferences to trait-like constructs, and eventually to more abstract self-definitions based on psychological processes such as inner thoughts, emotions and attitudes, and motives (Harter, 1983).

Other investigators have emphasized that, within such broad categories of self-description, there is a developmental shift from all-or-none thinking to a more differentiated picture of the self. For example, when trait labels such as 'smart' and 'dumb' first become available to the child, he or she describes the self as all smart or all dumb (Harter, 1977, 1982a).

This developmental phenomenon has been more systematically documented with regard to children's understanding of how emotional labels are applied to the self (Harter, 1982a). Harter (1983) contended that: "the gradual/nature of various developmental trends suggests that the capacity for self-awareness and self-evaluation unfolds during the period of concrete operations and into formal operations" (p. 303). She continued that "there is a dearth of evidence bearing on how such cognitive developmental, skills as perspective-taking, collaborate with input from the social environment to form one's self-definition, as well as one's capacity for self-observation and self-evaluation" (p. 305).

Global Self-Concept versus A Differentiated Evaluation of the Self

Historically, self-concept research has emphasized a general, overall, or total self-concept and specific facets such as academic self-concept have been relegated to a minor role (West & Fish, 1973; Marsh, 1987). Although there appeared to be wide acceptance of this definition among self-theorists, a review of the literature failed to reveal a clear, concise and universally operational definition of self-concept (Hansford & Hattie, 1982; Wylie, 1979, 1974; Wells & Marwell, 1976; West & Fish, 1973; Labenne & Green, 1969).

Byrne (1984) reviewed and categorized four theoretical models of self-concept found in literature:

1. The nomothetic position (eg. Soares 1983) where self-concept is perceived to be a unidimensional construct. Studies that establish self-concept as a unitary phenomenon are still present in the literature (Rosenberg, 1965; Rosenberg & Simmons, 1973) although fewer.

2. The hierarchial model, a theoretical perspective originally proposed by Shavelson and his colleagues (Shavelson et al., 1976; Shavelson & Stuart, 1981) and recently partially supported by Byrne (1982) and Shavelson and Bolus (1982). It posited that the multiple facets of self-concept may be ranked in a hierarchial formation. At the base of the hierarchy are the situation-specific self-concepts while at the apex is General Self-Concept. It is argued that General Self-Concept is the most stable facet with exhibited decreasing stability upon descending the hierarchy (Byrne, 1984).

3. The taxonomic model of self-concept which supported the notion that the self-concept is structured like a series of several highly specific factors. These specific facets of self-concept may be relatively independent of each other. Several studies have established self-concept within the taxonomic framework (Lillemyr, 1983; Marx & Winne, 1980; Soares & Soares, 1983; Strang, Smith & Rogers, 1978; Winne, Marx & Taylor, 1977; Winne, Woodlands & Wong, 1982).

4. The compensatory model which supported the notion of a general facet of self-concept (like the hierarchial and taxonomic). However the compensatory model suggested that the specific facets are inversely related rather than proportionally or independently so. Accordingly, lower status on one specific facet of self-concept might be compensated by higher status on another specific facet of self-concept (Winne & Marx, 1981). Other investigators have obtained similar findings based on studies of exceptional children (Milgrim & Milgrim, 1976; Ross & Parker, 1980; Strang et al., 1978; Winne et al., 1982).

In their review of several major theoretical perspectives of self-concept, Winne & Marx (1981) found consensus pertaining to three aspects:

1. that interaction with significant others strongly influences the development of one's self-concept

2. that self-concept comprises at least three and sometimes four differentiable facets corresponding to how individuals view themselves in specific situations (typically those include academic, social, physical, and sometimes emotional dimensions)

3. that the relationship between self-concept and other external variables is nonrecursive.

One major disagreement that Winne & Marx found concerned the structure of the within-network relations with respect to a stable general facet of self-concept and the more specific facets of the construct.

Traditionally, theorists have concluded that self-concept is a unidimensional construct, best assessed by combining an individual's self-evaluations across items tapping a range of content. Items are given equal weight, and it is assumed that the total score reflects an individual's sense of self across the various areas of his/her life. Wylie (1974) was very critical of those test constructors who combine responses to items reflecting diverse content, and then conclude that the total score represents a general self-concept.

Rosenberg (1979) agreed:

> The critical drawback to this procedure is that it overlooks the extent to which the self-concept is a structure whose elements are arranged in a complex hierarchial order. Hence, simply to add up the parts in order to assess the whole is to ignore the fact that the global attitude is the product of an enormously complex synthesis of elements which goes on in the individual's phenomenal field. It is not simply the elements per se, but their relationship, weighting and combination that is responsible for the final outcome (p. 21).

The unidimensional view has been challenged by those who argue that such an approach marks important evaluative distinctions that individuals make about their competence in different domains in their life.

Mullener & Laird (1971) focused on assessing domain-specific components, suggesting that self-concept undergoes increasing differentiation with age. In a study of seventh-graders, high school seniors and college students, these investigators found increasing differentiation among five domains: achievement traits, intellectual skills, physical skills, interpersonal skills and sense of social responsibility. But no clear operationalization of global self-concept independent of the relationship among the five domains was employed.

Rosenberg (1979) maintained that we should retain both the notion of global self-concept and focus on the constituent parts of this whole. He contended that the two are not the same: "Both exist within the phenomenological field as separate and distinguishable entities, and each can and should be studied in its own right" (p. 20). He also claimed that the failure to recognize this point has led to a number of misleading inferences in the literature. "The assessment of one's academic ability and

the view of one's general self-worth are two separate attitudes whose relationship must be investigated, not assumed" (p. 21).

Proponents of the multi-dimensional perspective have proposed models and adopted measurement strategies that identify the particular domains of self-evaluation, assessing each separately (Harter, 1985b; Shavelson, Hubner, & Stanton, 1976; Mulliner & Laird, 1971). Such an approach has provided a profile of self-evaluations across those domains identified by a given investigator.

Harter (1983) asserted that "the individual's inability to reconstruct the hierarchy upon which a self-esteem judgement is based should not hinder us from assessing its phenomenological expression as a feeling of general, overall self-worth" (1983, p. 327).

Harter (1989) used the term global self-worth to describe, "the overall value that one places on the self as a person, in contrast to domain specific evaluations of one's competence or adequacy" (p. 67). Her (1989) model of self-concept represented an integration of the two approaches, i.e., "... to consider the multidimensional nature of self-evaluative judgements as well as the individual's overall sense of self-worth" (p. 69). She contended that global self-worth is assessed not by combining domain-specific judgements but by asking an independent set of questions that tap the construct of self-worth directly.

> It is critical to appreciate the fact that global self-worth is a construct, in and of itself, namely an overall judgement about one's worth as a person...
>
> ... By conceptually and empirically separating domain specific judgments of competence or adequacy from the more global judgement

> of one's worth as a person, we are in a position to determine the relationship that specific competencies bear to global self-worth (p. 69).

Harter & Pike (1984) demonstrated that four- to seven-year olds can make reliable judgments about the following four domains: cognitive competence, physical competence, social acceptance, and behavioral conduct. These four dimensions were found to be meaningful to young children, yet their judgments across the domains were not yet clearly differentiated. Harter believed that children of this age are incapable of making judgments about their self-worth (i.e., conscious, verbalizable concepts of one's worth as a person). She suggested that it is not until middle childhood that one is able to make meaningful and reliable judgments about this global construct. This finding is consistent with the evidence on children's emerging cognitive abilities to form concepts.

Recently, Haltiwanger & Harter (1988) have proposed that young children 'exude' a sense of overall self-worth as manifested in certain behaviours. They conclude that although they do possess a sense of self-worth, they are, at this stage unable to verbalize their concepts of their self-worth in self-report measures.

It appears that during middle childhood, the structure of the self-concept changes. More domains are differentiated, and the ability to make judgments about self-worth emerges. Factoring procedures applied to the Self-Perception Profile for Children (Harter 1985a) revealed that children between the ages of eight and twelve clearly differentiated the five domains included on this instrument: scholastic performance, peer social acceptance, behavioral conduct, and physical appearance. In

addition to these emerging discriminations, children's responses to items asking about their global self-worth indicated that this concept takes on meaning in middle childhood (Harter, 1988).

The Hierarchial Model of Self-Concept

In an extensive review of literature, Shavelson et al (1976) developed a model for self-concept that incorporated aspects from most theoretical positions. They concluded that at least seven characteristics can be attributed to self-concept.

According to Shavelson's (Shavelson & Bolus, 1982; Shavelson, Hubner & Stanton, 1976) definition, self-concept is an individual's perception of self. It is formed through experience with the environment, interactions with significant others, and attributions of one's own behaviour. The organization of self-concept is multi-faceted and hierarchial, with perceptions moving from inferences about self in sub-areas (e.g., self-concept in academic areas), to broader areas (e.g., academic and non-academic self-concept), and finally to general self-concept. Shavelson hypothesized that this organization becomes increasingly multi-faceted as an individual approaches adulthood and will depend on the particular category system developed by an individual and shared by a group. He proposed that self-concept is both descriptive and evaluative.

Shavelson and Bolus (1982) listed seven critical features of the construct:

1. It is organized or structured, in that people categorize the vast amount of information they have about themselves and relate the categories to one another.

2. It is multifaceted, and the particular facets reflect the category system adopted by a particular individual and/or shared by the group.

3. It is hierarchial, with perceptions of behaviour at the base moving to inferences about self in academic and non academic areas and then to inferences about self in general.

4. General self-concept is stable but as one descends the hierarchy self-concept becomes increasingly situation specific and as a consequence less stable.

5. Self-concept becomes increasingly multi-faceted as the individual develops from infancy to adulthood.

6. It has both a descriptive and an evaluative dimension such that individuals may describe themselves (I am happy) and evaluate themselves (e.g., I do well in school)

7. It can be differentiated from other constructs such as academic achievement (p. 3).

Shavelson, Hubner, & Stanton (1976) presented general self-concept at the apex of their multi-faceted, hierarchial construct. General self-concept was divided into academic and non-academic self-concepts. According to this model self-concepts in particular academic area (e.g., reading, math, etc.) combined to form a higher order academic self-concept. They posited that different academic self-concepts would be substantially correlated and could be incorporated into a single facet of academic self-concept.

