

**Reading Comprehension and Gender
in Provincial Reading Assessments 1977-1998**

by


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Abstract

This study describes the Provincial Reading Assessments 1977-1998, analyses the results of reading comprehension skills, and relates these results to background variables of gender, preferences of reading material and instructional practices. It addresses the context for gender differences in reading on both a national and international level. The thesis includes a historical overview of the Provincial Learning Assessment Program and a description of each Provincial Reading Assessment completed in the period 1977 to 1998.

The results of the study indicate that at every grade level, on every assessment during the period 1977 to 1998, females outperform males on Provincial Reading Assessments in the area of reading comprehension. The difference with which they do so increases from grade 4 to grade 10 and this gap is widening over time. Differences were noted between genders regarding preferences in reading materials and reading habits and these variables are shown to effect reading comprehension achievement. The review of literature surveys the social and instructional context for reading and the gendered nature of reading materials.

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Chapter One

Introduction

That there exists differences between males and females as readers is widely accepted by researchers (Alloway & Gilbert, 1993; Bank, Biddle & Good, 1980; Elley, 1994; Gambell & Hunter, 2000; Wagemaker, 1996). Studies which examine the difference with which males and females achieve success in certain subject areas have led to the development and application of strategies to enhance a particular gender's performance in certain subject areas (Martino, 1995; Gambell & Hunter, 1999). Female students' improved performance in math, science and computer technology are examples of this trend (Alloway & Gilbert, 1995; Hoff Sommers, 2000). Recent attention has been directed to males' poorer performance in literacy subject areas when compared to females (Bouchard & St. Armand, 2000; Gambell & Hunter, 2000; Basic Skills Agency, 1997; Hoff Sommers, 2000; Millard, 1997; Martino, 1998).

In many countries large-scale assessments have revealed trends about gender and reading (Wagemaker, 1996; Elley, 1994). Research will be presented which indicates that gender differences in reading (reading achievement, habits and interests) exist in many countries. Studies include the International Association for the Evaluation of Educational Achievement (IEA) study of literacy in 32 countries as well as studies by members of the international research community. A consistent finding in this body of research is the observed differences with which males and females achieve success on large-scale assessments in reading wherein females outperform males on reading comprehension tests.

Explanations for the differences with which males and females experience success in becoming proficient readers and exhibit different reading habits are based on a variety of models which vary from biological to social and cultural factors. Studies which attempt to explore possible

explanations examine the development of physical growth (Beech, 1989), brain functioning (Helfeldt, 1983), reading speed (Swift, 1995) and cultural influences (Wagemaker, 1996; Johnson, 1973; Lummis & Stevenson, 1990). Other studies include those concerned with social factors of sex-role appropriateness of reading (Yawkey, 1980; Shapiro, 1990; Kelly, 1986).

As results of large-scale assessments in reading are made public, interest has been generated in the general public for the issues raised in their findings. The growing awareness of the differences between males and females in achieving reading success is illustrated by the concerns expressed regarding this trend in popular media such as current newspapers and magazines. These articles indicate a cross-over into the popular press from the realm of the academic researcher.

The front page of the National Post February 22, 2000 featured the headline "Education System Failing Boys - Gender Gap Grows in Reading and Writing". The article by Neil Seeman reports the results of the recent study by the Council of Ministers of Education (CMEC) in conjunction with Statistics Canada. This study, which was based on research from the School Achievement Indicators Program (SAIP) between 1995 and 1998, indicated that not only do females outperform males in reading and writing and but also the rate at which they do so is increasing.

On December 7, 1998, Maclean's magazine published an article in the Education Notes section entitled "Words and Gender: the Gap is Growing" and queried whether schools in British Columbia are failing boys. Citing the then-recently released results of the 1998 BC Provincial Reading Assessment it was noted that girls outperformed boys in every category and at every grade level.

William Pollock's 1998 publication of Real Boys, a trade book which analyses the current sociological position of boys in North American culture, was featured on the Oprah Winfrey show in 1999. A segment of Pollock's book presented the difficulties he perceives boys currently face in schools

resulting in weaker academic achievement when compared to their female counterparts. He uses data from the US Department of Education to support his claims.

As noted, awareness within the public domain for the gender issues raised by the results of the large scale assessments indicates that interest has been piqued in the topic beyond the academic realm. This awareness generates not only an interest in the differences between gender difference in reading, but also in the nature and quality of the education system in which these assessments take place. The vitally important role of the language arts curriculum is firmly entrenched in the values of modern education. An understanding that a huge part of teaching at the elementary school level revolves around developing reading skills regardless of the subject area is shared by many elementary school teachers (Annan in Barrs & Pidgeon, 1993). However, the accuracy with which these large-scale assessments reflect the nature and quality of reading instruction and student achievement is less clear and less easily discerned. With government calls for more testing in schools as a way to increase accountability, questions arise in the teaching profession as to how useful these large-scale tests are and to what extent do they reflect or represent learning and reading performance in schools.

In British Columbia the words “assessment” and “accountability” have become frequently used recently with respect to issues of education. The focus on assessment has been made clear by the Ministry of Education in their implementation of the annual Foundation Skills Assessments (FSA) program in 1999 (a yearly assessment for students in grade 4, 7 and 10 in the areas of reading comprehension, first-draft writing and numeracy). The publication by the Ministry of Education in 2000 of Provincial Performance Standards in Language Arts serves not only as a guideline for educators in the province but also as an indicator of the priority assessment and evaluation have been given in recent years. The establishment of a provincial

data system which stores statistics on each student as well as reporting individual student results on provincial assessments to students and their families sets a tone of accountability for schools and school districts. In the July 16, 2001 edition of the National Post, BC's new Minister of Education is quoted as stating her plans to create a *"consumer-driven system that decentralizes public education to school districts and forces them to be more accountable by publicizing detailed student results"*.

The preceding publications and program initiatives serve to illustrate the general interest and awareness which currently exist concerning the issues of reading achievement and the effectiveness of the education system. When the results of large-scale assessments are viewed in this context, they take on a higher profile than they may have otherwise. It is within this context this thesis is situated. It is the purpose of this thesis to explore some of the differences in reading exhibited by British Columbia students when their reading comprehension performance on Provincial Reading Assessments is considered in terms of gender. By using the Provincial Reading Assessments conducted in British Columbia from 1977 to 1998 it is possible to organize this reported data by gender, grade level and time, analyze the results for patterns and trends and relate current research to the findings. Hence, this document is an attempt to understand the nature of BC male and female students' reading comprehension performance on large scale provincial assessments: how great are the differences, are these differences consistent, can these differences be linked to reading habits and preferences, what might be some explanations from the research literature and from the test design for these score patterns and to identify some of the implications these differences have for teaching practice.

The Study

The design of this study is a form of document analysis. Initial appraisal of the technical reports published by the Ministry of Education after the completion of each Provincial Reading Assessment revealed that there exists a large data base which has not been tapped as a source for studying the relationship between gender and reading performance. As a series of Provincial Reading Assessments have been completed over a period of twenty-one years (1977-1998) it is possible to examine this relationship in a longitudinal frame. This series includes six assessments involving approximately 600,000 students and their teachers and administrators. By compiling data from Provincial Reading Assessments which reported their results with the background variable of gender, a picture slowly emerged. Patterns and trends crossed time, gender and grade levels. Data from teacher questionnaires regarding instructional practices became interconnected with student achievement results. Preferences in reading materials expressed by students in background questionnaires enriched the interpretation of test results and underscored the interplay between pedagogy, use of curricular materials and student achievement. The study became an analysis of the intersection between student reading comprehension achievement on large-scale assessments and gender, instructional practices and provincially mandated curriculum. The researcher proceeded much like a detective, following clues and returning many times to reread reports which provided yet more detail and nuance to the emerging patterns.

The study was completed in the following steps:

Phase one : becoming familiar with each of the Provincial Reading Assessments - their objectives, structural design, results and findings;

Phase two : identifying and sorting the data generated by the assessments which pertained specifically to reading comprehension and gender; identifying and sorting data generated by the assessments which reported reading habits and preferences by gender;

Phase three : placing the data in graphic organizers to enable data analysis;

Phase four : data analysis;

Phase five : relating the patterns and trends which emerged from the data analysis to current research and identifying possible implications for instructional practice and curriculum design.

Limitations of the Study

The completion of this study has provided a glimpse into the relationship between gender and reading performance in BC schools through the lens of provincial reading tests. This snapshot offers an opportunity to examine issues of gender and reading in the province in which the data was collected. It is restricted to the period (1977-1998) and province (BC) in which the data was collected; it is restricted to the data reported by the technical reports of each assessment (1977 to 1998); and it is restricted to the limitations of large-scale assessments and their inherent limits of test construction, administration and scoring.

It is the experience of the researcher that teachers tend to work in daily isolation - isolation by classroom, school or school district - and large-scale assessments allow teachers, for a moment, to view a facet of the

programs which they teach and their students' achievement in relation to others in the province. This information can enrich discussions of curriculum development and program implementation. However, it is not the position of the researcher that large-scale assessment should be used as the sole or definitive data source for making such decisions. Large-scale assessments by their nature cannot take into account the subtle differences of student performance discernible by teachers in classrooms and schools. Instead, they provide an indication of general trends and patterns which can assist in understanding what is taking place at a provincial level in student learning. It is readily acknowledged by the researcher that large-scale assessment provides a limited view of any program, and the results of the findings are viewed within these parameters.

The completion of this study has enabled a greater understanding of the purpose, design, structure and limitations of large-scale provincial assessments. Moreover, it has provided the researcher with the impetus to examine personal teaching practice and curriculum materials with a new awareness. A series of understandings have been developed which have allowed insight into one aspect of teaching reading in the BC elementary classroom.

Chapter Two

The Context of Gender Differences in Reading: Studies in Large-Scale Assessments

That boys and girls achieve different levels of success on large-scale reading assessments is supported by many researchers (Alloway & Gilbert, 1993; Elley, 1994; Gambell & Hunter, 2000; Wagemaker, 1996). These differences have been explored in both national and international studies, as the following literature review describes.

The 1996 publication by the International Association for the Evaluation of Educational Achievement (IEA) entitled Are Girls Better Readers? Gender Differences in Reading Literacy in 32 Countries compiles an analysis of data collected by this large-scale study. This study addressed the concern expressed by educators in many countries regarding gender differences in literacy rates. The primary purpose of the reading study was to produce measures that would permit the international comparison of students aged 9 and 14 in the areas of basic reading skills and reading activities. The variable of gender correlated with reading achievement was the focus of this report; other areas of interest were published in different reports. This study and its results are particularly pertinent to this document because the participating Canadian sample group was from British Columbia. Because this sample group is taken from the same population which participates in the provincial assessments, this directly places the BC learning assessment results into an international context. The structure of the test design was similar to that of the 1977, 1980 and 1984 Provincial Learning Assessment Program (PLAP) survey booklets; test booklets contained items which were, in the majority, multiple choice or one word answers.

The results of the IEA study demonstrate that across the 32 countries involved (210,000 students and 10,000 teachers) overall reading literacy performance of females on the achievement test was better than that of males. This was based on an overall mean score which did not take into account social, cultural and political boundaries and educational characteristics. The study examines gender differences in ability range, domains of text, and performance on common test items. It concludes by stating that strong empirical evidence demonstrates that gender differences in reading comprehension exist in school children all over the world.

During the last decade in Australia, girls' and boys' achievements in literacy have been tracked and analyzed (Alloway & Gilbert, 1996; Martino, 1998; Swift, 1995). Results from high school English exams and Basic Skills Tests of literacy for primary grades have been analyzed to reveal differences in gender patterns of literacy (Alloway & Gilbert, 1996; Martino, 1998; Swift, 1995). Alloway and Gilbert (1996) report that in literacy achievement areas, females outperform males in every age group. Swift (1995) states that the reading age of the boys is on average two and one half years below the corresponding year's intake of girls. He further states that this difference was considered neither strange nor unexpected by teachers in both primary and high schools.

Improving Boys' Literacy, a 1997 report published by the Basic Skills Agency in England, describes the achievement of boys in literacy as an area of growing concern for a number of years. It states that in national tests the average performance of girls now outstrips that of boys. This report suggests that this is the result not so much of the deterioration of boys' achievements but rather that girls have improved their reading achievement at a faster rate.

A May 2000 article in the Atlantic Monthly by Christina Hoff Sommers entitled The War Against Boys describes how data from the US Department of Education shows that females outperform males in many academic areas,

especially in literacy. Hoff Sommers states that the data indicate that the “typical” boy is a year and a half behind the “typical” girl in reading and writing.

Gender differences in reading skills are also indicated in different regional areas of Canada. In their 1999 article Rethinking Gender Differences in Literacy, Gambell and Hunter analyzed the results of the 1994 Saskatchewan Literacy Assessment with a focus on literacy performance as a function of gender. They found that students in grades 5, 8 and 11 demonstrated differences in reading performance between male and female students. Females consistently outperformed males in reading at all grade levels. They also reported that females demonstrated more positive attitudes towards reading than males and that they had higher self-concepts as readers than males.

Gambell and Hunter (1999) also cite a national assessment completed in 1994 by the Council of Ministers of Education, Canada (CMEC) which assessed the reading and writing performances of grade 8 and grade 11 students. The results showed that in reading, females performed better than males of the same ages in both the grade 8 and grade 11 populations. In their 2000 article, Surveying Gender Differences in Canadian School Literacy, Gambell and Hunter analyze the differences between male and female reading performance on the 1994 Council of Ministers of Education assessment. They completed an analysis to explore possible explanations for the strong female performance in this assessment. They also refer to results from the Quebec Ministry of Education secondary school examinations for 1994-1995 which indicate that female students were outperforming male students in reading. This trend is repeated, according to Gambell and Hunter, both in British Columbia and the Atlantic provinces, especially Newfoundland.

Blair and Sanford (1999) examined the alternative of single-sex classrooms and schools. They also refer to the literacy studies completed by

the Council of Ministers of Education in Canada. As with other Canadian authors, they point to the results of these studies in 1994, 1995 and 1998 which indicate that girls score better than boys in terms of literacy assessment.

The Context of Gender Differences in Reading: Studies for Possible Explanations

Confirmation of the differences between male and female reading habits, interests and performance are supported by various studies which examine possible explanations for these differences. Examples of such studies follows:

Beech (1989) investigated the development of physical growth (dental and skeletal) and its relationship with gender and reading in a study conducted in Northern Ireland. The study, which involved one hundred boys and one hundred girls between the ages of 4 and 8, found no significant differences between genders when height on age was related to reading age. However, teeth maturity relative to age gave a significant difference in reading proficiency for boys compared with none for the girls. A further comparison between the two groups of boys (those with immature teeth and those with mature teeth) revealed that boys with immature teeth while almost identical in chronological age and height on age, had a difference by almost one full year in reading age.

Helfeldt (1983) writes of his inquiry into the topic of sex-linked brain functioning and how this provides a neuro-psychological base for the differences observed between male and female reading achievement. He reviews research in infant and preschool brain stimulation studies which indicate differences between genders and their brain functioning. Males are

described as having a predilection to process information visually while females have a predilection to process information auditorally. Helfeldt argues that these differences in brain processing effect the success with which males and females learn to read, and that instructional strategies currently used in education may favor the female brain processing style.

Yawkey (1980) studied the effects of social relationships curricula and sex differences on reading readiness. In this study, which involved forty-eight boys and forty-eight girls of five years of age, girls were seen to significantly outperform boys in terms of reading readiness and imaginativeness. It is perceived that social relationships was a facilitator of cognitive learning of reading readiness concepts.

Swift (1995) conducted a study which measured reading speed as an indicator of general reading abilities in grade 8 male and female students in Tasmania. The study, which involved seventy-four males and seventy-four females, indicated that females have a much greater reading speed when compared to males and that they have a greater spread of reading speeds than their male counterparts. It was noted that when the text selection was changed from fiction to non-fiction, the gap between gender reading speeds narrowed considerably from a difference of 57.4 words per minute to 19.3 words per minute.

Shapiro (1990) investigated the influence of sex-role appropriateness of reading and reading instruction in a study to further understand the socio-cultural factors attributed to explanations regarding gender differences in reading achievement and habits. This British Columbia study, which involved forty-two subjects (23 boys and 19 girls) from kindergarten to grade two in Vancouver, found that as children moved through the grades an increasing number of boys began to view reading as an inappropriate activity for themselves, while girls grew into their role of sex-role appropriateness. It was noted that those boys who received whole language reading instruction continued to maintain a stronger sex-role appropriate view of

literacy when compared to boys who were not involved in a whole language literacy program.

Kelly (1986) conducted a study which examined the effect of the content of reading material on students' perceptions of reading as a masculine or feminine activity. This study took place in Southern California and involved 492 students (255 females and 237 males) in kindergarten and grades 2, 4, 6, 8 and high school. The results showed that the majority of students from grade 2 through high school viewed the general reading item as feminine. However, the non-fiction reading items were identified as masculine by both girls and boys from the second grade on. It was noted that when students enter school both boys and girls have sex-neutral attitudes about reading in general, however, as they progress through the grades they begin to view reading as more and more feminine.

Cross-cultural studies explore the cultural-societal factors which may cause the observed differences between genders in reading in North America. Wagemaker (1996) states that much of the research on gender differences has its origins in North America. The IEA study of reading in 32 countries was in part initiated to establish a wider cultural base for gender differences in reading (Wagemaker, 1996). This movement to develop an international perspective on reading and gender assists in understanding the cultural - societal factors which impinge upon reading achievement.

Johnson (1973) conducted a study of sex differences in reading achievement in four English-speaking nations. The study, which involved more than one thousand elementary students in grades 2, 4 and 6 in Canada, England, Nigeria and the United States, indicated statistically significant sex differences. In England and Nigeria boys scored higher than girls in most tests, while in Canada and the United States girls generally scored higher than boys. The results indicate that sex differences in reading ability may be related to cultural influences. Cultural differences which were noted

included the proportion of male and female teachers, the cultural value of education for genders and the sex-role appropriateness for reading.

Lummis and Stevenson (1990) also conducted a cross-cultural study to examine the relationship between gender differences in beliefs and achievement. The study, which involved approximately 4000 students in Taiwan, Japan and the United States in kindergarten, grades one and five, found that there were some statistically significant gender differences in reading; cultural differences were significant in every comparison made. Girls achieved significantly higher scores than did boys for reading achievement in kindergarten and first grade, but at fifth grade the scores did not differ significantly. The association between beliefs and test score indicated that in all three cultures mothers tended to perceive girls as better readers than boys despite the fact that the achievement test gave little indication that girls were better readers.

These studies serve to illustrate that differences between gender in reading performance, habits and interest/attitudes exist and have been long established in the research literature. As indicated in the above studies, these differences are attributed to a variety of factors. Banks, Biddle & Good (1980) review the widely accepted explanations for the differences observed between genders and reading achievement. While the explanations they describe span physical/maturation theories, teacher/school bias, instructional material bias to feminization of reading and teaching, it is the position of the authors that the socio-cultural influences on reading are considered the most likely approach to understanding gender differences in reading (Banks et al, 1980; Shapiro, 1990). These explanations will be further addressed in Chapter Five.

Chapter Three

A Historical Overview of the Provincial Learning Assessment Program 1977 to 1998

The six provincial reading assessments upon which this thesis is based are part of the Provincial Learning Assessment Program (PLAP). This program was created in 1976. It was established by the Ministry of Education in response to concerns regarding the lack of information available about the nature and quality of the provincial educational system.

The principle objective of the Provincial Learning Assessment Program is accountability. Given the ever-increasing demands placed on the educational system and its resources, decisions regarding resource allocation and use are challenging. It was perceived that the effective management of education would be enhanced by the systematic collection and interpretation of information about student learning. As a result, the Provincial Learning Assessment Program was founded. This program became a component of the Assessment and Evaluation Branch of the Ministry of Education.

The development of a long-term assessment plan began in 1974 with the establishment of the Joint Committee on Evaluation. At the same time a team of researchers were retained by the Ministry of Education from the University of Victoria to conduct a study of English Language Arts. This 1976 study, Language: BC, became the first in a series of Provincial Learning Assessments to be conducted over the next twenty-two years. This study may be considered the germinal survey of the status of Language Arts during the period this thesis will study. The Language: BC study was a pilot study for the following assessment programs.

The main objectives of Provincial Learning Assessments include the following:

1. to inform professionals and the public of some of the strengths and weaknesses of the public school system;
2. to monitor student learning over time;
3. to assist the Ministry, school districts and schools in decisions related to the development, modification, revision and implementation of existing curricula and supporting instructional resource materials;
4. to assist the ministry in decisions regarding the allocation of resources;
5. to identify areas of need and provide directions for change in both pre-service and in-service teacher education;
6. to provide directions for educational research.

(Technical Reports of Provincial Reading Assessments 1977 through 1998)

Provincial Learning Assessments were completed throughout the period 1976 to 1998 in subject areas which include reading, writing, mathematics, science and social studies. Subject areas were assessed on a rotating basis; reading was assessed approximately once every four years. Table One (page 23) organizes an overview of these reading assessments 1977 to 1998. Generally, these assessments had several components: teacher questionnaires, student questionnaires, and student achievement booklets which contain multiple-choice and/or constructed-response items.

The 1998 Reading and Writing Assessment marked a shift in the direction of the Ministry of Education; the Provincial Learning Assessment Program was replaced with the Foundation Skills Assessments. These are annual assessments of reading, writing and numeracy skills which focus

primarily on program evaluation based on student achievement. This differs from the Provincial Learning Assessments which had a primary focus on program evaluation based on broad ranging surveys of teachers and students about classroom activities which were then related to student achievement. This document will focus on the data reported by the six Provincial Learning Assessments in Reading completed in the period 1977 to 1998. Results reported by the Foundation Skills Assessment 1999 and 2000 will not be considered due to their differing nature.

The Structure of the Provincial Reading Assessments 1977-1998

From 1976 to 1982 the Provincial Learning Assessments were administered to students in grades 4, 8 and 12; however, following the implementation of mandatory grade 12 provincial exams the grade levels involved in provincial assessments were changed to grades 4, 7 and 10. These grades were selected as target grades for the PLAP because they represent natural break points in the BC school system. Provincial Learning Assessments were generally distributed on a census basis, one in which all students in the target grade levels are encouraged to complete the performance booklet and accompanying questionnaires. Generally, the sample group includes most students enrolled in the target grades in the public school system; on occasion some independent schools participated in the assessment program. This census approach to the sample group is expected to provide a consistent context for interpreting school, district and provincial results.

The Provincial Reading Assessments have several components: teacher questionnaires, student questionnaires, and student achievement booklets. Student achievement booklets contain multiple-choice and/or constructed-response items. Teacher questionnaires are designed to gather information regarding instructional practices and the context in which reading is taught.

They seek information on the instructional goals, methods, resources and organizational procedures used to develop reading skills. Student background questionnaires have been included in every achievement survey. Students are asked to provide information which will later be related to their performance on the achievement survey. Questions pertain to the students' biodemographic and sociocultural factors, their reading habits, attitudes towards reading and leisure time activities.

Student achievement booklets vary in format from assessment to assessment. They range from complete multiple choice (1977, 1980) to complete written response constructions (1993-94). From 1976 to 1998 these assessments were designed to assess a varying number of reading skills such as word attack, vocabulary and dictionary skills; all assessed reading comprehension. Given that reading comprehension alone is common to the six reading assessments selected for study in this thesis, it will be the area of focus for analysis. For the purposes of this document reading comprehension will be defined as the process by which the reader constructs meaning through transaction with the text (Flood & Lapp, 1991). Furthermore, as reading comprehension is integral to the teaching of reading at the elementary school level it is an area of interest to the researcher. While it is but one component of the whole act of reading, comprehension can be described as *"perhaps the most interesting aspect of reading for educator."* (Schallert, 1991).

The instruments used in these large-scale assessments are provincially developed and are linked closely to the curricular objectives and learning outcomes prescribed by the Ministry of Education. Content validity is built into the assessments by this close connection between what is assessed and what is generally taught in classrooms across the province. See Appendix 1 for an example of the close connection between test items and the

provincially-mandated curriculum. The intent of the PLAP is to measure knowledge, skills and concepts that are linked directly to the prescribed curriculum at appropriate levels. Test items are developed, pilot tested and revised before inclusion in a PLAP booklet. Technical analysis of test items following the pilot-testing is completed to increase construct validity. Statistical and methodological processes are used in gathering evidence of the reliability of the test; analyses of test characteristics appear to be completed with great care and attention to detail. In general, the PLAP design is similar to the model used in many large-scale assessments. This model is described as having its roots in behaviorist learning theory; the procedures for much of the assessment practice currently employed by educational organizations still implicitly reflect this practice (Wilson, 1999). *“The recipes for large-scale assessment were derived from the technology surrounding standardized testing in the United States. The standardized testing technology of item selection, development, tryout, and analysis has been generalized to large-scale assessment”* (Wilson, 1999).

The administration of the assessment takes place throughout the province in a specified time period. Scoring and interpretation of the data gathered is completed by teams comprised of educators and/or those involved in education. Details of these aspects of the Provincial Reading Assessments will be addressed in the analysis section of this document. The PLAP findings are reported by the Ministry of Education to the public in summary reports; a limited number of technical reports are also published which describe each assessment in detail.

The objective to provide information about the nature and quality of the provincial reading program has remained constant in the period 1977 to 1998 (BC Reading Comprehension and First-Draft Writing Technical Report, 1998). While the provincial education system has experienced many changes

in curriculum content and structure, program delivery and student populations during this time period, the interest in information regarding student learning has not waned. This is evidenced in the continuation of the Provincial Learning Assessment program and now its annual successor the Foundation Skills Assessments.

Throughout the period 1977 to 1998 the nature and scope of the assessments evolved, the models used have altered and the sample sizes and populations have varied. Closer examination of the technical reports indicate that the models used have varied considerably. Changes in structure include aspects of instruments, scoring and reporting procedures and composition of standard setting teams and interpretation panels. These changes reflect the different contexts in which each assessment was completed. The general movement away from complete multiple-choice test design indicates a gradual trend towards more complex assessment of student performance. Constructed response items, though intensifying test construct and inter-marker reliability concerns, are considered to provide more authentic data in relationship to both the student and educational goals (Nagy and Penfield, 1999). However, for the purposes of this study, these changes limit comparisons between the data collected by assessments and as a result make it more difficult to track student assessment over time.

The Description of Assessments 1977 to 1998

Table One : Overview of Reading Assessments 1977 to 1998

Year	sample	Grade levels	assessed areas	survey design	teacher quest. ?	student quest. ?
1977	65,882	8, 12	word meaning comprehension application	multiple choice	yes	yes
1980	100,095	4, 8, 12	word attack word meaning comprehension application	multiple choice	yes	yes
1984	98,000	4, 7, 10	words & expressions comprehension locates/uses information	multiple choice & 4% written response	no	yes
1988	110,644	4, 7, 10	comprehension	multiple choice & written response	yes	yes
1993/94	32,100	K-12 3, 7, 10	strategies comprehension interpretation	written response	yes	yes
1998	140,000	4, 7, 10	comprehension	multiple choice & written response	no	yes

(British Columbia Reading Assessment 1977; British Columbia Reading Assessment 1980; British Columbia Reading Assessment 1984; British Columbia Reading and Written Expression Assessment 1988; 1993/1994 Provincial Assessment of Communication Skills; British Columbia 1998 Assessment of Reading Comprehension and First-Draft Writing.)

The 1977 Reading Assessment

The 1977 Reading Assessment was administered by census approach in March of 1977 to 65,882 students in grades 8 and 12. The main purpose of the assessment was to determine to what degree reading skills had been mastered by the population tested. This assessment was based on Language:BC Study (1976); data generated from this study was used to define the objectives and development of test items of the 1977 Reading Assessment. Using the Language:BC Study (1976) data, a set of objectives was generated and grouped into three domains or categories: word meaning, comprehension and applied reading/study skills. Student achievement tests were published in two booklets: one for each grade to be assessed. Both the grade 8 and grade 12 booklets were identical in format: a series of multiple choice items which provided four possible solutions and an "I don't know" option. The booklets were designed to allow extensive cross-grade comparison; seventy-six items were common to the two booklets. The comprehension domain differed most widely as the stimulus reading passages were varied in reading difficulty. The inclusion of nine items in the grade 8 booklets from the 1976 Language:BC Study Year 4 Survey permitted the collection of data which would indicate the growth of reading skills over time.

Students were asked to complete background questionnaires which were intended to solicit information in an attempt to isolate variables which are most likely associated with success or failure in reading. A sample of junior and secondary school teachers (1409 teachers) in subject areas of English, Science and Social Studies were asked to complete teacher questionnaires which were designed to determine the relative importance these teachers placed on the instructional goals of reading.

The scoring of the 1977 Reading Assessment was completed by the technical agency The BC Research Council. Test results were expressed as mean percent correct (MPC) for both individual items and sets of items. The results were then examined by interpretation panels (see Chapter 3 for descriptions of Interpretation Panels) who established standards in terms of percent of students answering correctly for two levels of performance which they termed “acceptable” and “desirable”. Using this pre-established range, student performance scores on each test item were assigned a rating on a five-point scale: *strength*, *very satisfactory*, *satisfactory*, *marginally satisfactory* and *weakness*. The ratings were then examined in each of the three domains to identify overall performance in the categories.

The results of the 1977 Reading Assessment indicated that most reading skills in grades 8 and 12 were mastered to a satisfactory level; applied reading skills, a category which required students to read and respond to everyday materials such as newspapers were rated as less than satisfactory. Differences by gender and grade level were noted: girls outperformed boys in every domain. The differences by gender were became slightly greater (0.2%) from grade 8 to grade 12.

The 1980 Reading Assessment

The 1980 Reading Assessment was administered in March of 1980 to approximately 100,000 students in grades 4, 8 and 12. It was designed to collect data regarding the reading skills of BC’s students, their attitudes towards reading, and to gather information from their teachers and administrators about their instructional practices associated with reading instruction. Its main objective was to evaluate BC’s students’ reading skills. Given that the assessment coincided with the introduction of a new provincial reading program at the elementary level, it was expected that the

information collected would establish base-line data on student performance and instructional practices.

The then current Provincial Language Arts Curriculum Guide served as the basis for specifying learning outcomes and goals for the achievement surveys. The objectives were organized into four domains or categories: word attack, word meaning, comprehension and applied reading/study skills. New surveys were generated for this assessment, however they were structured to preserve maximum continuity with the 1977 Reading Assessment. The inclusion of comparison items was designed to enrich the interpretation of results. The comparison items were expanded to include not only items from the 1977 assessment but also a small set of historical items gleaned from the Stanford Achievement Tests and the British Columbia Reading Test 1950. Student achievement tests were published in six booklets, two for each grade level. They were identical in format: a series of multiple choice items which offered four possible solutions plus an "I don't know" option.