Using grade-two and grade-five Australian students as subjects, Marsh and Shavelson (1985) gathered responses to the (SDQ) Self Description Instrument to test Shavelson's (1976) model. Although their findings supported the model, they also discovered that the hierarchy proved to be much more complicated than originally anticipated. This led to the 1988 revision of the much more clearly defined

Marsh/Shavelson model. Thus, academic self-concept was found to comprise at least two higher-order academic facets (verbal and math).

In research conducted with late-adolescents, Marsh and Shavelson (1985) found that verbal and mathematical self-concepts were nearly uncorrelated and did not combine with school self-concept to form a single, second-order academic factor.

In support of the construct validity of a multi-faceted self-concept, other researchers have found:

a. Academic achievement to be more highly correlated with academic self-concept than with nonacademic and general self-concepts (Byrne, 1984).

b. Achievement in particular content areas to be more highly correlated with self-concepts in the matching content areas (Marsh, 1986b).

Marsh (1986a/b) proposed the Internal/External Frame of Reference Model to describe why verbal and math self-concepts are so distinct from each other and so content specific in their relations to verbal and math achievements.

Marsh, Byrne, & Shavelson, (1988) summarized results of studies conducted on the Marsh (1986b) Internal/External Frame of Reference Model and found they provided strong support for the multi-dimensionality of self-concept and the content specificity of general, verbal, math, and school self-concepts. In particular, the path-analytic results suggested that:

a. general self-concept is unaffected by verbal, math, or school achievements.

b. only verbal achievement has a positive influence on verbal self-concept.

c. only school achievement has a positive influence on school self-concept.

According to Marsh et al. (1988), the existing research has suggested that general academic self-concept, no matter how it is defined, cannot adequately reflect the diversity of specific academic facets.

They concluded that, at this point, it is inappropriate to infer academic self-concept and recommended that academic self-concept research emphasize multiple specific facets rather than a single general facet of academic self-concept.

Global Self-Concept and Academic Achievement

Although it is now widely recognized that self-concept is a multi-dimensional construct, a review of the literature showed that the relationship between self and performance/achievement measures most often studied a uni-dimensional self-concept construct and a generalized academic achievement (as opposed to achievement in a specific subject area).

Within the self-concept studies, one of the most consistent lines of inquiry is that regarding the possible link between the various measures of performance or achievement and the concept one has of oneself. Wylie (1979) has pointed out that many educators have unhesitatingly merely assumed that achievement and ability indices are strongly related to self evaluations of achievement and ability and to overall self-regard. However, Piers and Harris (1964), in their investigation of the correlates of self-concept in children collected data from students in grades 3, 6, and 10, found the correlation between self-concept and academic achievement to be positive but low. The relationship appeared to be the strongest at grade 6 (.32). This

value is comparable to the correlation of .36 reported by Coopersmith (1967) in his study of students in grades five and six. Mintz and Muller (1977) and Butcher (1968) also examined the relationship between these variables with elementary school students (grades three to six inclusive and grades four and six, respectively). Their results concurred with previous findings in demonstrating a positive but low correlation between self-concept and academic achievement. As well, Marx and Winne (1975) in their investigation of low socio-economic status, fifth- and sixth-grade children found academic self-concept to be positively but negligibly related to academic achievement.

It was interesting to note that Mintz and Muller (1977) suggested that the selection of inappropriate instruments may have led to such low correlations, while Butcher (1968) also suggested that the instruments used in his study were not totally adequate for the task.

In an extensive research study comprising three projects over a six-year investigation, Brookover and his associates (Brookover, Erickson, and Joiner, 1967; Brookover, LePere, Hamachek, Thomas and Erickson, 1965; Brookover, Paterson and Thomas, 1962) tracked students form seventh-grade through twelfth-grade in an effort to determine the relationship of students' self-concepts to their academic achievements. They reported that self-concept of ability (i.e. academic self-concept) is significantly and positively related to academic achievement. This finding was corroborated by Singh (1972) in his study of seventh-grade Newfoundland students. In 1969, Caplin studied s- -ly black children and children from intermediate grades in

two elementary schools. He found a significant positive relationship between self-concept and academic achievement.

Changes in Self-Concept of Ability and Academic Achievement

Campbell (1967) examined the relationship between self-concept and academic achievement of fourth-, fifth-, and sixth-grade students. Subsequent to his own study, and to a review of six doctoral dissertations and other research conducted in the 1950's and early 1960's, Campbell (1967) concluded that although findings appeared to conflict somewhat, the weight of the evidence suggested that self-concept appeared to influence academic achievement. Similarly, Brookover and his associates (1962, 1965, 1967) concluded from their studies that changes in students self-concept of ability were associated with parallel changes in academic achievement.

The overall conclusion from a review of these studies is that students hold certain perceptions or concepts about themselves and their abilities, which ultimately have a strong impact on their academic performance in school. Obviously, scholastic performance has a heavy influence on perceptions that students develop about themselves and their abilities.

Among researchers who have examined the effects of success and failure on an individuals' self-concept, there appeared to be general agreement that those who underachieve scholastically suffer losses in self-esteem (Purkey 1970).

Ames (1978) questioned children with high and low levels of self-concept to determine their reactions to success and failure achievement outcomes. The results of this study showed that for children with high self-concepts, experience of success

heightened their self-esteem; conversely, experience of failure had negative effects on their self-esteem. The findings with respect to the low self-concept children were reported as confused, and, thus, no definite conclusions were drawn.

Kifer (1975) argued that success/failure of and by itself is not sufficient. Rather he contended that it is the pattern of success/failure and the accumulation of experiences that affect an individual's self-concept. His longitudinal study of students from grades two through eight queried how school achievement performance and personality characteristics, including self-concept, were related over time and over a series of tasks. Kifer's findings revealed that successful achievement is antecedent to a positive self-concept. Furthermore, he found that the relationship became stronger and more powerful as success/failure became prolonged and as a consistent pattern of accomplishments emerged.

Scheirer and Kraut (1979) reviewed published studies and eighteen doctoral dissertations concerned with the impact of intervention programs on the self-concept and academic achievement of school children and found no evidence of a causal connection between self-concept and academic achievement.

In summary, it appeared that the weight of the research findings supported the relationship between a global self-esteem and achievement, although the direction of the relationship has not been studied as consistently. Questionable instrumentation and developmental issues all pose questions for further research.

Academic Self-concept and Specific Academic Achievement

Research conducted between the specific variables of scholastic competency and skill in reading were almost non-existent. The academic self-concept construct and reading achievement variables appeared in the literature and will be reviewed in this section.

Marx and Winne (1980) examined the relationship between academic achievement and the academic, social and physical dimensions of self-concept. They found that academic achievement and academic self-concept were positively related. Similar findings by Marsh, Parker and Smith (1983) also found a positive, albeit, low, correlation between academic self-concept and reading achievement. Like Shavelson and Bolus (1982) the investigators found reading achievement most highly correlated with self-concept in reading (.43). The explanation for the unexpected low correlation was thought to have resulted from a combination of the test difficulty, time limits of the test, and low reading ability of the students in the study.

Marsh, Parker and Smith (1983) attempted to validate the between-network relations of self-concept and academic achievement for three diverse samples of fifth- and sixth-grade students. They found each of the nonacademic self-concept scores to be virtually uncorrelated with each of the academic measures; each academic self-concept score was substantially correlated with academic achievement measures. In addition, the academic achievement measures were more highly correlated with the specific academic self-concept measure to which it was most logically related (eg. the correlation between reading and self-concept in reading).

Marsh, Smith, Barnes and Butler, (1983) used multi-trait multimethod analysis as part of a more intensive investigation that provided between-network findings concerning self-concept and academic achievement. Based on two samples of students in grades four, five, and six, their results replicated the findings of the study by Marsh, Parker and Smith (1983). Accordingly, for each of the two populations, academic achievement measures were uncorrelated with each of the non-academic measures and most highly correlated with the area-specific self-concept most logically linked to the particular academic achievement measure. Furthermore, these investigators suggested that, based on the results of this longitudinal study, changes in self-concept over time are also multidimensional and are specific to particular dimensions of self-concept. In other words, although self-concept was found to be relatively stable, changes that do take place are reliable and specific to particular facets of self-concept.

Byrne's (1984) review of correlational and experimental studies revealed a positive correlation between self-concept and academic achievement across a variety of populations. She found that the results from the multi-trait multimethod analysis and equation modelling studies demonstrated that both global self-concept and academic self-concept can be measured independently from academic achievement. In addition, she concluded, area specific self-concepts, such as self-concept of reading ability, can be distinguished from academic achievement.

Obviously more specific research into the relationship between childrens' perceptions of their abilities of school competency and their skill in reading would prove interesting and beneficial for educators.

Gender, Metacognitive Parameters of Reading Task and Reading Comprehension

A review of the literature failed to elicit any research conducted with regard to gender and perceptions and attitudes about the reading task, strategy knowledge and deployment and view of self as reader. Only the parameters of attitude toward, and perceptions of reading, appeared to have been investigated. Mazurkiewicz (1960) found that as boys moved through school they increasingly viewed reading as a feminine activity and reading achievement scores were higher for boys who considered reading to be a masculine activity. Stein and Smithells (1969) also found boys increasingly viewed reading as a feminine activity with grade twelve boys perceiving reading as more feminine than grade six and grade two boys. Shapiro (1990), in studying just primary aged children, found a significant grade by sex interaction which indicated that boys declined in their view of reading as a sex-role appropriate behaviour as they progressed through grades one and two. Whitfield and Whitfield (1982) studied 480 boys and found that boys' reading achievement scores decreased in direct proportion to increases in sex-role stereotyping.

Dwyer (1973) suggested that sex differences in relationship to reading achievement were based on one of four factors:

1. the differential rate or level of maturation
2. the negative treatment of the boys by female teachers

3. content of basal readers

4. the differential cultural expectations for the male role.

Dwyer posited that the demands of the educational process were not compatible with cultural expectations for the male sex-role and thus interfere with the acquisition of reading skills. Kagan (1964) suggested that sex-role standards could be a factor in school achievement when he discovered that the majority of grade two and three children in his study considered many school subjects, including books, to be feminine.

In a major cross-cultural investigation which included Canada, Denmark, England, Finland, Israel, Japan, and the United States (Downing et al., 1979), the most obvious negative changes in perceptions of sex-role appropriateness were found in the North American samples. In the North American samples boys increasingly viewed reading as a feminine activity as they moved up through the grades. The results suggested that an activity which produces a conflict with their masculine role is related to poorer performance.