Measuring student attitude towards reading was considered one of the main objectives of the 1980 Reading Assessment. The Estes Reading Scale was selected as a suitable scale for collecting this information given its wide-use, documented characteristics and its brevity. (See Appendix 3 for a sample of the Estes Reading Scale.) The Estes Reading Scale preceded the test items in each student booklet at all grade levels. The fifteen statement fixed-response scale is designed to measure attitude towards aspects of reading. Given a statement, the student is expected to express agreement or disagreement on a five-point scale ranging from strongly agree to strongly disagree.

Students were asked to complete a background questionnaire in each booklet prior to completing the test items. This questionnaire was designed

to collect information which was felt to be potentially related to student achievement. Questionnaires regarding the instructional practices and the school context in which reading is taught were constructed for elementary and secondary English teachers and their administrators. These questionnaires were constructed to gather sufficient baseline data for future evaluations on the impact of the implementation of new reading programs.

The scoring of the 1980 Reading Assessment was completed by a technical agency. Test results were reported as Mean Percent Correct for sets of items; individual test items were reported using a "P-value" which represented the percentage of students who responded correctly to a given item. Interpretation of the results was completed by three panels, one for each grade level assessed. Two standards were set regarding levels of performance: "acceptable" and "desirable". Given the test results, the panels then rated each performance using a five-point scale: *weak, marginal, satisfactory, very satisfactory and strong*.

The results of the 1980 Reading Assessment indicated the student performance was rated as "satisfactory" or "very satisfactory" in most domain areas. Concerns were raised by the Interpretation Panel that results were "merely satisfactory" as none of the domains were rated as "strong". Overall, students indicated a positive attitude towards reading. Differences by grade level and gender were noted: at the grade 4 and 8 levels females outperformed males and tended to have more positive attitudes towards reading. At the grade 12 level the only incidence of male and female students achieving equal performance in reading comprehension during the period 1977 through 1998 is noted. Gender differences in attitude became more pronounced through the grades; male students indicated an increasingly more negative attitude towards reading as they progressed from grade to grade. Differences in reading habits and choice of materials were also noted by gender.

The 1984 Reading Assessment

The 1984 Reading Assessment was administered in May of 1984 to approximately 98,000 students in grades 4, 7 and 10. The main purpose of the assessment was to identify the extent to which student were achieving the prescribed learning outcomes in the current Language Arts Curriculum Guide. The design of the 1984 Reading Assessment focused more on reading comprehension skills and less on word attack skills than the two preceding reading assessments. The target grades for assessment were changed due to the introduction of the grade 12 provincial examinations; the secondary level of assessment was changed from grade 12 to grade 10 and the intermediate designated grade was changed from grade 8 to grade 7. The primary level assessment was retained at grade 4.

The 1984 Reading Assessment did not include a teacher/administrator questionnaire, indicating less interest in instructional practices than the two previous assessments. Instead, it expanded its focus to student achievement and attitude surveys. In addition to reporting scores at the school and provincial level, the 1984 Reading Assessment reported scores at district level for the first time.

Using the Language Arts Curriculum Guide, test items were designed to assess three main outcomes: words and expressions, comprehension, and locates/uses information. Student achievement test surveys were published in twelve booklets, four for each grade level. The 1984 Reading Assessment included for the first time a small sample of open-ended items in which 4% of students surveyed were required to write individual answers as opposed to the previously-used census multiple-choice design. Three booklets per grade were multiple-choice design, the fourth booklet was constructed to assess student open-ended response to stimulus materials. Approximately one student per class completed the open-ended booklet.

As in the 1980 Reading Assessment, measuring student attitude towards reading was considered one of the main objectives of the 1984 Reading Assessment. Each of the four booklets developed for each grade level contained a survey on this topic. The surveys differed in content and variety of response: three booklets contained a fixed-response affective scale while the open-ended booklet form elicited written responses to three questions. The fixed-response scales were replicated across grade levels.

They included :

1. The Estes Attitude Scale (Estes, Johnstone, and Richards, 1975)
= 15 statements about reading to which the student responds using a 5 point scale : *strongly agree agree can't decide disagree strongly disagree*
2. Value of Reading Scale (BC Reading Assessment, 1984)
= 10 statements regarding the usefulness of reading to which the student responds using a five point scale: *very useful quite useful can't decide not very useful not at all useful*
3. Reading Enjoyment Scale (BC Reading Assessment, 1984)
= 12 statements regarding the students' enjoyment of reading certain types of reading materials to which the student responds using a five point scale : *like them very much sometimes like them can't decide usually don't like them never read them*

Students were also asked to complete a background questionnaire. Given that no teacher/administrator questionnaire accompanied this assessment, the student questionnaires were expanded to collect information not only on the students' background and but also on their classroom and school characteristics and their future educational plans.

The 1984 Reading Assessment was scored by a technical agency: The Educational Research Institute of British Columbia (ERIBC). The open-ended student achievement booklet was scored by teams of markers using anchored rating scales. Test results were reported in terms of mean percent correct for each item and objective and domain. Associations between background variable and affective scales response item results were calculated by statistical analyses.

Interpretation panels were formed for each grade level and standards were established in terms of percent of students answering correctly two levels of performance: “acceptable” and “desirable”. The performance standards were applied to each test item and then averaged to establish “acceptable” and “desirable” standards for each objective and domain. Student performance was then rated on a five-point scale: *weak, marginally satisfactory, satisfactory, very satisfactory and strong*. The panel ratings were not based on numerical score but rather on the “widely-held expectations” for students on the items for each grade. (Refer to Chapter 3 for the definition of “widely-held expectations”.)

Results of the 1984 Reading Assessment indicated that the reading program in the British Columbia schools was both “sound and basic”. Major findings reported that student achievement was rated as “very satisfactory” in ten of the fourteen domains assessed. Overall, students indicated a relatively positive attitude towards reading and a high level of enjoyment for reading fiction. Differences by gender and grade level were noted in the results: at all levels girls outperformed boys and displayed an more positive attitude towards reading than boys. At all levels males indicated a greater interest in the variety of reading material they reported reading than females who tended to favour fiction.

The British Columbia Reading and Written Assessment 1988

The 1988 Reading Assessment was part of the British Columbia Reading and Written Assessment 1988. It was administered in the spring of 1988 to approximately 111,000 students in grade 4, 7 and 10. Its main objectives were to measure students' achievement in reading, relate this achievement to objectives in the Provincial Language Arts Curriculum Guide and to identify any changes in the student achievement from previous reading assessments (1977, 1980 and 1984).

Objectives taken from the Provincial Language Arts Curriculum Guide were organized into three categories of comprehension: literal, inferential and critical. Student achievement tests were published in six booklets, two for each grade level. One booklet per grade level used a multiple-choice design while the other required students to write extended responses to questions regarding reading passages. The open-ended response booklets were distributed by random sample at each grade level; approximately 26,000 of the 111,000 students completed the written response tests.

Students were asked to complete a background questionnaire in each test booklet. Teachers were also asked to respond to a questionnaire which asked them to rate the importance of each of ten features or activities to their literature/reading programs. In classrooms where the open-ended response booklets were distributed, teachers were asked to respond to an extensive questionnaire about instructional and evaluation practices.

The 1988 Reading Assessment booklets were scored by the contract team, Horizon Research and Evaluation Affiliates. The written response booklets were scored by teams of trained markers; about 150 teachers were involved in this marking. Test results were reported as mean percent correct for each item and groups of items. Interpretation panels were formed for each grade level who, prior to receiving the data results, established two

levels of performance: “acceptable” and “desirable”. Given the test results, the panels then rated the performance on each item using a five-point scale: *strong, very satisfactory, satisfactory, marginal and weak*. Performance for each domain and total test score was interpreted using a four-point scale: *excellent, very good, satisfactory and unsatisfactory*. The percentage of students falling within each category was then identified.

The results of the 1988 Reading Assessment indicated that most students in the province were reading at “acceptable” levels, are more competent over their predecessors over the last ten years and hold extremely positive attitudes towards reading. Overall, large proportions of the students assessed can read and understand basic program material. Differences were noted by grade level and gender. At all grade levels, female students performed significantly better than their male counterparts and expressed more positive attitudes towards reading.

The 1993/1994 Provincial Assessment of Communication Skills

The 1993/1994 Reading Assessment was part of the 1993/1994 Provincial Assessment of Communication Skills. This assessment was designed to collect information about how well BC students would read, write, listen, interpret visual material, draw, and make oral presentations. Its main objectives were to collect information about students’ communication skills, their attitudes towards communication skills and the classroom context in which this occurred. Data was collected through three related studies: The Classical Study, The Classroom Context Study and The Follow-Up Study. Reading and comprehension skills which were assessed and reported in a manner which related most comparably with the data reported during the time period of this thesis are found in “The Classical Study”.

The 1993/1994 Provincial Assessment of Communication Skills had a structure and format which differs widely from the other provincial learning assessments in the Language Arts area. It was designed to reflect the then current perspectives on assessment and instructional practices. In keeping with these perspectives it was designed to be an assessment which was interactive, open-ended and cumulative; it was intended to provide a variety of ways for the students to demonstrate their competence in the assessed area and to participate in shaping outcomes rather than merely identifying correct answers created by test-makers. This assessment did not include any multiple-choice items, the first and only occasion for any Provincial Reading Assessment from 1977 to 1998.

It was the goal of the 1993/1994 Provincial Assessment of Communication Skills to produce authentic data which occurred in the flow of instruction. While this may be perceived as an ambitious and laudable goal, it proved to be one fraught with complexities. For example, a large part of the data collected in the Classroom Context Study could not be scored. As a result, coding teams were forced to discard work submitted in student portfolios due to these scoring difficulties. A sample intended to be geographically representative and gender-balanced was altered by the challenges of scoring the data collected.

The 1993/1994 Provincial Assessment of Communication Skills used a relatively small group of BC students in their sample, instead of using a census approach. This was perceived as practical with regard to the collection of data. The Classical Study involved a random sample of approximately 30,000 students in grades 1 through 12. The Classroom Context Study involved a sample of approximately 2100 students in grades 3, 7 and 10.

The instruments used in the Classroom Context Study and The Classical Study differed widely. The Classical Study was most similar to previous Reading Assessments (1977, 1980, 1984, 1988) in that the booklets used to collect the data were the same for all students who participated in the assessment. The Classroom Context Study collected data which was occurring in 120 different classrooms in 10 school districts and was therefore unique to each classroom. For the purposes of this study, the Classical Study alone will be considered.

The assessment materials were based on the Language Arts goals and learning outcomes found in the provincial curriculum guides in all subject areas. The student achievement booklets were thematically-based, and were designed to be appropriate to age and interest levels. Materials were designed for five grade-level groupings :

primary - grades 1 to 3

early intermediate - grades 4 and 5

middle intermediate - grades 6 and 7

late intermediate - grade 8 to 10

graduation - grades 11 and 12.

Within each set of thematically-based materials developed for each grade grouping from grade 4 through 12, two booklets were developed to assess reading. The reading booklets were designed to assess the students' initial, considered and critical responses to various reading materials, as well as to provide information regarding the strategies students' use when reading. For each theme there were two different reading booklets; for each grade-level grouping there were two different themes. Therefore, there were

four different reading booklets used to assess reading at each grade-level grouping.

Introductory activities and stimulus materials were identical for each booklet form. The format of the reading assessment booklets varied. Reading stimulus passages required responses which ranged from short written answers, drawings and webs to essays, time-lines letters and cartoons. No multiple-choice items were used.

The materials were constructed with attention to compatibility with instructional strategies used in British Columbia classrooms as well as being psychometrically sound. The materials package for each grade-level group included: a teacher guide which included an introduction, administration procedure, ideas for extending the unit, teacher questionnaire and teacher comments section ; a magazine, book, booklet or poster relevant to the theme; and a response booklet. Where two different forms of the reading booklet were developed, each student received one of the two forms; these were distributed on a random and equal basis within each classroom. This portion of the assessment was administered in two sessions. The first session established the context for the reading performance survey which was administered during the second session. The results of the first session were not scored.

One theme was developed to assess the primary grades; two sets of materials around this theme were designed for use in grades 1-2 and grades 2-3. The first set of materials, grades 1-2, required students to respond in a variety of ways to a story read to them by the teacher. The second set of materials, grades 2/3, required students to respond in a variety of written ways to a magazine which was introduced to them by the teacher and which they read themselves.

Students in grades 4 through 12 were asked to respond to a background questionnaire which included many items from previous Provincial Reading Assessments (1980, 1984, 1988). The inclusion of the common items was done to obtain a measure of change over time. To collect data on attitudes towards reading, the Estes Reading Scale was administered. A six item "Strategies for Reading" survey was also developed to collect data on the reading strategies of BC students. Teachers at all grade levels were asked to complete a grade specific questionnaire which requested information regarding the classroom organization, resources, instructional strategies and evaluation procedures employed.

The 1993/1994 Reading Assessment was scored by teams of trained teachers using standardized procedures. Markers were given an annotated version of the Reading Reference Set, a chart developed by the Ministry of Education. This resource was designed to provide a common language for teachers to describe student progress, chart their growth of skill and set performance standards. Interpretation panels were composed of teachers and administrators who established performance standards which identified the assessment scores the majority of students would be expected to achieve at each grade level. Comparing the actual performance with expectations, the panel then made a consensus judgment about the results for each grade level using a five-point scale: *strong, very satisfactory, satisfactory, marginal and weak.*

The results of the 1993/1994 reading assessment indicated that most students demonstrated effective reading skills at each grade level. Differences were noted in the performance of male and female students; female students scored higher than males in reading at all grade levels and expressed more positive attitudes than their male counterparts.

The British Columbia 1998 Assessment of Reading Comprehension and First-Draft Writing

The 1998 Reading Assessment was part of the British Columbia 1998 Assessment of Reading Comprehension and First-draft Writing. It was administered in May of 1998 to approximately 140,000 students in grades 4, 7 and 10. It was designed to assess both reading comprehension and first-draft writing skills of BC students. For the purposes of this study, reading comprehension only will be considered. Its main objective was to measure student achievement in reading comprehension and relate this achievement to provincial standards and expectations and determine the growth of reading skills from grades 4 through 10. The 1998 Reading Assessment marked both the closure of the Provincial Learning Assessment Program and the beginning of the annual Foundation Skills Assessments. Reading and First-Draft Writing were the first to be developed in this format; Numeracy was added in the Foundation Skills Assessment 1999.

The British Columbia 1998 Assessment of Reading Comprehension and First-draft Writing marked the first reporting of student level results. Previously, results had been reported at the provincial and district levels, (1977 and 1980) with the addition of school level results reporting added in 1984. The 1998 student level results were reported to the school district; individual student level results were reported to students and their families for the first time in the Foundation Skills Assessment 2000.

The 1998 Reading Assessment was designed to be inclusive. Its goal was to include as many students as possible in the target grades. Students enrolled in 51 alternate schools and continuing education centers were

included in the provincial assessment for the first time. In addition, included for the first time were students who are considered “un-graded”; they were included in their corresponding age equivalents to students in the target grades. This increased participation rate was intended to provide a more consistent context for interpreting the results.

The Prescribed Learning Outcomes in the English Language Arts Integrated Resource Package (IRP) served as the basis for the item generation on the student surveys. While this IRP had not been fully implemented at the time of the assessment, it had been available in schools since the spring of 1996. The booklets were designed to measure three categories of comprehension: literal, inferential and critical. Six student achievement booklets were published, two for each grade level. At each grade level there was one multiple-choice booklet and one constructed response booklet. All students were asked to complete both booklets over two sessions. Preceding the achievement surveys students were asked to complete a background questionnaire which would later be related to responses on the achievement survey.

Scoring of the student achievement booklets was completed by 250 educators. Geographical representation and gender were considered in the selection of the markers. Rigorous efforts to ensure marker reliability were made; this was evidenced in the structures and protocols implemented in both the selection, training and administration of the marking sessions. Interpretation of the assessment results were approached in a slightly different manner than the previous assessments in this study. The setting of the standards, an integral part of the interpretation process, was completed by panels of teachers with recent experience at the grades 4, 7 and 10 levels. Previously, standard setting teams had been composed of both educators and non-educators. These teams analyzed each item and passage on the reading assessment and set two standards: “expected” and “advanced”. The

interpretation panel, composed of representatives from a variety of organizations, met after the standards had been set by educators. They were presented with the mean percent scores for each grade and the proportion of students meeting each of the standards. The interpretation panel then rated the performance of the each grade using a five-point scale: *weak, marginal, satisfactory, very satisfactory, and excellent.*

The results of the 1998 Reading Assessment indicated that students' achievement in reading comprehension was rated as very satisfactory across the three grade levels. Overall, large proportions of students met or exceeded the expected standard for reading comprehension. Differences in MPC scores and proportions of students not yet meeting, meeting and exceeding grade level expectations were noted in the performance of male and female students: females outperformed males at every grade level.

Chapter Four

Analysis of the Results : The Provincial Reading Assessments

1977 to 1998

In order to analyze the results, it is imperative to first consider how the results of a large-scale assessment such as the Provincial Reading Assessments are determined, interpreted and reported. Following the collection of the data, the complex task of converting raw scores into meaningful results begins. Performance booklets are scored, performance standards are set, the results are interpreted in relation to the performances standards and judgments are made based on that interpretation. These judgments form the basis of the findings and the recommendations put forth by the interpretation panel.

While the exact format of scoring may vary from assessment to assessment, generally a team of markers are trained to score performance booklets with an emphasis on inter-marker reliability. Standards are set for each grade in each domain by another team; this is usually completed without prior knowledge of the performance scores. The comparison of the performance scores to the performance standards is completed by the interpretation panel. This panel is often composed of the same members as the standard setting team. However, the 1998 Reading Assessment deviated from this practice and created distinct standard setting teams from the interpretation panel. In this assessment the standard-setting teams were composed only of educators with recent teaching experience at the target grade. In the past, standard setting teams involved both educators and non-educators.

The composition of interpretation panels and standard setting teams is intended to be representative of those stakeholders who share an interest in the results of the assessment. They generally include teachers, administrators, teacher educators, parent groups, members of the public, elected officials and Ministry personnel, and in the 1998 assessment, members of the business community. The interpretation panel is responsible for reviewing and interpreting the results of the assessment and rating the overall performance of the students at each grade level. The number of people involved in each interpretation panel has varied; interpretation panels have been composed of between 15 and 31 members. Their task is to rate student performance using the scale provided by the standard setting team. This five point scale has remained stable throughout the period 1977 to 1998; only the highest level descriptor has changed, with little effect to the meaning of the scale. (Strength became strong and then changed to excellent.) The rating scale used by interpretation panels is defined as follows:

Weak : student performance is definitely unsatisfactory and indicates a major weakness in the program.

Marginal : Student performance is slightly less than satisfactory. It indicates an area that needs improvement but is not a major weakness.

Satisfactory : Student performance is acceptable. This level of performance would be expected if the program is adequately implemented.

Very Satisfactory : This level of performance indicates a strength in the program. It is the level of performance that might be expected if the program is effectively implemented.

Excellent : This provincial distribution represents outstanding student performance showing definite strength in the program.

This set of definitions was provided by the 1998 Reading Comprehension and First-Draft Writing Assessment Technical Report. Previous technical reports list the five-point rating scale but do not define it. One must assume that the rating scales used repeatedly by provincial assessments generally mean the same thing. That the ratings are congruent is important when looking at the findings of many assessments over time, as in this study.

An Overview of Reading Comprehension Assessment Findings

Table 2: Comparison of Results : Interpretation Panel Ratings of Overall Reading Comprehension

grade	1977	1980	1984	1988	1993	1998
4	<i>not assessed</i>	very sat.	very sat.	very sat.	very sat.	very sat.
7/8	satisfactory	satisfactory	satisfactory	satisfactory	marginal	very sat.
10/12	satisfactory	satisfactory	very sat.	satisfactory	satisfactory	very sat.

Table 2 indicates that overall reading comprehension achievement for the target grade levels may be viewed as relatively stable throughout the period it addresses. While slight increases and decreases occur, reading comprehension achievement on these reading assessments is most often rated as satisfactory. This brings into question the definition of satisfactory: what constitutes satisfactory performance ?

Using the 1998 definition, satisfactory means acceptable. In the 1988 Reading Assessment report, satisfactory is defined as achievement by the

student of the basic curricular goals. It further states that the rating of satisfactory is comprised of a range which encompasses minimally acceptable to fully satisfactory. The 1998 assessment describes this range as “*expected*”. Expected is defined as the level at which a student meets or exceeds the widely-held expectations for the grade on the test. In 1999 the Assessment Working Group further refined this term to be *Meets Expectations (Minimally)* and *Meets Expectations (Fully)*. These descriptors appear to address the range which the 1988 assessment referred to as “*minimally acceptable*” and “*fully satisfactory*”. For the purpose of this thesis, satisfactory will mean acceptable performance for the grade level expectation for the given test.

It is important to note that the designation of satisfactory ultimately rests with the interpretation panel. It is possible that what is determined by one interpretation panel as satisfactory performance may be determined as very satisfactory performance or minimal performance by another interpretation panel. Including previously used items and their performance standards on provincial assessments assists in regulating this possible tendency and increases the validity of result comparison. Also noteworthy is the establishment of the standards by the standard setting teams may vary from assessment to assessment due to the differing nature of the interests represented by the team composition. It must be acknowledged that those who have a vested stake in the outcomes of the assessment set the standards and contribute to the interpretation of student performance.

The following descriptions and analysis of the results of the reading assessments 1977 to 1998 address the area of reading comprehension only. This is because reading comprehension is the sole common feature to these assessments. Data collected in other areas, while interesting and valuable

on their own merit, have been discarded so that a clear picture of the results of reading comprehension assessments may emerge. Results of student achievement and variables of student background and attitude surveys have been included where appropriate and relevant. Specifically, gender will be related to student achievement results. It is acknowledged by the BC Ministry of Education in Reading Assessment Technical Reports (1998 Technical Report, page 1) that the act of reading and making meaning out of what is read is greater than what is viewed as reading comprehension on the PLAP tests. Reading comprehension results on large-scale assessments indicate how well the students performed on the texts provided, and do not assess other aspects of comprehension such as reading freely and widely. (Flood and Lapp, 1991) Flood and Lapp (1991) further state that *“good readers are strategic readers who actively construct meaning as they read.”* It is stated as a position of the Ministry that *“passage comprehension is viewed as the single most direct measure of overall prowess in reading.”* (BC Reading Assessment, 1980) A historical review of the teaching of reading by Squire (1991) identifies the trend in which reading instruction has moved away from an emphasis on fragmented component skills and instead focuses more on a holistic approach in which comprehension plays a major part. As previously noted the PLAP Reading Assessments narrowed their focus from a wide range of reading skills (1977 to 1984) which included items assessing word attack and vocabulary skills to reading comprehension (literal, inferential and critical comprehension). Perhaps for these reasons, reading comprehension has become the focus area for assessing reading in provincial large-scale assessments.

Overall reading comprehension scores are calculated by combining the two or three components of comprehension tested (literal, inferential and

critical) and the instrument design (multiple-choice and written response). Equal weighting is given to comprehension components and tests to produce an overall mean percent correct. A mean percent correct is also reported for each domain of the assessments as well as for individual items and subgroups of the sample group. The interpretation panels compare the overall mean percent correct to previously set standards in order to rate the student performance. As a result, a high mean percent correct score does not in itself guarantee a high rating from the interpretation panel, nor does a low score necessarily result in an unsatisfactory rating. For this reason, it is more important to consider the standards and the interpretation panel ratings than the mean percent correct when comparing results over time. Tables 3 through 5 illustrate this point when comparisons are made with results by grade level from 1977 to 1998. Table 3 demonstrates the most extreme case of this, where the mean percent correct at the grade 4 level varied as much as 19% yet continued to receive the "very satisfactory" designation by the interpretation panel. The mean percent correct becomes important when comparing the performance of different populations within the sample group on the same test. The comparison of mean percent correct scores between male and female performance is integral to this thesis.

Comparing results of reading assessments over time should be done with an awareness of the variations in domains tested, selection of reading passages, item difficulty and the composition of the interpretation panel and standard setting team. Because assessment designs differ in the period 1977 through 1998, tracking student achievement over time is challenging. From 1977 to 1988, the design of the four assessments is relatively similar. The 1998 Assessment of Reading Comprehension and First -Draft Writing, while implementing new approaches to the sample group assessed and rigorous

scoring procedures, retains enough similarity with previous assessments that its results can be related. However, the 1993/1994 Communication Skills Assessment differs so widely from the other assessments it should be considered a stand-alone assessment. The design of the survey, the scoring procedures, the sample group tested and the reporting of results require that it be considered in a different manner than the other reading assessments completed in this period. For this reason, for the purpose of this thesis document in the analysis of results, data from the 1993/1994 Reading Assessment has been discarded.

Reading comprehension results with the background variable of gender are reported in the technical reports in separate chapters from the general results. These chapters usually include all background variables collected by the questionnaires and correlate achievement to the survey questions. The format for reporting this information varied slightly in the six Provincial Reading Assessments which concern this document, but generally reported these results as a comparison of mean percent correct scores. They do not include an item by item analysis of gender achievement, which would be interesting to researchers concerned with questions regarding relationship of gender and genre. It is possible to assume that such data is stored by the Ministry in its data banks from each assessment, but as it was not reported in the Technical Reports suggests that it has not been compiled for use. Whether the raw data is stored in such a manner that it is accessible to present researchers is unclear.

In the 1977 Technical Report, "reading performance as a function of sex" was reported for each of the two grades as a comparison of mean percent correct for each of the three domains of reading tested. In 1980 again "sex and reading achievement" was reported for each of the three grades as a comparison of mean percent correct for each of the four domains of reading

tested. An f-score statistic was also included which related the domain and genders. The 1984 Reading Assessment also reported reading achievement by gender for each of the three grades as a comparison of mean percent correct for each of the four domains of reading tested. In 1988 Reading Achievement scores with selected background characteristics reported gender as a comparison of mean percent correct for overall comprehension for each of the three grades assessed. Standard deviations for the total sample were included, but without the gender variable. The 1993/1994 BC Communications Skills Assessment reported selected mean comprehension scores by gender for some grades and on selected items. The 1998 Reading Assessment reported reading comprehension achievement by gender with a comparison of mean percent scores for both multiple choice items and constructed response items as well as for overall score. The standard deviation for gender on multiple choice items, constructed response items and overall score was also included. The following analysis of results use the data as it was published in each Technical Report.

Analysis of Reading Assessment Results : By Grade Level and with the Gender Variable

Part one : analysis of mean percent correct scores.

The following results from the Provincial Reading Assessments 1977-1998 are reported by grade level. For each grade level tested, the mean percent correct for the overall domain of reading comprehension is reported with the interpretation panel rating for each result in table format. With the addition of the gender variable, the mean percent correct scores are

compared between males and females of the sample group for each grade. This information is represented graphically with the mean percent correct scores rounded to the nearest whole number; precise mean percent scores for these results are listed in tables preceding each figure.

Table 3: Grade 4 Overall Comprehension Results :
Mean Percent Correct and Interpretation Panel Ratings

1977	1980	1984	1988	1993	1998
<i>not assessed</i>	84 %	73 %	71 %	<i>not reported</i>	65%
<i>not assessed</i>	very sat.	very sat.	very sat.	satisfactory	very sat.

Table 3 indicates that while the mean percent correct performance score of grade four students on reading comprehension surveys has declined over the period 1977 to 1998, the ratings have not greatly changed. Grade four students' performance in reading comprehension has been generally rated as very satisfactory during this period.

Table 4 : Grade 4 Overall Comprehension Results:
Mean Percent Correct Sorted By Gender

grade 4	1977	1980	1984	1988	1993	1998
male	not assessed	82.7 %	71.2%	69.6%	not reported	65.1%
female	not assessed	84.0%	73.15%	72.72%	not reported	69.5%

Figure 1 : Grade 4 Overall Comprehension Results :
Mean Percent Correct Sorted By Gender

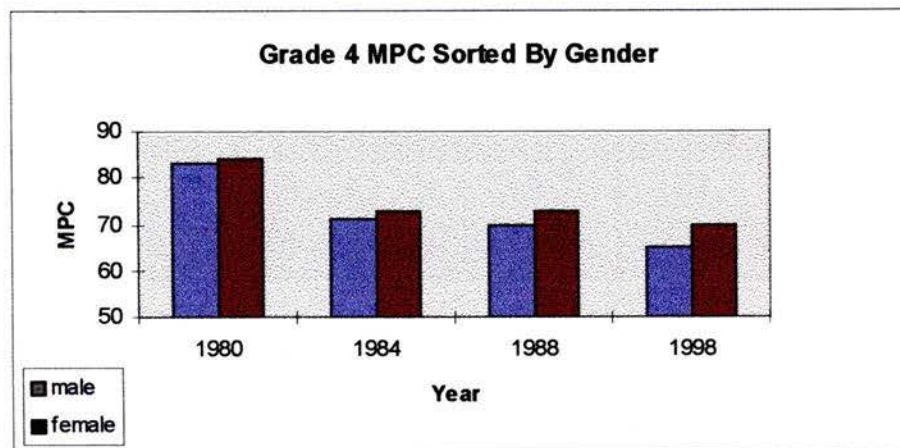


Table 4 and Figure 1 demonstrate that grade 4 females consistently outperform males in overall reading comprehension in the period 1980 through 1998. The rate at which they do so has increased: in 1980 the difference between grade 4 male and female overall MPC was 1.3%, in 1998 the difference is 4.4%.

Table 5: Grade 7/8 Overall Comprehension Results :
Mean Percent Correct and Interpretation Panel Ratings

1977	1980	1984	1988	1993	1998
60%	66%	73.8%	72.9%	not reported	76.46%
satisfactory	satisfactory	satisfactory	very sat.	marginal	very sat.

Table Five indicates that MPC scores for the grade 7/8 level have increased during the period studied. The interpretation panel ratings have

fluctuated, rating overall reading comprehension from marginal to very satisfactory.