Studies in the United States (Robinson & Weintraub, 1973), England and Wales (Whitehead et al., 1977), Scotland (Maxwell, 1977), Sweden (Flodin et al., 1982), Ireland (Greaney, 1980), and Singapore (Gopinathan, 1978) have indicated that girls tend to devote more time to reading. Time spent is generally considered to contribute to increases in reading comprehension, a phenomenon known in the reading literature as the "Matthew Effect" (Stanovich, 1986).

Females have generally been recognized, by reading experts, as being more interested in reading than males and as having a more positive attitude toward reading (Greaney & Hegarty, 1987; Chiu, 1984; Wallbrown, Levine & Engin, 1981; Arlin, 1976; Kennedy & Halinski, 1975; Ashov & Fischbach, 1973).

Crews (1978) studied middle school students and concluded that female students reported significantly more positive attitudes toward reading than male students. No significant correlations, however, were found between attitudes toward reading and reading achievement in terms of the sex of the student.

In a more recent study, Parker and Paradis (1986) studied 134 children in grades one through six. No significant differences were observed for attitude scores in grades one, two, and three. A significant difference, however, was observed for attitude scores in grades four, five, and six.

While White (1989), in studying 876 students grades one to eight, found that females had significantly better attitudes toward reading than males, she did not find any difference between reading achievement levels and gender. However, Alexander and Filler (1976) reviewed attitude differences between gender groups and recommended that teachers not assume girls have more positive attitudes than boys.

A study of 312 fifth- and sixth-grade students conducted by Wallbrown, Levine & Engin (1981) found that boys were more likely to perceive themselves as having difficulty in reading and acknowledge the existence of this problem in response to attitudinal-type questions. Girls perceived themselves as receiving more reinforcement from their friends, parents and teachers in their reading than boys did.

Girls also perceived themselves as valuing reading activity for their intrinsic worth as a source of information, learning, and emotional satisfaction to a greater degree than did boys. The study also indicated a substantial tendency for boys to become more emotionally upset or experience more unpleasant physical sensations or feelings when reading or thinking about reading.

Despite the research that has been conducted, concerns with regard to instruments used and developmental issues have allowed many questions concerning relationships among reading achievement, attitudes, perceptions about reading and gender to remain unanswered.

Gender and Scholastic Competency

Understanding children's achievement-related beliefs (eg. academic self-concepts, casual attributions etc.) is important because of the influence these beliefs can have on childrens' subsequent efforts and performances (Dweck & Elliot, 1983; Filson, 1984).

Researchers have reported sex differences in achievement related beliefs. Girls often enter intellectual achievement situations with lower expectations of success than do boys, and girls lower expectations are unrealistic in light of childrens' actual performance. (Dweck, Goetz & Strauss, 1980; Parsons, Ruble, Hodges & Small, 1976; Crandall, 1969).

Sex differences are also found in childrens' causal attributions. Girls are more likely than boys to attribute their failures to insufficient ability (Nicholls, 1979; Dweck et al. 1980; Phillips, 1984; Frey & Ruble, 1987), and are less likely than

boys to attribute their successes to high ability (Nicholls, 1984; Wolleat, Pedro, Becker, & Fennema, 1980).

Self-Concept and Motivation to Read Strategically

There appears to be little argument with the idea that one's self-perception plays a major role in influencing one's behaviour. As Garner (1992) attested, "There is still more. Learners do not engage strategies if they do not believe themselves to be capable of competing the task at hand... Learners' beliefs about their ability to perform a task are more potent than personal skill in determining their willingness to attack (and persevere at) that task" (p. 248).

Strategic readers regard themselves as competent in the classroom. Because they have multiple tactics available to monitor and improve comprehension, they know how to learn effectively rather than just 'trying' harder. Students who perceive themselves as academically successful are usually intrinsically motivated and confident in their own activities (Harter & Connell, 1984). Paris, Wasik, & Turner (1991) contended that :

> Research on strategic reading has focused almost exclusively on cognitive tactics for planning, monitoring, elaborating, and revising meaning constructed from reading. These text-processing strategies are, however, only some of the strategies that influence children's reading comprehension. There are also executive control strategies and tactics for managing time, attention, and anxiety. These tactics are motivational as well as cognitive because they mediate readers' investment of effort, perceptions of competence, and satisfaction with reading (p. 624).

Strategic reading develops over many years, initially nurtured by parents and others at home and later by teachers and classmates at school. Social assistance in learning to read enhances children's metacognition and motivation for reading. It serves as a

bridge or scaffold from other-regulated to self-regulated learning (Vygotsky, 1978). Fielding, Wilson, and Anderson (1986) interviewed avid second- and fifth-grade readers. They found that these children belonged to "communities of readers" that included peers, siblings, parents and teachers. Winograd and Paris (1989) claimed that "clearly, the enjoyment derived from belonging to a literate community is essential to developing proficient readers" (p. 33).

Covington (1987) as well, described students' emerging sense of self-worth as partly dependent on self-perceptions of competence in classroom settings. These positive views of ability and responsibility contrast sharply with the defensive or coping behaviours of students who avoid the troubling 'reading' situation.

The development of strategic reading is fostered by cognitive development, practice, and instruction and research in metacognition has illuminated how children acquire declarative, procedural, and conditional knowledge about strategies. However, the awareness of tactics for appraising and managing one's reading, does not guarantee that students will use these strategies spontaneously and effectively. As Winograd and Paris (1989) claimed, "Metacognition includes self-appraisal and self-measurement of affective as well as cognitive components of learning" (p. 32). The development of strategic reading is dependent upon personal motivation to select and apply persistently, strategies that are appropriate to the task.

Such motivation requires knowledge about the instrumental value of strategies, different purposes for reading, confidence in one's self-efficiency, and beliefs about the ability to control reading to achieve a desired goal (Paris et al, 1991).

As students learn to regulate their own reading and to use strategies for different purposes, they become independent learners who read with confidence and enjoyment. Paris (1991) contended tnat "Strategic reading contributes directly to lifelong education and personal satisfaction" (p. 635).

In light of the evidence presented here, it is hoped through this investigation a more comprehensive view of the interrelationships among grade six readers concepts of self, including the specific self-concept of reader, metacognitive awareness and reading comprehension will be revealed.

CHAPTER 3

METHODOLOGY

Subjects

A total of ninety subjects from four grade six classes in a large elementary school in Marystown participated in this investigation. Marystown is a sprawling town consisting of the smaller communities of Little Bay, Beau Bois, Creston South, Creston North and Marystown Proper. As well, children are bussed to this school from the communities of Jean de Baie, Spanish Room and Mooring Cove. There is great socio-economic diversity within these communities. With the recent opening of a new hospital and the development of the Cow Head Steel Fabrication Centre Facility, numerous specialists and their families have moved to the area and this socio-economic range would appear to have become even greater.

Ninety students, 45 male and 45 female, from four grade six classrooms at an elementary school in Marystown were randomly drawn from the population of grade six students. Each child was interviewed orally using the Thomas Inventory to determine their level of metacognitive awareness with respect to their attitudes and perceptions about the reading task, their knowledge of the reading task and reading strategies, and their perceptions of themselves as readers. Interviews were tape-recorded, transcribed and scored for meaningful answers.

The Harter Self-Perception Profile for Children was also then administered to each student in order to tap each childs' judgements of his/her competency in five different domains, including scholastic competence, social acceptance, physical

appearance and behavioural conduct, as well as a global perception of their worth or esteem as a person. Numerical scores were tabulated for each question in each domain. Scoring resulted in a total of six sub-scale means which defined a given child's profile.

Setting

The population for this investigation was from four grade six classes at an elementary school in Marystown, Newfoundland.

Grade six students were selected as the focus of this investigation as it was felt that this age group were developmentally more capable of giving more accurate information regarding their feelings, and observations and perceptions of their own competencies as individuals and as readers.

According to Selman's model (1980) of interpersonal understanding (which focused primarily on perspective taking),

> A level 2 child (age 7-12) comes to appreciate that others also know how the self might be feeling. In I-Me-Other terminology, the "I" not only observes the "Me" of others but observes the "I" of others observing the "Me" of the self. That is, the "I" can observe other as both actor and object, and can observe that the actor component of the other is observing the self. This level, then, sets the stage for the looking glass self in that the child becomes aware that others are appraising the self (p. 304).

While there is incomplete agreement, there is a wealth of evidence that supports the idea that true self-awareness in the form of the "I's" ability to take the "Me" as an object of observation does not emerge until middle childhood.

The ability to make judgements about self-worth becomes apparent during middle childhood and the concept of a global self-worth appears to take on meaning

during these years, as well. Harter (1983) claimed "one would expect stability in self-concept during the later elementary years to the extent that environmental demands, performance expectations and one's social comparison group are all relatively stable" (p. 282).

Materials

Three tests were used in this study; the Gates-MacGinitie Reading Test (Canadian Edition), the Thomas Attitude and Awareness Inventory (1984), and the Self-Perception Profile for Children (1985).

The Gates-MacGinitie Reading Tests are a series of tests designed to measure group and individual achievement from Kindergarten through Grade twelve. Form D, suitable for Grade six, was administered according to the procedure outlined in the examiner's manual.

The Thomas Reading Attitude and Awareness Inventory consists of 3 sections, each sampling a different construct or category of behaviour:

1. attitude toward reading
2. view of reading task and strategies necessary for understanding
3. view of self as a reader.

The Thomas Inventory was developed on the premise that subjects are more likely to communicate orally than in writing and would thereby, provide a greater quantity of more sensitive data than could be obtained from a written questionnaire. Using the Thomas Inventory, subjects may be encouraged with prompts or wait-time, and the information acquired may be more personal and honest in a face to face meeting.

Section A, Attitude toward Reading, asked 12 questions to determine how the reader responds to reading and the intensity of that response. A score of 1 was given for a positive response and a score of 0 (zero) was given for a negative response.

Section B, Awareness of Reading task and Strategies, asked the reader to report on her/his knowledge of the reading process and the strategies used in reading. Section B contained 11 questions. A score of 1 (one) was given if the response referred to meaning in text or a strategy for obtaining meaning. A 0 (zero) score was given if the response indicated that the subject was unaware of those strategies.