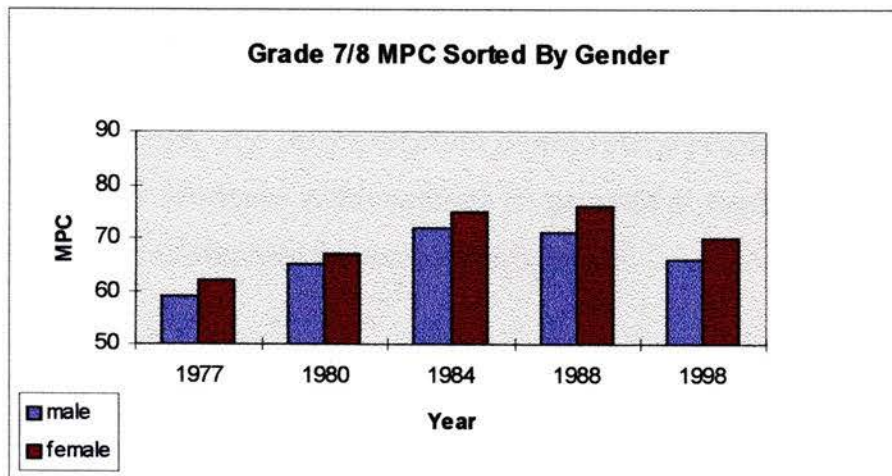
Table 6 : Grade 7/8 Overall Comprehension Results:

Mean Percent Correct Sorted By Gender

<i>grade 7/8</i>	<i>1977</i>	<i>1980</i>	<i>1984</i>	<i>1988</i>	<i>1993</i>	<i>1998</i>
male	58.5%	64.5%	71.68%	70.81%	not reported	65.6%
female	61.6%	67.1%	74.65%	75.81%	not reported	69.8%

Figure 2 : Grade 7/8 Overall Comprehension Results:

Mean Percent Correct Sorted By Gender



Tables 5 and 6 and Figure 2 demonstrate that while MPC scores and interpretation panel ratings have varied, the difference with which males and females perform on the reading assessments does not. Females consistently outperform males in overall reading comprehension scores. These differences have also increased during the period studied; from a difference of 3.1% in 1977 to a high of 5% in 1988, females not only continue

to achieve higher scores on these tests, the rate at which they do so is increasing.

Table 7: Comparison of Grade 10/12 Overall Comprehension Results :
Mean Percent Correct and Interpretation Panel Ratings

1977	1980	1984	1988	1993	1998
69.5%	71%	68.6%	65.4%	<i>not reported</i>	72.6%
satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	very sat.

Table 7 indicates that while MPC scores have varied during the period 1977 to 1998, the interpretation panel rating remained stable. In general, secondary students' achievement on provincial reading assessments has been rated as satisfactory for over twenty years.

Table 8 : Grade 10/12 Overall Comprehension Results:
Mean Percent Correct Sorted By Gender

grade 10/12	1977	1980	1984	1988	1993	1998
male	67.9%	71.6%	67.60%	63.14%	not reported	65.2%
female	71.2%	71.6%	69.88%	67.99%	not reported	71.4%

Figure 3: Grade 10/12 Overall Comprehension Results :
Mean Percent Correct Sorted By Gender

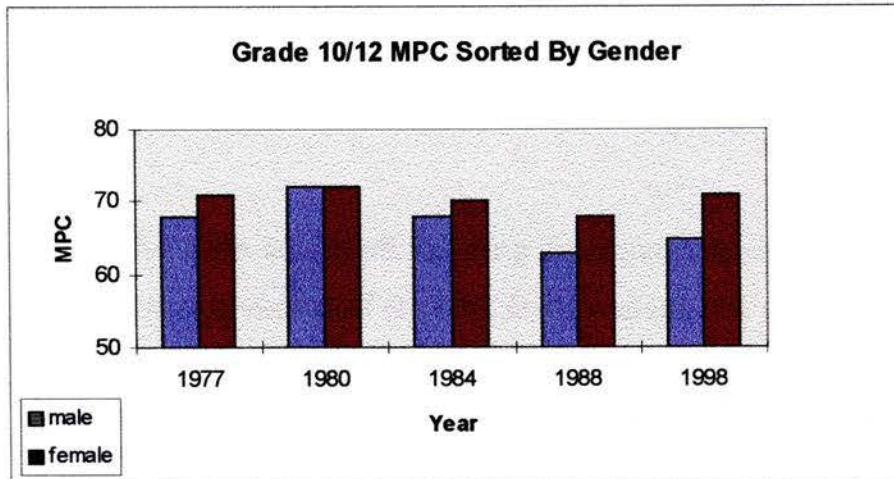


Table 8 and Figure 3 indicate that the difference between male and female overall reading performance on Provincial Reading Assessments has fluctuated during the twenty-one years upon which the data reports. However, females have consistently scored equally or outperformed males on the five assessments. The rate at which they do so has grown; in 1977 the difference between scores was 3.3%, in 1998 it was 6.2%. As previously stated, Figure 3 illustrates the sole occurrence of males and females performing equally in reading comprehension on a Provincial Reading Assessment in the period 1977 to 1998.

From analysis of Tables 3 through 8 and Figures 1 through 3, it is possible to observe that during the period 1977 to 1998 females consistently outperformed males in overall reading comprehension on each assessment and at every grade level (the single exception of the grade 12 students in 1980 noted). The rate at which they do so has not remained stable. The data clearly indicates that over a period of twenty-one years females have not only

maintained their lead over males' reading comprehension skills but that the gap between their performance on provincial reading assessments is widening.

Part two : analysis of results reported by grade level expectations.

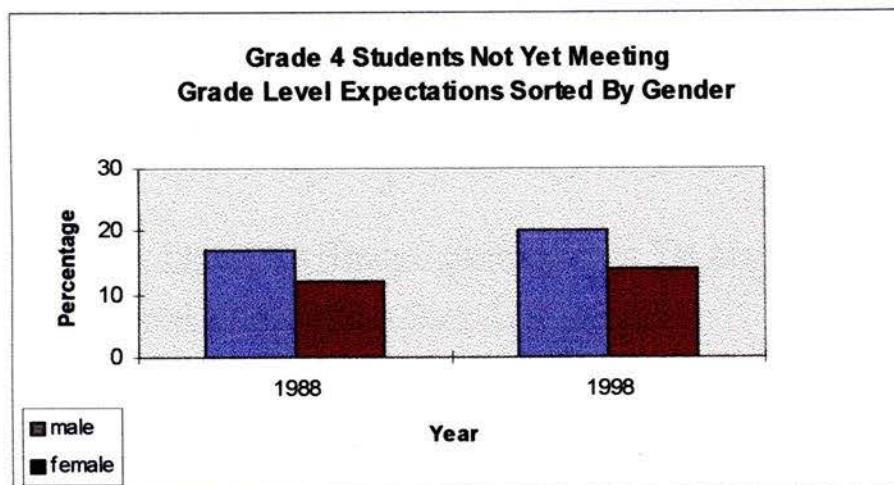
The 1988 and 1998 Reading Assessments reported not only the mean correct percent scores of student achievement but also reported student performance in terms of grade level expectations. These figures represent the proportion of students meeting each standard as opposed to the number of correct responses to a given item or domain (MPC). The following graphs illustrate the degree to which females outperform males in reading comprehension in terms of exceeding grade level expectations, meeting expectations or not yet meeting expectations. Figures 4 through 12 represent the proportion of students in each category as opposed to Figures 1 through 3 which represent the mean percent correct score sorted by gender. In the 1988 Reading Assessment, proportions in terms of gender were only reported for the group performing below the grade level expectations.

The 1988 and 1998 Reading Assessments indicated that about 85% of the grade 4 sample met or exceeded the expectation for reading comprehension at their grade level. Table 9 and Figure 4 show the percentage of males and females of the total population tested who made up the group "*not yet meeting expectations*".

Table 9 : 1988/1998 Grade 4 Students Not Yet Meeting Grade Level Expectations Sorted By Gender

<i>grade 4</i>	<i>1988</i>	<i>1998</i>
males	17%	19.6%
females	12%	14%

Figure 4: 1988/1998 Grade 4 Students Not Yet Meeting Grade Level Expectations Sorted By Gender



Both genders indicate an increase in the number of students who are rated as “*not yet meeting grade level expectations*” over the ten year period reported in Figure 4. The rate at which each group has grown is relatively equal (females by 2%, males by 2.6%). The representation however, by gender, is not equal. Grade 4 males who are considered to be in the “*not yet meeting grade level expectations*” category remain over 5% higher than grade 4 females.

The 1988 and 1998 Reading Assessments indicated that the majority of grade 7 students met or exceeded grade level expectations for Reading Comprehension. Specifically, 92% in 1988 and 86% in 1998. Table 10 and Figure 5 shows the percentage of males and females of the total population who make up the group “*not yet meeting expectations*”.

Table 10 : 1988/1998 Grade 7 Students Not Yet Meeting Grade Level Expectations Sorted By Gender

<i>grade 7</i>	<i>1988</i>	<i>1998</i>
male	25%	16.9%
female	8%	11.5%

Figure 5: 1988/1998 Grade 7 Students Not Yet Meeting Grade Level Expectations Sorted By Gender

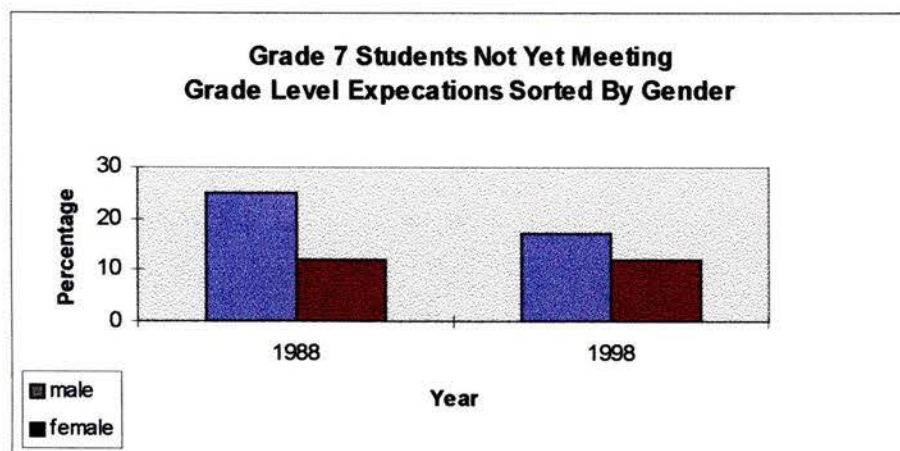


Figure 5 shows that while males continue to be over-represented in the “*not yet meeting grade level expectations*” category, the difference between males and females drew closer together during this period. In 1998 the

difference in representation by gender at the grade 7 level was 5.4% compared with a difference of 17% in 1988.

In the 1988 and 1998 Reading Assessments indicated that about 82% of the grade 10 sample met or exceeded the expectation for reading comprehension at their grade level. Table 11 and Figure 6 show the percentage of males and females of the total population tested who make up the group “*not yet meeting expectations*”.

Table 11 : 1988/1998 Grade 10 Students Not Yet Meeting Grade Level Expectations Sorted By Gender

<i>grade 10</i>	<i>1988</i>	<i>1998</i>
male	22%	22.7%
female	13%	12.4%

Figure 6 : 1988/1998 Grade 10 Students Not Yet Meeting Grade Level Expectations Sorted By Gender

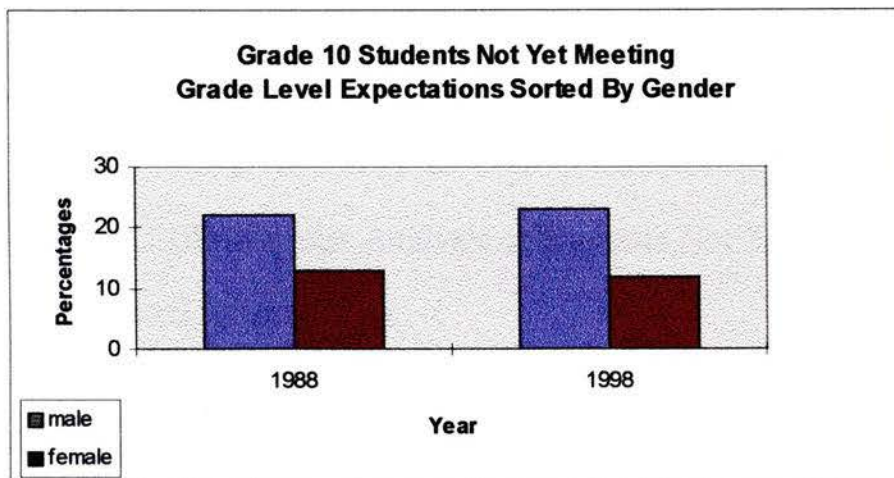


Figure 6 indicates that the number of males and females at the secondary level who are “*not yet meeting grade level expectations*” has remained relatively stable. As in grades 4 and 7, males make up the larger proportion of students who are not performing at the expected skill level for their grade.

These graphs and tables demonstrate that over time and grade level males consistently make up a larger proportion than females of the students whose reading comprehension skills are not meeting the expectations for their grade level. The greatest differences between the performance of males and females in this group occur in grades 7 and 10. In grade 4 the gap is generally about 5%, while in grade 10 the gap increases to a steady level of approximately 9%.

A grade to grade examination of these graphs reveals another trend: the number of females “*not yet meeting grade level expectations*” generally decreases from grade 4 to grade 10 while the number of males in the same group tends to increase. This means that from grade 4 to grade 10 males represent an increasingly larger proportion of all students performing below grade level expectations for reading. The data from the 1988 and 1998 Reading Assessments are organized in Tables 12 and 13, Figures 7 and 8.

Table 12 : 1988 Gender Analysis of Students Not Yet Meeting
Grade Level Expectations

1988	grade 4	grade 7	grade 10
male	17%	25%	22%
female	12%	8%	13%

Figure 7: 1988 Gender Analysis of Students Not Yet Meeting Grade Level Expectations

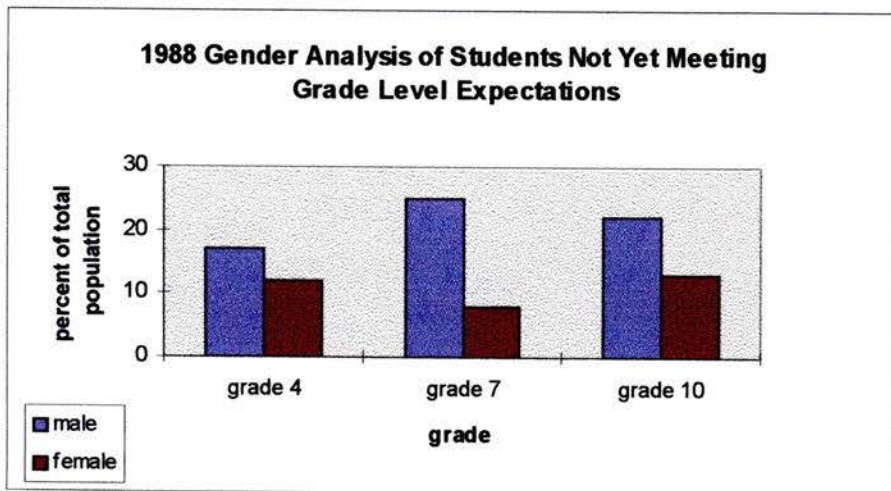
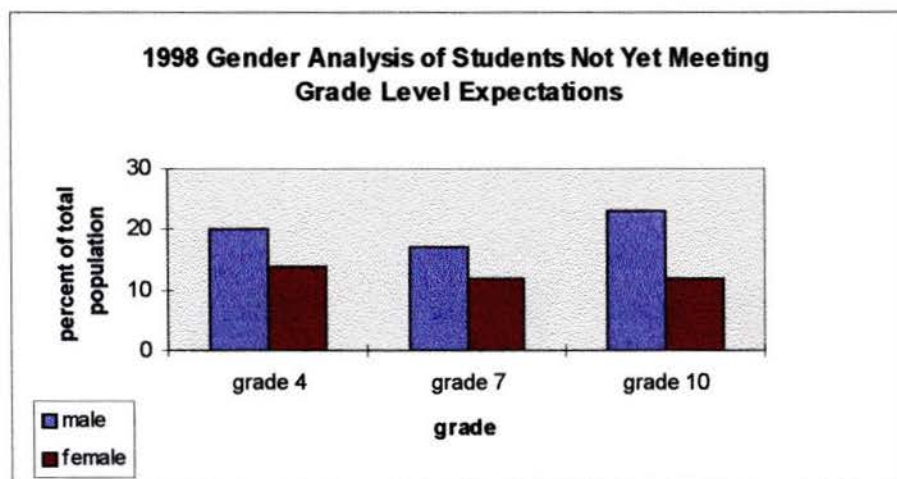


Table 13 : 1998 Gender Analysis of Students Not Yet Meeting Grade Level Expectations

<i>1998</i>	<i>grade 4</i>	<i>grade 7</i>	<i>grade 10</i>
male	19.6%	16.9%	22.7%
female	14.0%	11.5%	12.4%

**Figure 8 : 1998 Gender Analysis of Students Not Yet Meeting
Grade Level Grade Level Expectations**

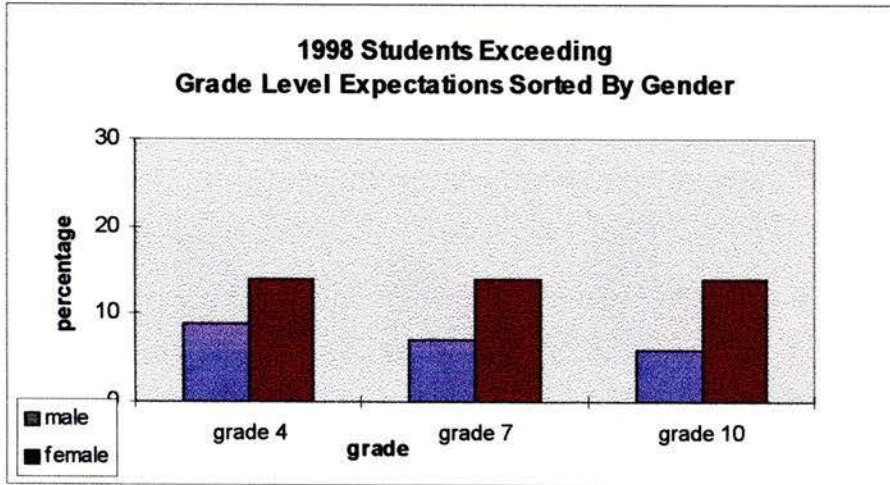


The 1998 Reading Assessment also reported the percentages of students who exceeded grade level expectations with the variable of gender. Figures 9 through 12 and tables 14 through 16 organize this data to illustrate the differences with which male and female students perform on the Provincial Reading Assessments.

**Table 14 : 1998 Students Exceeding Grade Level Expectations
Sorted By Gender**

1998	grade 4	grade 7	grade 10
male	9.0%	7.3%	5%
female	14.4%	14.3%	14%

**Figure 9: 1998 Students Exceeding Grade Level Expectations
Sorted By Gender**

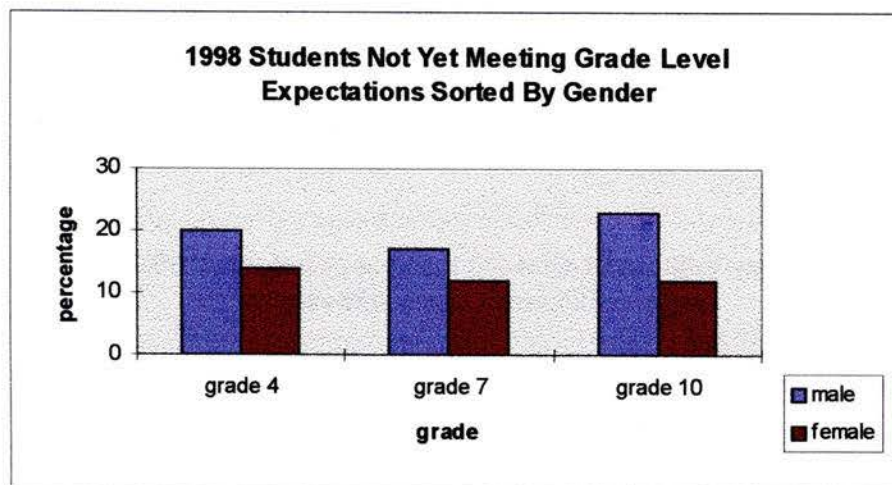


**Table 15 : 1998 Students Not Yet Meeting
Grade Level Expectations Sorted By Gender**

1998	grade 4	grade 7	grade 10
male	19.6%	16.9%	22.7%
female	14.0%	11.5%	12.4%

Figure 10: 1998 Students Not Yet Meeting Grade Level Expectations

Sorted By Gender



In the 1998 Assessment the number of males exceeding grade level expectations in reading comprehension decreased from grade 4 to grade 10 while the number of females in the same group remained constant. When Figure 9 and Figure 10 are considered together, further patterns emerge. Figure 10 demonstrates that in 1998 the ratio of grade 10 males to females who were not yet meeting the grade level standard in reading comprehension skills is close to 2:1. Analysis of the students at the grade 7 and 10 level who are exceeding grade level expectations (Figure 9) exceeds the ratio of 2:1 and its gender representation is reversed. At the grade 7 level two females for every male below standard are performing at or above the advanced standard for their grade. At the grade 10 level almost three females for every male are performing at or above the advanced standard for their grade. Consistently, more females exceed the standard for their grade level than fall below the standard, while in 1998 at the grade 10 level more than four times as many males fail to meet the grade level expectation than exceed it.

Figures 11 and 12 compare the relationship between students who are not yet meeting grade level expectations and those who are exceeding grade level expectations. Exact percentages are found in tables 14 and 15.

Figure 11: Comparison of Students Exceeding and Not Yet Meeting Grade Level Expectations 1998 (Females)

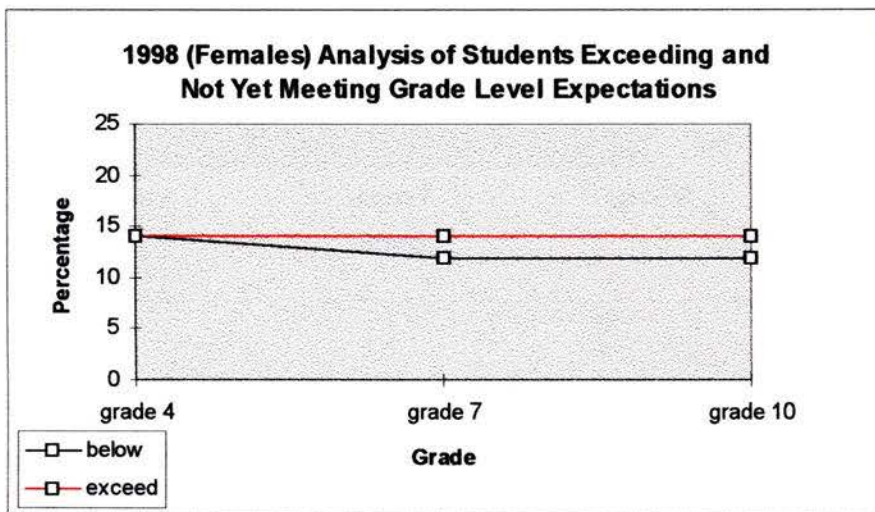


Figure 12: Comparison of Students Exceeding and Not Yet Meeting Grade Level Expectations 1998 (Males)

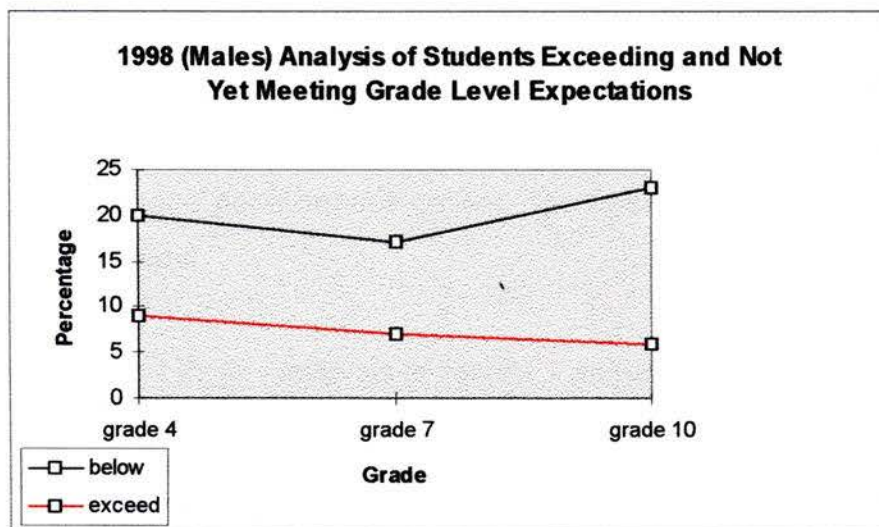


Figure 11 shows the number of females who are exceeding grade level expectations and not yet meeting grade level expectations is quite close. The number of females who exceed grade level expectations is always greater than the number of females who do not yet meet grade level expectations. While the number of females exceeding grade level expectations is stable throughout the grade levels, those who do not yet meet grade level expectations decrease as grade levels progress. In comparison, the number of males in the two performance categories is far apart. There are always significantly more males who do not meet grade level expectations than those who exceed it, and the numbers diverge as the grade level increases. Figures 11 and 12 suggest an interaction between gender, grade level and reading comprehension skills performance on the 1998 Reading Assessment.

Analysis of the data through Figures 1-12 and tables 3-5 indicate that over a twenty-one year period in British Columbia males consistently demonstrated weaker reading comprehension skills than females on Provincial Reading Assessments. Viewing the data as a set over time, it suggests that not only are males maintaining their weaker position, but that the difference between males' and females' reading performance is widening; as the males' performance erodes, the females' reading performance strengthens.

Part three : analysis of results : attitude towards reading and gender.

The Estes Reading Scale was used in four of the six reading assessments during the period 1977 to 1998. It was chosen to collect data regarding students' attitudes toward reading in the 1980, 1984, 1988 and 1993/1994 Provincial Reading Assessments. The Estes Reading Scale was elected for use as a suitable scale for collecting this information because of its wide-use, documented characteristics and its' brevity. It is comprised of fifteen statements to which the student expresses agreement or disagreement on a five point fixed scale ranging from strongly disagree to strongly agree. Figure 13 organizes the data collected in the four assessments. The scores which are listed represent the average response to the fifteen statements; scores ranged from 15 (extremely disagree) to 75 (extremely agree). Tables 17, 18 and 19 organize the scores as reported in the Technical Reports 1980 to 1993/1994. Figure 13 organizes the data in order of grade level by year, differentiating only between male and female scores.

Table 16 : Estes Reading Attitude Survey 1980 to 1993/94Grade 4 Sorted By Gender

Grade 4	1980	1984	1988	1993
male	55.5	53	56.6	55.6
female	57.0	57	60.1	60.3

Table 17: Estes Reading Attitude Survey 1980 to 1993/94Grade 7/8 Sorted By Gender

grade 7/8	1980	1984	1988	1993
male	51.0	53	53.3	52.9
female	57.0	56	58.7	60.1

Table 18: Estes Reading Attitude Survey 1980 to 1993/94Grade 10/12 Sorted By Gender

grade 10/12	1980	1984	1988	1993
male	52.5	51	50.3	49.0
female	58.5	57	57.6	56.3

Figure 13: The Estes Reading Attitude Survey 1980 to 1993/94

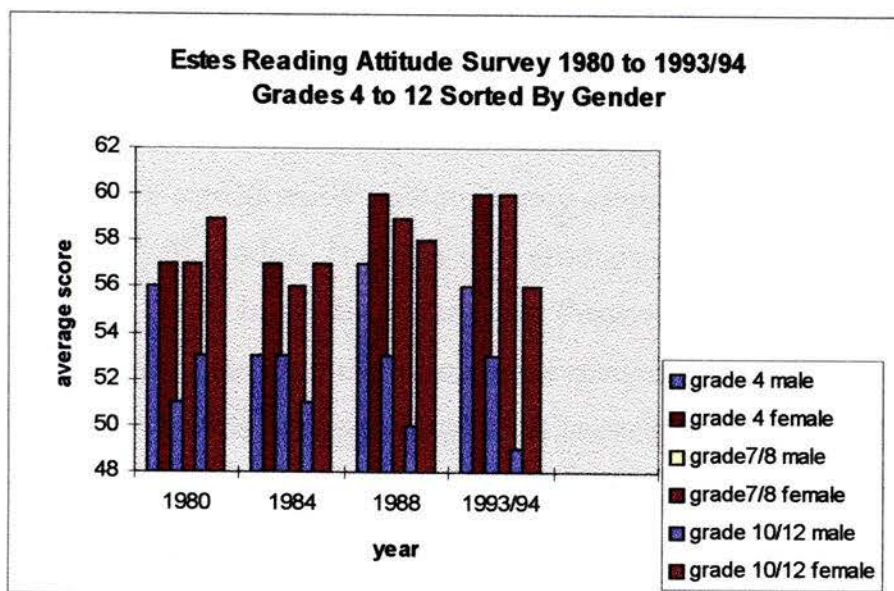


Figure 13 clearly illustrates that over time females consistently indicate a more positive attitude towards reading than males. In general, grade four students, male and female, indicate more positive attitudes towards reading than their secondary school counterparts. Early positive attitudes towards reading indicated by females is more often maintained, or only slightly decreased while male students generally indicate a steady decline in positive attitude towards reading from grade 4 to grade 10/12. Males start off with more positive attitudes towards reading in their early literacy years and as they become more proficient readers, their attitude towards reading becomes more negative. Further reflection on this trend suggests that something happens between grade 4 and grade 7 which contributes to a negative attitude towards reading by males which does not happen to females.

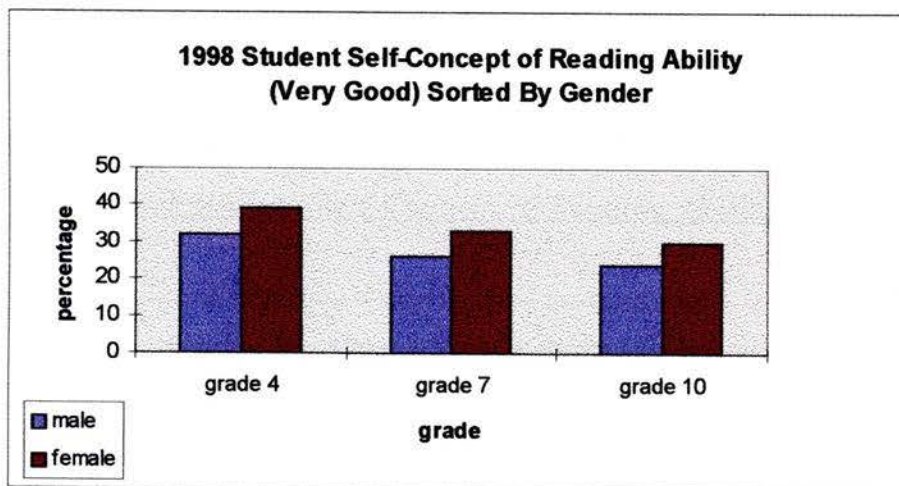
Both the 1980 and the 1993/1994 Reading Assessments reported an analysis of correlation between attitude towards reading and reading comprehension achievement. The 1980 Reading Assessment reported that this analysis indicated that a relationship did exist, however modest. The 1993/1994 assessment reported that the Estes Reading Attitude Survey scores are significantly and positively correlated with reading composite scores at all grades. It states that students who enjoy reading more tend to perform better in reading activities. Positive attitudes towards reading are associated with higher reading achievement; more negative attitudes towards reading are associated with lower achievement. That males consistently exhibit more negative attitudes towards reading than females is related to their weaker performance on Provincial Reading Assessments.