Section C, View of Self as a reader, asked 4 questions that required the subject to evaluate his/her own reading skills. This section was scored on the basis of a realistic versus unrealistic assessment of the reading skills, by reference to the subject's percentile score on the Gates MacGinite. A fifth question, "Is it important for you to be a good reader?" was added in an effort to elicit whether children valued reading.

The Total Inventory Score established a numerical representation of the three separate categories of knowledge and attitudes held by the reader.

Reliability of .94 of the Reading Attitude and Awareness Inventory was determined by the split-half method as a measure of internal consistency. Validity was established through extensive collaboration with a panel of judges, questionnaires to experts in the field of reading and pilot studies (Thomas, 1984, p. 4).

In administering the Inventory each student was asked to identify him/herself by name in the microphone and the interview began. Each session began with a couple of warm-up questions Thomas suggested:

1. What do you like best about school? Why?
2. Is there anything you don't like about school? Why?

We then proceeded through the interview as outlined in the Thomas Attitudes Awareness Inventory.

Thomas also outlined three allowable prompts. (Maximum two per question.)

1. Can you tell me anything else?
2. Could you think of anything more?
3. Positive requests for elaboration but not leading

Following the interview the investigator asked for the child's co-operation in not discussing the interview with his/her classmates, explaining that she wanted everyone's answers about reading to be their own.

The Self-Perception Profile for Children (revision of the Perceived Competence Scale for Children) is a scale devised to tap children's perceptions of themselves. The profile was developed to examine the differences in the individuals scores across five different domains in an effort to provide a rich and accurate picture of the child's self-concept. The two separate subscales considered in this study were:

1. Scholastic Competence
2. Global Self-Worth

1. Scholastic Competence - taps the child's perception of his/her competence within the realm of scholastic performance.

6. Global Self-Worth - taps the degree to which the child likes oneself as a person, is happy the way one is leading one's life, and is generally happy with the way one is.

(From p. 6, Susan Harter, Manual for the SELF-PERCEPTION PROFILE FOR CHILDREN, University of Denver, 1985)

Each of the subscales contains six items, constituting a total of 36 items. Each item was scored on a scale of 1 to 4, where a score of 1 indicated low perceived competence and a score of 4 reflected high perceived competence.

Each child completed a questionnaire entitled WHAT I AM LIKE in a group setting. The means of each subscale are added to determine the child's profile.

The internal consistency reliabilities for the two subscales studied are in Table 2.

TABLE 2

	Scholastic Competency	Global Self-Worth
Sample A	.80	.84
Sample B	.85	.80
Sample C	.82	.78
Sample D	.80	.78

(p. 14, Harter, 1985)

These reliabilities were based on Cronbach's Alpha.

Procedure

Subjects were initially screened through the administration of the Gates-MacGinite Reading Comprehension Test, Level D, Form 1-2, Canadian Edition.

The investigator visited each class explaining that she would be randomly selecting students from each class in order to ask them some questions regarding reading. It was essential to impress upon the children that their names would be randomly selected and that the interview did not constitute a test of any type.

Students were contacted individually and accompanied to an office on the same level as their classrooms, by the investigator. Upon arrival at the office, the investigator explained that she had a few questions to ask about reading and encouraged the child to answer as honestly and completely as possible. It was also necessary to ensure that the student understood that there were no right or wrong answers and that the interview had nothing to do with grades or report cards.

After completion of the 90 interviews using the Thomas Awareness Inventory, all of the Grade six children completed the Harter (1985) Self-Perception Profile for Children by filling out the questionnaire entitled WHAT I AM LIKE. This was done individually within the group setting.

Harter recommended that administrators of the survey allow discussion time with the students regarding their ideas about what a survey is and how in a survey there is no absolutely correct or incorrect answer. This recommendation was followed.

The investigation then asked each student to fill in the information requested at the top of the form (ie. name, boy/girl, birthday, class).

The subjects then were instructed how to correctly use the question format used in the survey. For sixth graders Harter recommended explaining a sample item.

The question format of the survey did not cause any problem, although, it was essential to make it clear that for any given item that the child needed to check only one box on either side of the sentence - that he/she must not check both sides. Monitoring while the children completed this survey was necessary.

Analysis of Data

The Thomas Reading Attitude and Awareness Inventory consists of three sections:

Section A, Attitude toward Reading, asks 12 questions to determine how the reader responds to reading and the intensity of that response. A score of 1 was given for a positive response and a score of 0 was given for a negative response. For the purposes of this study question four, which asked "Do you ask to go to the library at school?", was deleted. The children in this school were expected to use the school library regularly.

Section B, Awareness of Reading Task and Strategies, contained 11 questions which tapped the readers' knowledge of the reading process and the strategies used in reading. A score of 1 was given if the response referred to meaning in text or a strategy for obtaining meaning. A score of 0 was if the response indicated that the subject was unaware of those strategies. Question one was modified from "What do you do in reading group at school?" to "What do you do during reading class?". The children in this school associated reading "groups" with those arranged for poorer readers.

Section C, View of Self as Reader asked 4 questions regarding the students' view of themselves as readers. This section was scored on the basis of a realistic versus unrealistic assessment of the reading skills, by reference to the subjects percentile score on the Gates-MacGinite Reading Test. This section also had a fifth question added by the investigator. (ie. "Is it important for you to be a good reader?")

The Total Inventory score established a numerical representation of the three separate categories of knowledge and attitudes held by the reader.

Self-perception Profile for Children

This survey consisted of six items on six subscales constituting a total of 36 items. (An additional sample item is included for practice but not scored.) Items were scored either 4, 3, 2, or 1, where 4 represented the least adequate self-judgement.

Items within each subscale are counterbalanced such that three items are worded with the most adequate statement on the left and three items are worded with the most adequate statement on the right.

Scores from the child's protocol were transferred to a data coding sheet where all items for a given subscale were grouped together to facilitate the calculation of the mean for each subscale. Scoring resulted in a total of six subscale means which defined a given child's profile.

All answers were coded and analyzed using the SPSS-X package. The Pearson Product-Moment Test was used to determine correlations between the variables.

CHAPTER 4

RESULTS OF THE INVESTIGATION

Introduction

The purpose of this chapter is to analyze the data collected in the study to see if the questions and hypotheses proposed in Chapter I have been supported. Besides descriptive statistics which generated means, standard deviations, minimum and maximum scores for the three tests and individual test items, two statistical procedures have been applied to the raw scores collected. Regular correlation analyses, using the Pearson Product-Moment Method, were performed to examine the relationships among measures of self-concept, reading attitudes, reading achievement, and gender. Tables are used to report the findings as well. The data are then examined and interpreted for their significance.

The main purpose of this study was to investigate the relationships among reading comprehension, students' perceptions of themselves (both globally and scholastically), and metacognitive awareness, (specifically, view of reading task, knowledge of reading strategies and perceptions of self as a reader).

The raw scores obtained from 45 randomly chosen male students and 45 randomly chosen female students on tests measuring reading comprehension, reading attitude and awareness, and self perceived competencies were correlated using the Pearson Product-Moment Method.

Analysis of Hypotheses

The following are the findings of the statistical analysis of the data:

Hypothesis 1

The correlation between reading comprehension and global self-concept will be zero.

To test this hypothesis, a coefficient of .0593 was calculated, using the Pearson's Product-Moment correlation test and is reported in Table 1. There was a statistically insignificant relationship between sixth graders' overall sense of esteem and their ability in reading comprehension.

Hypothesis 2

The correlation between scholastic competency and reading comprehension will be zero.

A positive correlation of .4680 was computed between scholastic competency and reading comprehension. This was statistically significant at the .01 level and is reported in Table 1. There was a significant positive relationship between how sixth grade students view their competency in schoolwork and their level of reading comprehension.

Hypothesis 3

The correlation between reading comprehension and reading attitude will be zero.

A correlation coefficient of .5602 was computed. This was statistically significant at the .01 level and is reported in Table 1. Students' attitudes toward reading were positively related to their ability to comprehend.

Specific reading attitude questions correlated significantly with reading comprehension. Question one of the attitude section of the Thomas Inventory asked the question, "Do you enjoy reading?" The correlation coefficient between responses to this question and reading comprehension was .2180 which was significant at the .05 level. More skilled readers expressed more enjoyment of reading.

Question three of the attitude section of the Thomas Inventory asked whether the child was reading a book at home, for fun. The correlation coefficient between responses to this item and reading comprehension was .4301 which was significant at the .01 level. More highly skilled sixth grade readers were more likely to be reading a book at home for enjoyment than less skilled readers.

Question four of the attitude section of the Thomas Inventory asked whether the child used the public library. The correlation coefficient between responses to this item and reading comprehension was .2446 which was significant at the .05 level. Again more highly-skilled readers used the public library than less-skilled readers.

Question six of the attitude section of the Thomas Inventory asked whether the child usually finished books that he/she started reading. The correlation coefficient between responses to this item and reading comprehension was .3181 which was significant at the .01 level. Better readers were more likely to finish reading books that they had started reading.

Question seven of the attitude section of the Thomas Inventory asked the child to talk about the types of books that he/she enjoyed reading in his/her free time. The correlation coefficient between responses to this item and reading comprehension was .3092, which was significant at .01 level. Better readers often described numerous genre that they enjoyed, for example, science fiction, mystery, autobiographies etc., while poorer readers were more likely to refer to the number of pages in the book, (e.g., "I only choose books between 90 and 96 pages long") or case of 'reading' (e.g. "I look in encyclopedias at pictures"). It was also worthy of note, that approximately 80% of the female students mentioned the Babysitter Club Series as being their favorite type of book.

Question eight of the attitude section of the Thomas Inventory asked the child whether he/she liked to read aloud in class. The correlation coefficient between responses to this item and reading comprehension was .22, which was significant at the .05 level. Better readers enjoyed reading aloud in class while many poorer readers expressed fear and nervousness about reading aloud, (e.g., "It's not the same as reading to my mom - you're up in front of twenty-nine other students").

Question ten of the attitude section of the Thomas Inventory asked the child what they preferred to do in their free time - watching tv, reading, etc. The correlation coefficient between responses to this item and reading comprehension was .4056 which was statistically significant at the .01 level. Better readers were more likely to choose reading as their preference although many children (of all reading

comprehension levels) expressed their love of playing outdoors as the most preferable pastime.