The 1998 Reading Assessment collected data regarding student self-concept of reading ability. Self-concept was defined as the students' belief about how well they can do something. The information collected demonstrated that there were differences between how males and females believed they could read. Males have a poorer self-concept of their reading ability than females. Both males' and females' belief in their reading ability declines from grade 4 to grade 10; however, males demonstrated a greater decline. Not only do males start out with a lower self-concept than females, the difference increases with grade level. Figure 14 illustrates student self-concept of reading ability for those students who rated themselves as very good readers.

**Table 19: 1998 Student Self-Concept of Reading Ability
(Very Good) Sorted by Gender**

	<i>grade 4</i>	<i>grade 7</i>	<i>grade 10</i>
male	31.9	26.3	23.5
female	39.3	32.6	29.5

**Figure 14 : 1998 Student Self-Concept of Reading Ability
(Very Good) Sorted by Gender**



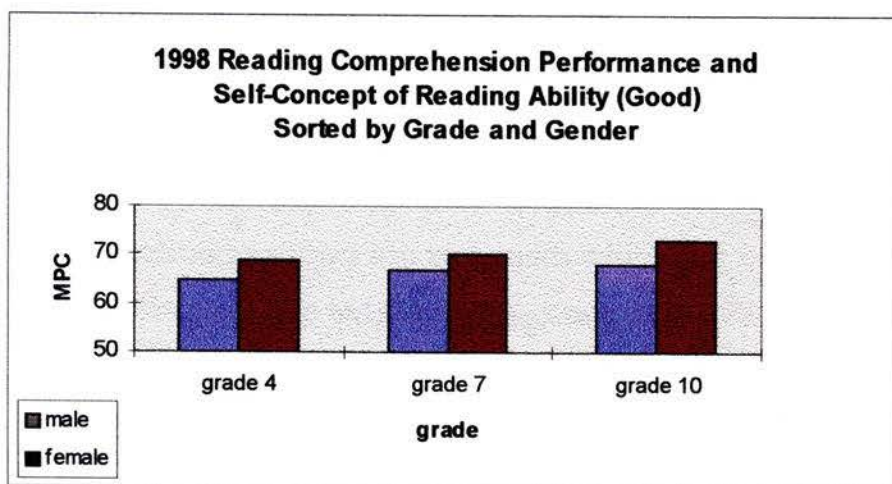
The 1998 Reading Assessment correlated student self-concept of reading ability with reading comprehension performance. This analysis indicated that males and females have different standards of what it means to be a good reader. Females who rated themselves as average or good readers achieved higher performance scores than males who rated themselves as average or good readers. It was suggested that either males are more optimistic than females and hence tend to believe they read better than they actually do, or their perception of their reading ability is influenced by the performance of other males. Figure 15 illustrates the

correlation between reading achievement, gender and student self-concept of reading ability for those students who rated themselves as good readers.

Table 20 : 1998 Reading Comprehension Performance Correlated with Gender and Student Self-Concept of Reading Ability (Good)

	<i>grade 4</i>	<i>grade 7</i>	<i>grade 10</i>
male	65.0	66.5	67.6
female	68.5	69.6	72.6

Figure 15: 1998 Reading Comprehension Performance Correlated with gender and Student Self-Concept of Reading Ability (Good)



In conclusion, data from twenty-one years of Provincial Reading Assessments indicates that females have more positive attitudes towards reading than males. When attitude is correlated with reading performance, it is perceived to have a relationship. When student self-concept of reading ability is correlated with reading performance, it is perceived to have a

relationship. However moderate these relationships may be, they gain significance in light of the gender differences in reading performance.

Part four : analysis of results : reading habits and gender.

The six Provincial Reading Assessments which provide the data for this document collected information regarding reading habits by way of the student background questionnaires. While not every assessment reports the information collected on reading habits in the same manner, the conclusions drawn from the data are remarkably similar. All assessments report data which indicates that males and females have different reading habits. Responses to the questions regarding preferred reading material on the background questionnaires indicate that males and females choose to read different kinds of texts.

Figures 16 and 17 indicate the difference between males' and females' reading material preferences as collected on the 1980 Reading Assessment. The percentages shown are responses which fall in the "3 to 4 times per week" category, the only category common to questions on each material type.

Table 21 : 1980 Reading Habits of Grade 8 Students

<i>grade 8</i>	<i>magazines</i>	<i>comics</i>	<i>newspapers</i>
male	23 %	24 %	24 %
female	17 %	18 %	22 %

Figure 16: 1980 Reading Habits of Grade 8 Students

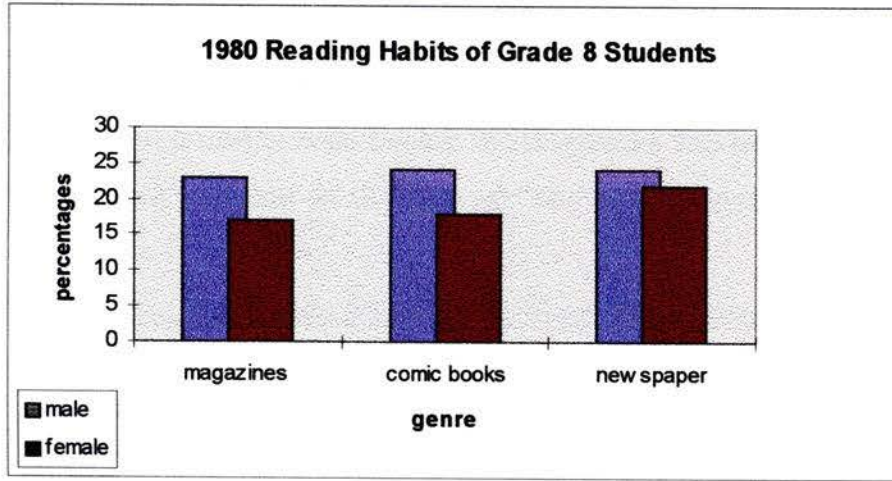
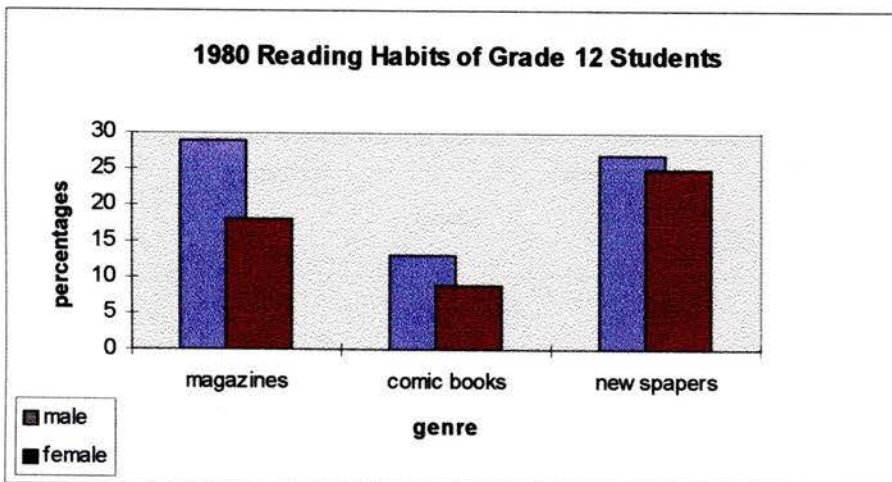


Table 22 : 1980 Reading Habits of Grade 12 Students

<i>grade 12</i>	<i>magazines</i>	<i>comics</i>	<i>newspapers</i>
male	29 %	13 %	27 %
female	18 %	9 %	25 %

Figure 17: The Reading Habits of Grade 12 Students 1980



Figures 16 and 17 and Tables 21 and 22 demonstrate that males in both grade 8 and 12 prefer to read materials other than books much more than do females. Figure 18 and Table 23 show the difference with which males and females read books; it illustrates the response to the number of books read per year at the rate of “one or more per month”.

Table 23 : 1980 Grade 8 and 12 Student Book Reading Frequency

	<i>grade 8</i>	<i>grade 12</i>
male	23 %	15 %
female	39 %	28 %

Figure 18: The Book Reading Frequency of Grade 8 and 12 Students 1980

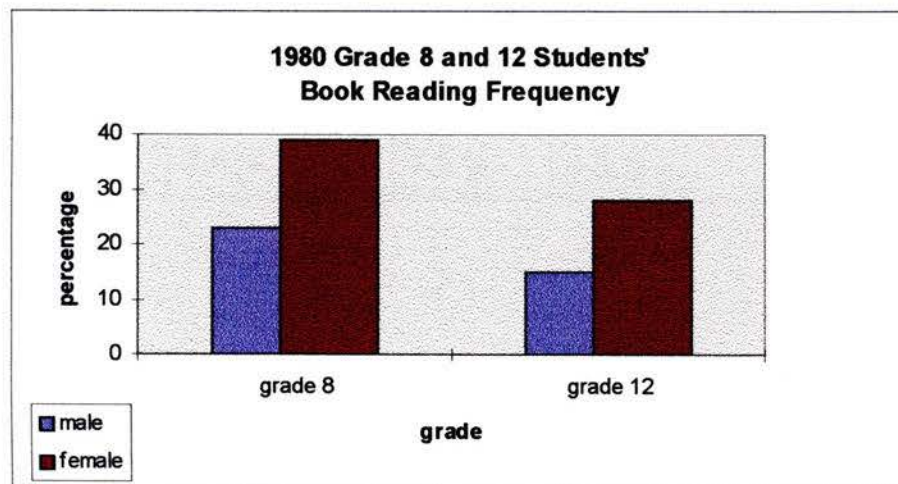


Figure 18 demonstrates that at both grade levels females show a marked preference for reading books compared to males. From Figures 16, 17 and 18 it can be seen that there exists pronounced differences between what males and females choose to read. Males tend to read more magazines,

comic books and newspapers while females tend to read more books. The latter difference is the greatest.

The 1984 Reading Assessment collected information about student reading preferences by way of open-ended surveys which were distributed randomly to 4% of the students who participated in the assessment. Answers were categorized in consultation with teacher-librarians, classroom teachers and representatives of the Vancouver and Richmond Public Libraries. These results were reported with the gender variable. Figures 19 through 22 report the reading preferences by grade with the gender variable. Entries are percent of responses per category.

Table 24 : 1984 Grade 4 Preferred Reading Material
Sorted By Gender

<i>grade 4</i>	<i>magazines</i>	<i>comics</i>	<i>newspapers</i>
male	4.0 %	26.0 %	0.0 %
female	2.6 %	4.5 %	4.5 %

Figure 19: 1984 Preferred Reading Material of Grade 4 Students
Sorted By Gender

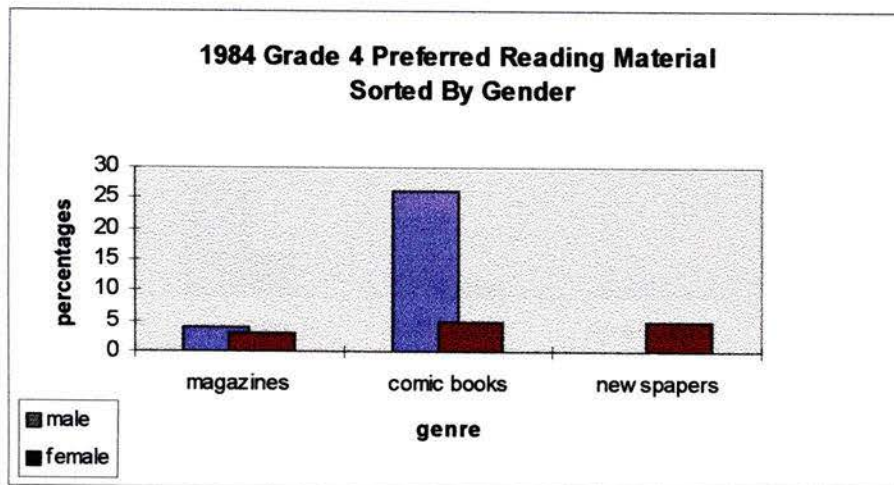


Table 25 : 1984 Grade 7 Preferred Reading Material Sorted By Gender

<i>grade 7</i>	<i>magazines</i>	<i>comics</i>	<i>newspapers</i>
male	18.9 %	6.6 %	2.5 %
female	6.9 %	1.7 %	0.6 %

Figure 20: 1984 Preferred Reading Material of Grade 7 Students

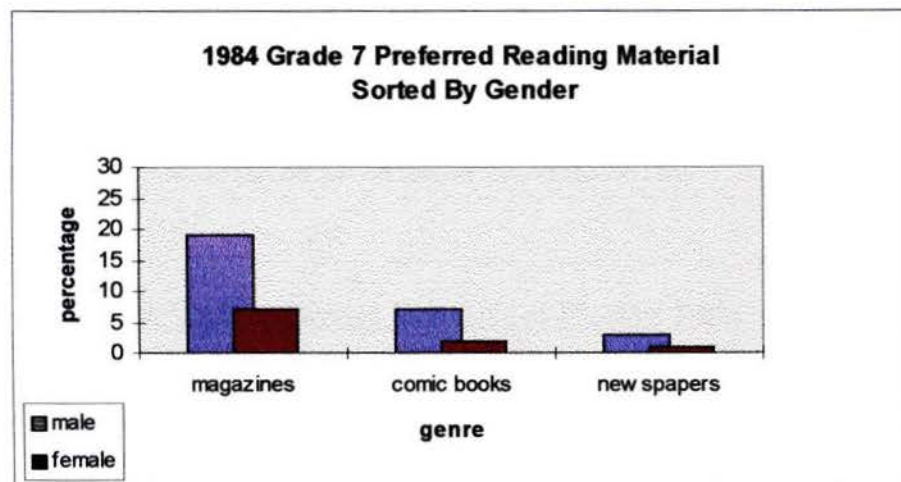


Table 26 : 1984 Grade 10 Preferred Reading Material Sorted By Gender

<i>grade 10</i>	<i>magazines</i>	<i>comics</i>	<i>newspapers</i>
male	25.5 %	1.4 %	8.5 %
female	13.4 %	0.6 %	2.4 %