Question eleven of the attitude section of the Thomas Inventory asked the child whether he/she would ever choose to read over watching television. The correlation coefficient between responses to this item and skill was .4237, which was significant at the .01 level. More highly skilled readers stated that they would choose to read over watching television, although several children spoke about videotaping good television programs in order to probably watch them later.

Hypothesis 4

The correlation between reading comprehension and knowledge of reading strategies will be zero.

Using the Pearson Product-Moment correlation test, a correlation coefficient of .6499 was computed between these two variables which was statistically significant at the .01 level and is reported in Table 1. Sixth graders' knowledge of reading strategies and their deployment was positively significantly related to their ability to comprehend.

Particular questions and responses measuring sixth graders' knowledge of the reading task and reading strategies were statistically significantly related to reading comprehension. Question one of the Thomas Inventory asked the child to describe what she/he does during reading class. The correlation coefficient between responses to this item and skill was .3055, which was significant at the .01 level. Better

comprehenders referred to thematic work, poetry, dramatic activities etc., while less skilled comprehenders basically told of "reading" readers and "doing" skillbooks.

Question three of the strategy knowledge section of the Thomas Inventory asked the child how he/she would handle not understanding a sentence or paragraph in a text he/she was reading. The correlation coefficient between responses to this item and reading comprehension was .3876 which was significant at the .01 level. Better readers mentioned strategies for actively "getting" meaning such as rereading or reading past trouble spots in search of meaning. Less skilled comprehenders generally said that they would ask someone, (i.e., Miss, Mom, etc.), for help, or just stop reading and look for easier books.

Question four of the strategy knowledge section of the Thomas Inventory asked the child whether he/she ever made up pictures in his/her head while reading. The correlation coefficient between responses to this item and skill was .2307 which was significant at the .05 level. Better readers answered emphatically that they always made pictures up to accompany the text they were reading. Fewer less skilled readers admitted using this strategy, with several acknowledging that they never imagined pictures while reading.

Question five of the strategy section asked the child how he/she knew when he/she understood what he/she was reading. The correlation coefficient between responses to this item and reading comprehension was .3959 which was significant at the .01 level. Better readers elaborated on their sense of understanding the meaning of the text being read by saying that they 'just know.' Many less skilled readers made comments

such as "I know I'm understanding if I can say all the words" or "I can say all the words right". One child admitted "I really don't know when I understand or don't understand" while another said "When Miss reads to me, I understand but when I read to myself, I don't"

Question ten of the strategy section of the Thomas Inventory asked the child to tell "What do we actually do when we read?" The correlation coefficient between skill and responses to this question was .3184 which was significant at the .01 level. Better readers referred more often to "meaning" in their attempts to answer this question. They often referred to efforts to make sense or to create a visual image from print. Less skilled readers were often either unable to answer this question or referred to the accurate saying, (i.e., pronunciation), of words.

Question eleven of the Thomas Inventory asked the child to tell what he/she would tell a kindergarten child about reading. The correlation coefficient between responses to this item and skill was .3318 which was significant at the .01 level. Better readers emphasized the enjoyment aspect of reading and the need to impress upon young children that reading is fun and necessary. Less skilled readers were often unable to answer this question or talked about the need for young children to learn words or to pronounce words commenting "it's a hard thing to learn how to do."

Hypothesis 5

The correlation between reading comprehension and perception of self as a reader will be zero.

The correlation coefficient of .2926 was computed for these two variables. This was statistically significant at the .01 level and is reported in Table 1. How grade six students viewed themselves as readers was positively significantly related to reading comprehension. Students who viewed themselves positively as readers were better comprehenders.

Particularly, responses to questions two and three of the "view of self as reader" section of the Thomas Inventory correlated statistically significantly with reading comprehension. Question two asked the child what he/she does best in reading. The correlation coefficient between responses to this item and reading comprehension was .2947, which was significant at the .01 level. Better readers referred to their ability to comprehend or understand what they read or "just read." Less skilled readers often referred to their ability to "read silently" or to "sound out words", as being the things that they do best in reading.

Question three of the "view of self as reader" section of the Thomas Inventory asked the child what he/she found the hardest to do in reading. The correlation coefficient between responses to this item and reading comprehension was .2253 which was significant at the .05 level. Less skilled readers said that saying hard words, having to read aloud in class and "doing" skill book questions were the hardest things to do in reading. Better readers also said that "doing" skill book or comprehension questions was hard (particularly if, as one child noted, you hadn't enjoyed the story in the first place!). Several better readers said that they really didn't find anything "that difficult" about reading.

TABLE 1

Correlations of Self-Concept, Scholastic Competency Reading Attitude, Strategic Knowledge and Perception of Self as Reader with Reading Comprehension (N = 90)

	r
Global self-concept	.0593
Scholastic competency	.4680 **
Reading attitude	.5602 **
Strategic knowledge	.6499 **
Self as reader	.2926 **

** significant at the .01 level

Hypothesis 6

The correlation between gender and global self-concept will be zero.

The correlation coefficient between these two variables was -.1588. This correlation is reported in Table 2. There was a statistically insignificant negative relationship between students' sense of personal worth and their gender.

Hypothesis 7

The correlation between gender and scholastic competence will be zero.

The correlational coefficient was calculated to be .0954 between gender and scholastic competence. This correlation is reported in Table 2. The relationship between students' perception of their competency in their school work and gender was statistically insignificant.

Hypothesis 8

The correlation between gender and reading attitude will be zero.

The correlation coefficient between gender and reading attitude was .1509. This correlation is reported in Table 2. The relationship between students' attitudes toward reading and gender was statistically insignificant. However, the response to question one, "Do you enjoy reading?" and gender were related. The correlation coefficient between question one and gender was .2615 which was significant at the .05 level, with more females expressing an enjoyment of reading. As well, the correlation coefficient between gender and responses to question nine "Do you enjoy reading aloud to younger children or other people at home?" was .4020. This was significant at the .01 level, with more female students acknowledging that they enjoyed reading aloud to someone at home.

Hypothesis 9

The correlation between gender and knowledge of reading strategy will be zero.

The correlation coefficient between gender and knowledge of reading was .2402, which was significant at the .05 level and is reported in Table 2. Gender and knowledge about reading strategies were significantly related. The correlation coefficient between responses to question four, "Do you ever make up pictures?", etc., and gender was .3050 which was significant at the .01 level. More female readers responded that they usually made up pictures to accompany their reading of text.

Hypothesis 10

The correlation between gender and perception of self as reader will be zero.

The correlation coefficient computed between gender and perception of self as a reader was .0405. This correlation is reported in Table 2. Students' perceptions of themselves as readers were not significantly related to gender.

Hypothesis 11

The correlation between gender and reading comprehension will be zero.

The correlation coefficient computed between gender and reading comprehension was .0323. This correlation is reported in Table 2. There was a statistically insignificant relationship between students' reading comprehension level and gender.

TABLE 2
Correlations of Global Self-Concept, Scholastic Competency, Reading Attitude, Strategic Knowledge, Perception of Self as a Reader, and Reading Comprehension with Gender (N = 90)

	r
Global self-concept	-.1588
Scholastic competency	.0954
Reading attitude	.1509
Strategic knowledge	.2402 *
Self as reader	.0405
Reading comprehension	.0323

* significant at .05 level

Hypothesis 12

The correlation between scholastic competence and global self-concept will be zero.

A statistically significant correlation coefficient of .4478 was computed between scholastic competence and global self-concept. This correlation is reported in Table 3. Students' perceptions of their competency in school and their global esteem as a person were statistically positively related at the .01 level. Each item in the scholastic competency section correlated positively and significantly with each item in the global self-esteem section.

Hypothesis 13

The correlation between scholastic competence and reading attitude will be zero.

The correlation coefficient computed between scholastic competence and reading attitude was .3642. This was statistically significant at the .01 level. This correlation is reported in Table 3. Students' attitudes about reading were positively significantly related to their perceptions of competency in school work. Students who perceived themselves more competent scholastically had more positive attitudes toward reading.

Specifically, the responses to question one of the attitude section of the Thomas Inventory which asked the child, "Do you enjoy reading?" correlated significantly with scholastic competency. A correlation coefficient of .2698 which was significant at the .05 level was computed. Children who viewed themselves as competent students enjoyed reading as a pastime.

Question eight of the attitude section asked the child "Do you enjoy reading aloud in class?" The correlation coefficient between the responses to this item and scholastic competency was .2985, which was significant at the .01 level. Students who perceived themselves as being competent learners were more likely to express an enjoyment of reading aloud in class. Less confident students were quite explicit in describing the horrors of having to read in front of the class.

Question ten of the attitude section of the Thomas Inventory asked the child whether he/she preferred watching television or reading as a pastime. The correlation coefficient between the responses to this item and scholastic competency was .2322 which was significant at the .05 level. Children who viewed themselves as competent in their school work enjoyed reading as a pastime.

Question eleven of the attitude section of the Thomas Inventory asked the child whether he/she would ever choose to read over watching television. The correlation coefficient between responses to this item and scholastic competency was .2824 which was significant at the .01 level. Children who regard themselves as able students were more likely to choose reading over watching television.

Hypothesis 14

The correlation between scholastic competence and knowledge of reading strategies will be zero.

The statistically significant correlation coefficient of .4326 was computed between the variables of scholastic competence and knowledge of reading strategies. This

correlation is reported in Table 3. Students' knowledge about reading strategies and their perceptions of competency in school were positively significantly related.

Particularly, responses to questions three, ten and eleven of the strategy section of the Thomas Inventory correlated significantly with scholastic competency. Question three of the strategy section asked the child what he/she would do when he/she found that he/she was not understanding a sentence or paragraph. The correlation coefficient between responses to this item and scholastic competency was .2981 which was significant at the .01 level. Children who viewed themselves as competent in school use more varied and active strategies to deal with their misunderstanding of larger sections of text.

Question ten of the strategy section of the Thomas Inventory asked "What is reading?" The correlation coefficient between responses to this item and scholastic competency was .2637 which was significant at the .05 level. Children who considered themselves competent in school described reading as an enjoyable activity during which they attempted to extract meaning from print.

Question eleven of the strategy section of the Thomas Inventory asked the child "If you wanted to tell a kindergartener all about reading, what would you tell him/her?" The correlation coefficient between responses to this item and scholastic competency was .2900 which was significant at the .01 level. Children who saw themselves as competent students referred to reading as an enjoyable activity involving books.

Hypothesis 15

The correlation between scholastic competence and perception of self as a reader will be zero.

The correlation coefficient of calculated between scholastic competence and perception of self as a reader was -.0072. This correlation is reported in Table 3. Students' perceptions of their competency in school and those of themselves as readers were not significantly related.

TABLE 3
Correlations of Global Self-Concept, Reading Attitude, Strategic Knowledge, Perception of Self as a Reader, and Reading Comprehension with Scholastic Competence (N = 90)

	r
Global self-concept	.4478 **
Reading attitude	.3642 **
Strategic knowledge	.4326 **
Self as reader	-.0072

** significant at the .01 level

SUMMARY

This chapter has provided a statistical analysis of the data yielded during the investigation of the relationships among sixth grade readers' concepts of self, metacognitive awareness and reading comprehension.

The major findings might be summarized as follows:

1. There is a significant relationship between scholastic competency and global self.

2. There is a significant relationship between scholastic competency and reading attitude.

3. There is a significant relationship between scholastic competency and knowledge of reading strategies.

4. There is a significant relationship between reading comprehension and scholastic competency.

5. There is a significant relationship between gender and knowledge of reading strategy.

6. There is a significant relationship between reading comprehension and reading attitude.

7. There is a significant relationship between reading comprehension and knowledge of reading strategies.

8. There is a significant relationship between reading comprehension and perception of self as reader.

9. There is no significant relationship between reading comprehension and global self concept.

10. There is no significant relationship between gender and global self concept.

11. There is no significant relationship between gender and scholastic competence.

12. There is no significant relationship between gender and reading attitude.

13. There is no significant relationship between gender and perception of self as reader.

14. There is no significant relationship between gender and reading comprehension.

15. There is no significant relationship between scholastic competence and perception of self as reader.

CHAPTER 5

DISCUSSION, EDUCATIONAL IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

In this chapter conclusions arising from the findings have been discussed. Secondly, educational implications have been presented, and thirdly, suggestions for further research have been made.

SUMMARY

This study developed from a review of theoretical and research literature about the reading process, metacognitive awareness and the development of the self-concept, and students' perceptions of competency.

The review produced much evidence of research in the area of metacognition, a variety of positions about self-concept and relatively little about the possible interactions or interrelationships among these socio-psychological factors and children's reading skill.

The primary purpose of the study was to investigate the relationships among sixth-graders' metacognitive awareness, perceptions of scholastic and global selves, and reading comprehension. Whether gender has any significant relationship with these variables was also considered. Specifically, the relationships studied, as stated in the hypotheses, included:

1. The correlation between reading comprehension and global self-concept will be zero.

2. The correlation between scholastic competence and reading comprehension will be zero.

3. The correlation between reading comprehension and reading attitude will be zero.

4. The correlation between reading comprehension and knowledge of reading strategies will be zero.

5. The correlation between reading comprehension and perception of self as reader will be zero.

6. The correlation between gender and global self-concept will be zero.

7. The correlation between gender and scholastic competence will be zero.

8. The correlation between gender and reading attitude will be zero.

9. The correlation between gender and knowledge of reading strategies will be zero.

10. The correlation between gender and perception of self as reader will be zero.

11. The correlation between gender and reading comprehension will be zero.

12. The correlation between scholastic competence and global self-concept will be zero.

13. The correlation between scholastic competence and reading attitude will be zero.

14. The correlation between scholastic competence and knowledge of reading strategies will be zero.

15. The correlation between scholastic competence and perception of self as reader will be zero.

The investigation was conducted with ninety students in grade six at an elementary school in Marystown. The scores obtained from forty-five females and forty-five male students measuring reading attitude, perception and strategies of reading task,

view of self as reader, measures of self-concept, and reading comprehension were correlated using the Pearson-Product Moment Method.

The Thomas Attitude and Awareness Inventory was administered to each child in an individual interview situation. This provided a qualitative and quantitative description of their metacognitive awareness of certain parameters of the reading task, namely attitude, perception and strategies of reading task, and view of self as reader.

The children also completed the Harter Perceived Competency Scale in order to tap judgements of their competency scholastically, as well as a global perception of their worth or esteem as a person.

Reading comprehension was measured by administering the Gates-McGinitie Reading Test, Level D, Form 1.

CONCLUSIONS

The study revealed the following significant relationships:

Sixth Grade Reader's Perceptions of Scholastic Competency and Reading Comprehension

The results of statistical analysis showed that sixth graders' perceptions of their competency scholastically and reading comprehension were correlated significantly. As has been outlined previously, reading is the code to school learning. It would appear that the ability to comprehend print would be related to the child's perceptions of his/her competency in school. The literature corroborated the existence of a

significant positive relationship between reading achievement and a generalized concept of academic self. Padelford (1969) found that this relationship existed regardless of sex, socioeconomic level or ethnicity as did Waldron, Saphire and Rosenblum (1987). In an extensive review of the achievement/self-concept relation, Hansford and Hattie (1982) found that measures of ability/performance correlated around .2 with measures of general self-concept, and around .4 with measures of academic self-concept. Chapman (1988) found that achievement in school was more closely related to self perceptions of ability than to general self-concept. As well, Byrne (1986), (1984); Shavelson and Bolus (1982); Shavelson et al (1976) found achievement in school was more closely related to self-perceptions of ability than to general self-concept. Actual performance in school, therefore, would seem to have a direct bearing on students' ability perceptions, whereas their more global self-perceptions involving non-academic, physical and social factors probably extend beyond the school.

Sixth Grade Readers' Perceptions of Reader "Self" and Reading Comprehension

View of self as reader, or the self-concept one holds of oneself as a reader positively correlated with reading comprehension. Better comprehenders had more positive concepts of themselves as readers. Although little research has been carried out with regard to this relationship, the research that does exist has studied an overall or comprehensive concept of the self as opposed to looking specifically at view of self as reader (ie. McWatters, (1989); Deeds (1981) and Vereen (1980)). This study's

findings corroborated findings of Thomas (1984), who considered the specific 'reader' self and found that better sixth grade readers had more positive views of themselves as readers than did less-skilled readers. And, according to the Marsh and Shavelson (1985) Internal/External Frame of Reference Model, reading achievement has a strong, positive direct relationship with reading self-concept.

Sixth Grade Readers' Perceptions of Global Self-Worth and Gender

The correlation coefficient produced between the variables of gender and global self-concept failed to reveal a significant relationship. Marsh, Smith and Barnes (1985) contended after their review of research findings that "although there appears to be little evidence of sex differences on total self-concept, there does appear to be systematic sex differences in particular dimensions of self-concept that are consistent with sex stereotypes" (p.583). As well, Harter (1985b) found that in middle school students there were gender differences for global self-worth with boys liking themselves more as persons than the girls did. However, this study did not show this relationship for the students in this sample.

Sixth Grade Readers' Perceptions of Global Self-Worth and Perceptions of Scholastic Competency

Findings of the statistical treatment of data showed that a positive significant relationship existed between scholastic competency and global self concept. With schooling being such a major part of the sixth graders' life, it would follow that

perceiving oneself as a capable student and one's overall sense of esteem would be related. Specifically, children who generally viewed themselves positively also had positive perceptions of themselves as learners.

Harter (1989) defined global self worth as "the overall value that one places on the self as a person," (p. 67) in contrast to the domain-specific evaluations of one's competence or adequacy (eg., scholastic competence). She has concluded that the construction of the self during middle childhood included the differentiation of at least five domains: scholastic competence, peer social acceptance, behavioral conduct, physical appearance and athletic competence as well as these emerging discriminations (p. 71). She has proposed that global self-worth also appears to take on meaning during this time. It would appear that at this point in life both the success or capability of success in school-related activities as well as reactions of significant others to children's success in school (ie. peers, parents, etc.) affects the child's sense of global self-esteem.

The findings of studies which have considered a generalized self-worth construct, however, provided some evidence supporting a causal relationship between self-concept and school achievement. In a study by Bachman and O'Malley (1977), the relationship between self esteem and educational achievements was examined. From their data they suggested that academic ability exerted a causal influence on self esteem. In studies of specific domains of self, Harter and Connell (1982), Connell (1981), and Calsyn and Kinney (1977) produced data that indicated a causal link between achievement and positive self evaluation. Additionally, Harter and Connell

(1982) and Connell (1981) found that achievement is causally predominant to perceived cognitive competence. However, perceived competence, in turn, predicted ones' motivational orientation. That is, the greater the student's sense of cognitive competence the more intrinsically motivated the student is to perform academically (Harter 1989). This study has confirmed the significant relationship between sixth graders perceptions of self-worth and their perceptions of scholastic competency. However, no conclusions about causal links can be made.

Sixth Grade Readers' Attitudes and Reading Comprehension

Results of the statistical treatment of data also showed that sixth graders' attitudes towards reading and skill in reading were statistically significantly related. Enjoying reading, reading at home for pleasure, finishing books started, reading in leisure time, and choosing to read over watching television were all particularly related to being more highly skilled in reading comprehension.

These findings are corroborated in the research literature. Numerous studies have produced positive correlations between students' attitudes toward reading and their achievement in reading (Wigfield and Asher 1984; Teale 1983; Fredericks 1982; Lewis 1980; Roettger, Szymczuk and Millard 1979; Crews 1978; Hall 1978; Alexander and Filler 1976; Kennedy and Halinski 1975; Ashov and Fischbach 1973; Groff 1962).

As well, a positive relationship between amount of leisure reading and reading achievement has been reported in a number of studies (Greaney and Hegarty, 1987;

Walberg and Tsai, 1984, 1983; Greaney, 1980; Whitehead et al. 1975; Long and Henderson, 1973).

Specific facets i.e. cognitive, affective of reading attitude appeared not to have been studied very extensively. Like self-concept, attitude has been researched in a very "generalized" manner. Stanovich (1980) has referred to the positive effects of reading practice on reading skill, including comprehension as the "Matthew effect" of reading, i.e., "the rich becoming richer and the poor becoming poorer." Consequently, children who like to read are more likely to engage in reading and the practice effect is likely to contribute to their becoming better readers. In this study children who liked reading were better comprehenders of printed message. Again, the causal link between the two related factors cannot be determined.

Sixth Grade Readers' Strategy Knowledge and Reading Comprehension

Results of the statistical treatment of data showed that children's knowledge of reading strategies was positively and significantly related to reading comprehension at the .01 level. More highly skilled readers had a more accurate idea of what reading was and were better able to tell how they would actively deal with comprehension problems they might encounter in their search for meaning than were less skilled readers.

These findings supported those of Baker and Brown (1984a/b); Johns (1984); Paris and Jacobs (1984); Grabe and Mann (1984); Thomas (1984); Brown, Bransford, Ferrera and Campione (1983); Pearson and Gallagher (1983); Brown, Campione and

Day (1981); Garner and Kraus (1981); Paris and Myers (1981); Garner (1980); Spiro (1980); Baker (1979); Bransford (1979); Canney and Winograd (1979); DiVesta, Hayward, and Orlando (1979); Forrest and Waller (1979); Myers and Paris (1978); Johns and Ellis (1976); Golinkoff (1975-1976) and Johns (1974).

More specifically, Forrest and Waller (1979) and Johns (1974) found similar significant correlations between reader skill and maturity of answers to the question "What is reading?" With regard to knowledge of and deployment of strategic practices, Golinkoff (1975-1976) found that good readers demonstrated the use of certain metacognitive strategies. As well, Pearson and Gallagher (1983) found good readers knew more about strategies, and were better at monitoring and adjusting the skills that they used. They reported that successful readers recognized when they did not understand, knew what to do when they recognized they did not understand, had knowledge of corrective strategies that could be used to 'fix up' comprehension and knowledge of how to use these corrective strategies. Thomas (1984) also found a strong relationship between knowledge of task and strategies and comprehension measures. Good readers consistently referred to active strategies for understanding while poor readers suggested more passive strategies. Findings from the present investigation with regard to the knowledge of and deployment of strategic practices also corroborated the findings of Brown, Campione and Day (1981); Paris and Myers, (1981); Garner (1980); Owings et al, (1980); Baker (1979); Bransford (1979) and DiVesta et al, (1979).

Sixth Grade Readers' Perceptions of Scholastic Competency and Attitude toward Reading

The results of correlational analysis significant at the .01 level revealed a positive relationship between sixth graders' perceptions of their competency or capabilities in scholastic tasks and attitude toward reading. Again, because reading is such a critical scholastic skill, it seems reasonable that students' attitudes towards reading would be related to their perceptions of their scholastic competency and vice versa. According to Briggs (1987), "Children's attitudes serve as guides to behaviour and profoundly affect the progress made toward educational goals and the level and degree of children's participation in educational activities" (p. 202). As well, research has shown that there is a significant relationship between positive attitudes of children and their progress toward achieving educational goals (Groff, 1962). Achievement of educational goals is likely to enhance learners' perceptions of scholastic competency. Consequently, it is reasonable to expect a relationship between reading attitude and perceptions of scholastic competence. This study has confirmed that the relationship exists.

Sixth Grade Readers' Perceptions of Scholastic Competency and Knowledge of Reading Strategies

Results of findings of the statistical treatment of data showed that a positive relationship existed between scholastic competency and knowledge of reading strategies. Strategic readers are aware of and use expertly numerous strategies when

processing text. Such strategies facilitate their comprehension of text, which is likely to affect their overall scholastic achievements. When children achieve they are likely to develop positive perceptions of their competency. With reading being of such importance to the school experience, students' awareness and control of such reading strategies would seem to be naturally related to their views of themselves as learners.

The study failed to show significant relationships among the following variables:

Sixth Grade Readers' Perceptions of Global Self-Worth and Reading Comprehension

Results of the statistical treatment of data showed that there was no significant relationship between sixth graders' perceptions of global self-worth and reading comprehension. This finding differs from the abundance of evidence of a significant correlational relationship between general self-concept and achievement (West, Fish and Stevens, 1980), where correlations reportedly ranged from .18 to .50. However, although such research findings show there is a moderate relationship between self-concept and measures of achievement, studies have shown that the correlations increased in magnitude where specific school-related self-concepts were examined (Byrne 1984; Marsh, Smith, Barnes & Butler 1983; Marsh, Parker & Smith 1983; Shavelson & Bolus 1982). As already reported, this study's findings have confirmed such relationships.

Sixth Grade Readers' Perceptions of Global Self-Worth, Scholastic Competence, Reader Self, and Gender

The correlation coefficient produced between the variables of gender and global self-concept failed to reveal a significant relationship. Marsh, Smith and Barnes (1985) contended, after their review of research findings, that "although there appears to be little evidence of sex differences on total self-concept, there do appear to be systematic sex differences in particular dimensions of self-concept that are consistent with sex stereotypes" (p.583). As well, Harter (1985b) found that in middle school students there were gender differences for global self-worth with boys liking themselves more as a person than the girls did. However, for this sample of sixth grade boys and girls in the context of a rural Newfoundland community, this is simply not the case.

Results of the statistical treatment of data also failed to determine that a significant relationship existed between students' perceptions of their competency in school and gender.

As well, results of the statistical treatment of data failed to show that a relationship between gender and view of self as reader existed. This finding, from this sample of boys and girls in a rural Newfoundland community, is different from that reported in the literature for other samples of North American children. For example, Mazurkiewicz (1960) found that as boys moved through school they increasingly viewed reading as a feminine activity.

Sixth Grade Readers' Gender and Reading Comprehension

The statistical treatment of the data produced in this study failed to reveal a relationship between gender and reading comprehension. Research on the SDQ (Self Description Questionnaire) has typically found sex differences favouring girls in reading in the preadolescent (Marsh et al, 1984) and adolescent (Marsh, Smith and Barnes, 1985). As well, Whitfield and Whitfield (1982) studied 480 boys and found that their reading achievement scores decreased in direct proportion to increases in sex-role stereotyping of reading as a feminine activity.

Parsons, Kaczala & Meece (1982), in their study of mathematics and gender differences contended that sex differences in achievement are due to stereotyped socialization patterns that produce traditional sex roles, attitudes and beliefs. While sex differences in mathematics and achievement and self-concept have been studied extensively, perhaps further investigation in reading would reveal similarities. However, for students in this community setting of rural Newfoundland, no significant relationships were found between gender and reading comprehension.

Sixth Grade Readers' Attitudes toward Reading and Gender

While the results of statistical analysis failed to show a significant relationship between overall attitude toward reading and gender, certain aspects of this attitude component of the Thomas Inventory and gender did correlate significantly. The responses to question one, "Do you enjoy reading?", and question nine, "Do you enjoy reading aloud to younger children or others at home?", were particularly

positively related to the gender variable. The results showed that females, more often than males, reported that they enjoyed reading aloud to others.

Research in this area of gender differences in reading, reading attitude and reading achievement is relatively scanty. What did exist has shown that females have generally been recognized as being more interested in reading than males, and as having a more positive attitude toward reading (Wallbrown, Levine and Engin 1981; Kennedy and Halsinki 1978; Arlin 1976; Ashov and Fischbach 1973). A study by Parker and Paradis (1986) of 134 children in grades one through six, showed that the attitude scores for girls tended to be more positive than for boys. Crews (1978), Cramer (1975), Johnson (1964) and Gates (1961), all found that female middle school students reported significantly more positive attitudes toward reading than did male students. However, for students in this sample, gender differences were found to exist only in regard to reported enjoyment of reading and the activity of reading aloud to others. Such questions as, "Do you usually finish books that you start to read?", and, "Do you talk to others about books that you have read?", did not reveal any significant differences.

Sixth Grade Readers' Strategy Knowledge and Gender

Of the three sections of the Thomas Inventory (namely attitude, strategy knowledge and view of self as reader), only strategy knowledge correlated significantly with gender. Female readers, more often than male readers, reported on their knowledge of and deployment of reading strategies. This was particularly true

of the less skilled female readers who expressed more actively searching for meaning than did less skilled male readers. Of particular interest were the responses to question four, "Do you make up pictures in your mind while reading?", which correlated statistically significantly with gender at the .05 level. More female readers than male readers, at all levels of skill, reported using visual imagery to aid comprehension.

Sixth Grade Readers' Perceptions of Scholastic Competency and Self as Reader

Contrary to expectations, results of the statistical treatment of data failed to show that a relationship existed between students' perception of scholastic competency and perception of self as reader. The 'self as reader' section of the Thomas Inventory contained only four very general questions that may not have elicited very accurate information about the concept of reader 'self'. The view one holds of oneself as a school 'learner' and a reader were not related in this particular study.

Educational Implications

There can be little doubt that in North American culture learning to read is a major adjustment that the child must make in order to receive the approval of parents, siblings, educators and friends. According to Paris (1983), "It is part of the process of growing up, a *sine qua non* of maturity and a product of socialization processes that is almost as important as learning to walk and talk" (p. 539). Additionally, Paris

has concluded, learning to read is such an educational and societal priority that it might be thought of as the major developmental task of the elementary years (1983).

Reading comprehension is a process in which the reader brings a complex of knowledge, previous experience, values, and expectations to the task. Skilled interpreters monitor their performance at critical points during the process as well. While most of the recent research in reading has focused on the cognitive aspect of this activity - the construction and monitoring of a meaning-getting task, these text-processing strategies are just some of the things that influence children's reading comprehension. As shown in this study, children's perceptions of their competency and their view of themselves as readers, are implicated in their application of motivational and cognitive strategies. As well, as Paris concludes, "the attitudes and expectations that are conveyed by parents, teachers, and peers shape students' views of themselves as learners, which further mediate the involvement of personal resources and energy" (p. 631, Paris et al 1991).

According to schema theory (Baker and Brown 1984a/b; Flavell and Wellman 1977; Brown 1975) in any human experience, perceptions, comprehension and memory may be influenced by the individual's attitudes, personality traits and background knowledge. This study has confirmed relationships between several of these variables. Specifically, this study has confirmed the significant relationships existing among sixth grade readers' strategy knowledge, perceptions of scholastic competency, attitudes toward reading, and perceptions of oneself as a reader and their ability to comprehend text.

The following are specific educational implications of this study:

1. The critical importance of sixth graders' knowledge of reading strategies to their reading comprehension and their perceptions of themselves as learners, (i.e., scholastic competency) was particularly evident in this study. Instructional research during the past two decades has revealed a variety of teaching methods that emphasize and develop children's knowledge about reading, awareness of misunderstandings, and deployment of various strategies in order to disambiguate miscomprehensions and heighten students' perceptions of the control and capability they have in any learning situation, and, particularly in reading. Modelling, direct explanation, cognitive coaching, and reciprocal teaching are just some of these teaching methods that should be utilized in classrooms to allow for interactive dialogues that help students learn reading strategies. As well, explanations and practice time must be provided for the students' application of the strategies in a variety of reading texts. Effective reading instruction must emphasize the meaning construction involved in comprehending text, (i.e., must emphasize the function of the reading task, the importance of activating prior knowledge, etc.) Declarative and procedural knowledge about these strategies must be exchanged during such teaching. As well, students' self-defeating, negative expectations, and feelings of lack of control need to be addressed during the teaching process, by teachers who are providing feedback to the students as they are learning to become strategic readers.

2. Since reading is a risk-taking and decision-making process, how the students view themselves as learners (scholastic competency) and as readers (view of self as a

reader) can affect their reading comprehension. Consequently, teachers need to create positive classroom climates which are conducive to students chance-taking, responsibility taking and decision-making.

3. This study revealed that students' perceptions of and attitudes toward reading were also related to reading comprehension in this study. While the teaching of reading strategies and the development of students' sense of control during the reading process is essential, it is also critical to balance the classroom's literacy program by providing access to books of varying topics and difficulty and plenty of opportunities to actually read (as opposed to doing workbook exercises). Teachers need to model and exude a love of reading and should schedule students' reading for enjoyment into each school day so that children also develop this desire for and love of reading.

4. In many Newfoundland schools the existing reading curricula is still very text-bound. Careful, sensitive selection of a variety of reading materials based on children's interests and abilities would do much to motivate less skilled or disinterested readers. Materials should be selected that allow students to use the reading strategies that they have mastered and experienced success with, so that positive image-building and successful types of reading experiences are possible.

5. Two questions of the Thomas Inventory highlighted gender differences. Enjoying reading aloud to others was an attitude positively related to female readers of all skill levels. Fostering this attitude in male readers might occur by allowing opportunities, (through such activities as buddy reading, etc.) for sixth grade males to read to other children. Through experience and practice, male children may come to

enjoy such activities. As well, it is important for young males to see important male role models engage in such activity.

6. One particular strength in reading strategy that was noted for grade six female readers, of all skill levels, was the use of visual imagery, (i.e., imagining the picture to go along with the words while reading). Perhaps including visualization exercises and drama activities in the curriculum would encourage the development of this strategy for male readers.

7. Reading assessment should include children's perceptions of themselves. Through observations and interviews, as well as instructional techniques, teachers can broaden classroom reading evaluations to include students' perceptions that can be shared with students in ongoing dialogues with them. This would aid not only the teacher's complete understanding of the student, but help the students form a more accurate understanding of themselves as learners in the classroom.

Recommendations for Further Research

In the course of any investigation, many questions become apparent. Many of these could not have been anticipated prior to conducting the research. The process of investigation contributes to the researchers' developing syntheses of related issues. These syntheses give rise to realizations that there are many other related issues and questions that need to be addressed. In an attempt to overcome the limitations of the present study, the following are recommendations for further research:

1. It is recommended that the study be replicated using a more accurate instrument than the Thomas Inventory in order to get more accurate measures of view of 'self as reader', attitude and knowledge of reading strategies. In retrospect, the 'self as reader' section of the Thomas Inventory seems somewhat inadequate since it contained only four very general questions that, in the opinion of this investigator, did not elicit enough or highly accurate information of the concept of reader 'self'. Since there is a limited availability of such instruments, new instruments may need to be devised.

2. It is recommended that the study be replicated using more sophisticated correlational designs that might allow some causal inferences to be drawn among the variables. Particularly, we eventually need to understand how children's various perceptions of 'self' energize their reading strategies and affect their overall comprehension of texts.

3. It is recommended that studies be made to extend the relationships studied to include the influence of parental attitudes and beliefs on children's perception and value of the reading task and attributions for success (or failure) particularly as they relate to homes in rural Newfoundland community settings.

4. It is recommended that future studies be made to investigate specific dimensions of reading attitudes and motivation to read, rather than the commonly found global "attitude toward reading."

5. It is recommended that the study be replicated using a sample from both urban and rural schools within the province and cross-cultural settings, to determine whether

cultural expectations influence the reading variables and relationships revealed by this study.

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APPENDICES

INSTRUCTIONS TO THE CHILD:

We have some sentences here and, as you can see from the top of your sheet where it says "What I am like," we are interested in what each of you is like. This is a survey, not a test. There are no right or wrong answers. Since kids are very different from one another, each of you will be putting down something different.

First let me explain how these questions work. There is a sample question at the top, marked (a). I'll read it out loud and you follow along with me. (Examiner reads sample question.) This question talks about two kinds of kids, and we want to know which kids are most like you.

(1) So, what I want you to decide first is whether you are more like the kids on the left side who would rather play outdoors, or whether you are more like the kids on the right decide which kind of kid is most like you, and go to that side of the sentence.

(2) Now, the second thing I want you to think about, now that you have decided which kind of kids are most like you, is to decide whether that is only sort of true for you, or really true; if it's only sort of true; then put an X in the box under sort of true; if it's really true for you, then put an X in that box, under really true.

(3) For each sentence you only check <u>one</u> box. Sometimes it will be on one side of the page, another time it will be on the other side of the page, but you can only check one box for each sentence. You don't check both sides, just the one side most like you.

(4) OK, that one was just for practice. Now we have some more sentences which I'm going to read out loud. For each one, just check one box, the one that goes with what is true for you, what you are most like.

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Harter 1985

APPENDIX B

MATRICES OF THE COEFFICIENTS OF THE VARIABLES

	Reading Comprehension	Global Self-Concept	Scholastic Competency	Reading Attitude	Strategic Knowledge	Self as Reader	Gender
Reading Comprehension	1.0000	.0593	.4680 **	.5602 **	.6499 **	.2926 **	.0323
Global Self-Concept	.0593	1.0000	.4478 **	.1354	.0026 **	-.0234	-.1588
Scholastic Competency	.4680 **	.4478 **	1.0000	.3642 **	.4326 **	-.0072	.0954
Reading Attitude	.5602 **	.1354	.3642 **	1.0000	.4381 **	.2503 *	.1509
Strategic Knowledge	.6499 **	.0026	.4326 **	.4381 **	1.0000	.2664 *	.2402 *
Self as Reader	.2926 **	-.0234	-.0072	.2503 *	.2664 *	1.0000	.0405
Gender	.0323	-.1588	.0954	.1509	.2402 *	.0405	1.0000

* significant at the .01 level
** significant at the .05 level

APPENDIX C

1991 11 22

Dear Parent(s):

I am requesting your permission to have your child participate in an investigation I am conducting. I am studying the area of reading, and I am attempting to get information about some of the different things that help students become better readers. In order to get this information, I would like to ask your child some questions in an individual interview. The interview will take about 12-15 minutes. I hope to have 90 children take part in this study.

As well, at a later time, I will be asking the students to complete a short survey about things that they like or do not like (for example about sports, school, etc.). This will be done in class.

Your child's identity will be kept in confidence. All reports of this study will safeguard the identities of the individual student.

If you would like any more information, please call me at 279-4133. Please complete the attached form and return to the school as soon as possible. I wish to thank you in advance for your co-operation.

Sincerely,

Anne-Marie Byrne

Attachment

APPENDIX D

GRADE SIX READING STUDY

I give permission for my child to take part in this grade six reading study. _____

I do not wish for my child to take part in this grade six reading study. _____

Parent's Name: _____

Child's Name: _____ _____

APPENDIX E

P.O. Box 1388
Marystown, NF
AOE 2M0

27 October 1991

Mr. Michael Siscoe
Superintendent
Roman Catholic School Board for the Burin Peninsula
Marystown, NF AOE 2M0

Dear Mr. Siscoe;

I am presently awaiting the approval of my thesis proposal. I wish to investigate the relationships among self-concept, metacognitive awareness and reading comprehension. The research design requires ninety students and I was hoping to draw my sample from the grade six classes at Sacred Heart Elementary School. The children would be allocated to skilled, moderately skilled and less skilled groups according to percentile rank attained on the Gates McGinite Reading Test. I would then need to interview each child using the Thomas Attitude and Awareness Inventory (attached). Following this I would like to administer the Harter Self Perception Profile for Children (also attached). This could be administered to the entire class.

As I know the children relatively well, I do not anticipate any problems establishing rapport and creating a comfortable interview situation. I would be very careful in explaining that I will be randomly choosing names from a hat in order to determine who will be interviewed. Also I think that it would be best to administer the Self Perception Profile to the entire group in order to avoid having children feeling left out. All data collected would be treated confidentially.

I have contacted both the principal and vice-principal of Sacred Heart regarding this project and they have assured me of their co-operation. I would meet with the teachers concerned to discuss and arrange the least disruptive arrangement for their classes.

In order to proceed with this investigation, I am also awaiting a reply from Memorial's Ethics Review Committee. They required that I enclose my letters to parents and parental consent forms (as well as testing materials) with my application. I have also attached these for your perusal.

I am writing in anticipation of the approval of my proposal and methodology and am most anxious to proceed as quickly as possible once I receive this approval. Thank you for your attention.

Sincerely,

Anne-Marie Byrne
AMB/ct

APPENDIX F

MEMORIAL UNIVERSITY OF NEWFOUNDLAND ETHICS REVIEW COMMITTEE APPROVAL

FACULTY OF EDUCATION

Memorial University of Newfoundland

Faculty Committee for Ethical Review of Research Involving Human Subjects

Certificate of Approval

Investigator:	Ms. Anne-Marie Byrne
Investigator's Workplace:	
Supervisor:	Dr. Joan Oldford-Matchim
Title of Research:	An Investigation of the Relationship Among Grade VI Readers' Concepts of Self, Metacognitive Awareness and Comprehension
Approval Date:	November 5, 1991

The Ethics Review Committee has reviewed the protocol and procedures as described in this research proposal and we conclude that they conform to the University's guidelines for research involving human subjects.

Dr. George A. Hickman
Chairperson
Ethics Review Committee

Members: Dr. Ron Lehr
Dr. Walter Okshevsky
Dr. Dennis Sharpe
Dr. George A. Hickman
Dr. Patricia Canning