Figure 21: 1984 Preferred Reading Material of Grade 10 Students

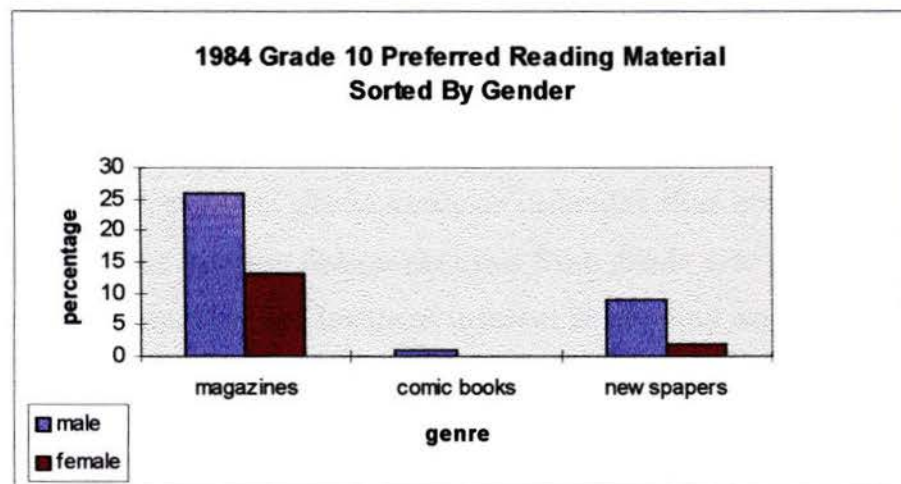
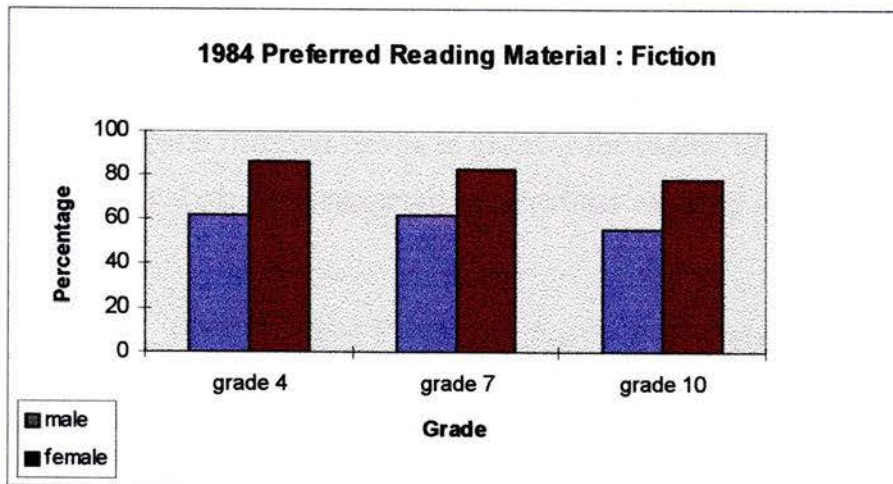


Table 27 : 1984 Preferred Reading Material : Fiction

1984	grade 4	grade 7	grade 10
male	62.1 %	61.9 %	55.2 %
female	85.9 %	82.8 %	77.9 %

Figure 22: The Preferred Reading of Fiction 1984



Figures 19 through 22 and Tables 24 through 27 indicate that in comparison to females, males at all grade levels have a marked preference for reading materials other than fiction books. Females indicate a clear preference for reading fiction over any other type of reading material at all grades. A grade to grade analysis indicates that both males' and females' interest in reading fiction declines from grade 4 to grade 10. Generally, males report higher levels of interest in reading any type of material in grades 4 and 7 than they do in grade 10, while females continue to indicate a more stable interest in reading from grade 4 to grade 10. As in the 1980

Reading Assessment, data from the 1984 Reading Assessment indicates a pronounced difference in the reading habits of males and females.

Figures 23 through 26 and Tables 28 through 31 illustrate the results of the data collected by the 1998 Reading Assessment. As in the results collected by previous reading assessments, males indicate a preference for a wider variety of reading materials than do females. Of interest in these data is the female students' interest in magazine reading which was not indicated in previous assessments. Again, females continue to indicate a stronger preference for reading fiction than males. Again, we see a decrease in interest of reading for both males and females from grade 4 to grade 10. The rate as which interest drops is greater for males than for females which is consistent with data reported in previous reading assessments.

Table 28 : 1998 Grade 4 Preferred Reading Material Sorted By Gender

<i>grade 4</i>	<i>magazines</i>	<i>comic books</i>	<i>newspapers</i>
male	39.1%	62.8%	19.0%
female	42.5%	48.5%	13.9%

Figure 23: 1998 Preferred Reading Material of Grade 4 Students

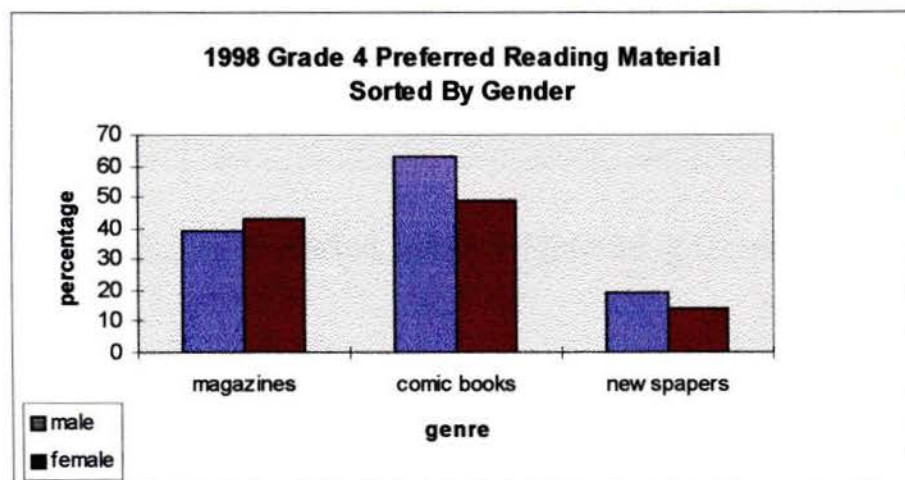


Table 29: 1998 Grade 7 Preferred Reading Material Sorted By Gender

<i>grade 7</i>	<i>magazines</i>	<i>comic books</i>	<i>newspapers</i>
male	55.1%	48.4%	24.2%
female	69.3%	33.4%	16.0%

Figure 24: The Preferred Reading Material of Grade 7 Students 1998

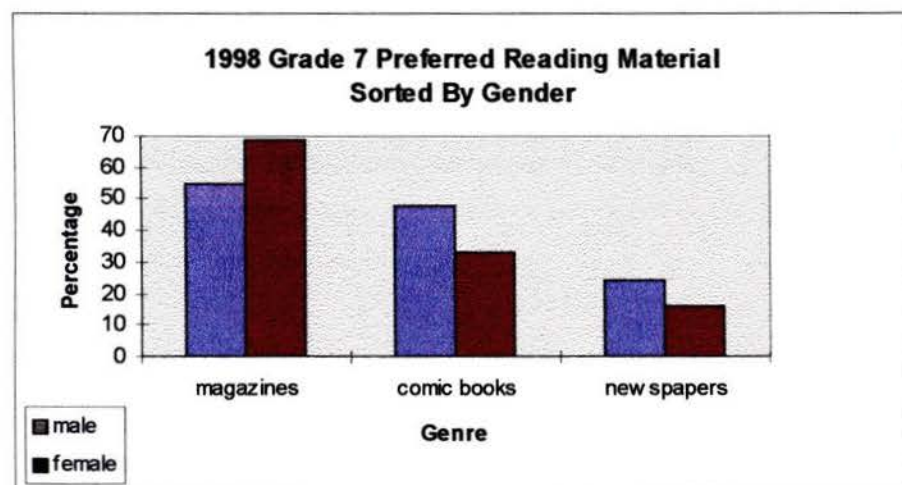
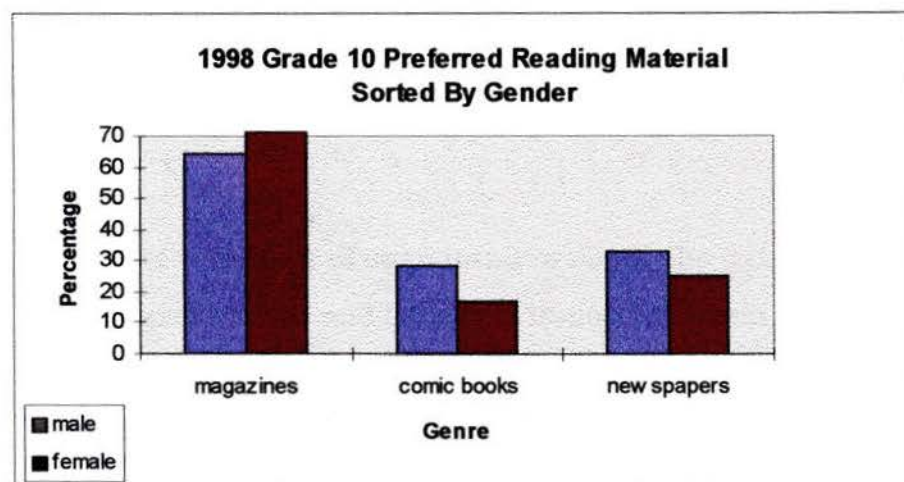


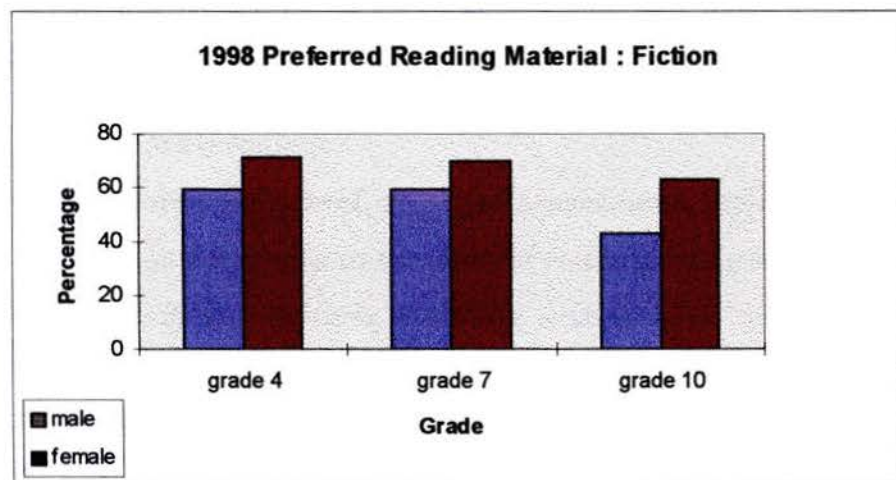
Table 30 : 1998 Grade 10 Preferred Reading Material Sorted By Gender

<i>grade 10</i>	<i>magazines</i>	<i>comic books</i>	<i>newspapers</i>
male	64.4%	28.0%	32.7%
female	71.2%	16.8%	24.6%

Figure 25: The Preferred Reading Material of Grade 10 Students 1998**Table 31 : 1998 Preferred Reading Material : Fiction**

<i>1998</i>	<i>grade 4</i>	<i>grade 7</i>	<i>grade 10</i>
male	59.3%	58.5%	43.2%
female	70.9%	70.2%	62.8%

Figure 26: The Preferred Reading of Fiction 1998



The relevance of examining in detail the data collected regarding reading preferences and gender is important when considering a correlation of achievement with reading habits. It is commonly assumed that the frequency and type of reading preferred by students is closely associated with success in reading. Reading Assessment Technical Reports indicate this assumption to be true: relationships are revealed between the frequency of reading, type of reading material and achievement.

“Those who read comics each day score lowest; those who read them infrequently achieve better.” (1980)

“At all grades, students who chose to read novels or short stories receive higher composite reading scores than students who do not. The strength of this relationship appears to increase as students progress through school. Students who choose to read comics tend to receive lower reading scores than other students.” (1993/1994)

“In all three grades, students who reported that they like to read Fiction Books, Non-Fiction Books or Newspapers had a mean reading comprehension score that was higher than the overall average for that grade.” (1998)

Summary of Analysis of Results

Analysis of the data collected by the six Provincial Reading Assessments 1977 to 1998 suggests certain trends which relate gender with reading achievement.

1. At every grade level, on every assessment, females outperform males on reading assessments in the area of reading comprehension. The difference with which they do so is widening with time.
2. Males represent a greater proportion of the students who are considered "*not yet meeting grade level expectations*" in the area of reading comprehension skills at every grade level. Their representation in this category increases from grade 4 to grade 10.
3. Females have a more positive attitude towards reading than males. This is relevant when the correlation is made that ties positive attitude to higher reading scores on assessments.
4. Males and females exhibit differences in reading habits, both in the type of material they choose to read and the frequency with which they read. This is relevant when the correlation is made that connects the genre of reading selected to higher reading scores on assessments.
5. Males believe they are better readers than their test scores indicate. This is relevant when self-concept is related to test scores.

These trends confirm that there are differences by gender in performance on Provincial Reading Assessments. As previously stated, Provincial Reading Assessments are designed to give an indication of the reading skills mastered by the students in the province. They are designed to focus on core skills fundamental to the curriculum, such as reading comprehension, in order to provide information necessary to provincial

program assessment. Large-scale assessments by their nature cannot take into account the subtle nuance of student performance discernible by teachers in classrooms and schools. Instead, they provide an indication of general trends and patterns which can assist in understanding what is taking place at a provincial level in student learning. It is not the purpose of this document to attach meaning to specific items on any specific assessment but rather to view the longitudinal data, its resulting patterns and to summarize these as trends. That large-scale assessment provides a limited view of any program is readily acknowledged by the researcher, and the results of the findings are viewed within these parameters.

Given that the six assessments represent a sample of close to 600,000 students spanning a period of twenty-one years, trends which emerge from the data analysis should be worthy of attention and consideration. The results indicate that over a period of twenty-one years, males do not perform on Provincial Reading Assessments to the same level of success that their female counterparts do. The results indicate that the difference with which males and females perform on reading assessments has not remained stable. The rate at which females outperform males is increasing. This suggests that some variables are at play which either promote the success of females in acquiring reading skills or inhibit males' acquisition of reading skills, or perhaps a combination of the two. Identifying the variable or variables which contribute to the inequity with which males and females achieve success on reading assessments will be addressed in the subsequent sections.

It is important to note that the Interpretation Panels of many Provincial Reading Assessments address the difference in achievement between males and females in the recommendation section of their reports.

"Based on the data it is recommended that a study on sex differences in academic achievement be conducted to determine whether or not a bias in favor of either sexes exists in schools in British Columbia. Should such a bias be found to exist, then further study to determine the nature of such a bias should be undertaken." (1977)

"Given the results and conclusions presented, it is recommended that teachers of all subject areas direct special efforts towards fostering positive attitudes and increased reading among boys in the intermediate and secondary grades. The diversity of reading interests among these students must be recognized: the traditional emphasis on the novel as the basic recreational reading genre may be inappropriate for many of these students who display a strong interest in nonfiction and periodicals." (1984)

"It is recommended that those involved in education in British Columbia direct attention to monitor programs and materials to ensure that there is no gender bias which might be a disadvantage to male students." (1988)

"It is recommended that high priority will be given to focus on early intervention for students at risk - interventions in the community, the home and the early years at school." (Males at all grade levels were identified as "students at risk" due to their lower scores and less positive attitudes than their female counterparts.) (1993/1994)

"Teachers, schools and school districts should consider developing and implementing intervention strategies to address gender differences in reading comprehension." (1998)

These recommendations were made by Interpretation Panels who noted the differences between male and female student achievement on a specific assessment; the recommendations were not made with reference to other assessments. That the Interpretation Panels of the Reading Assessments 1977-1998 recommend further study and/or the implementation of intervention strategies to address the gender differences in reading

comprehension indicates both an acknowledgment and concern regarding this issue by educators in British Columbia for twenty-one years.

Chapter Five

Possible Explanations: A Connection of Findings to Research

Findings from the analysis of the Provincial Learning Assessments in Reading 1977 to 1998 clearly demonstrate that differences do exist between male and female reading comprehension performance on large-scale assessments. The findings have shown that a performance gap exists between genders and this gap is widening with time. As students move from grade 4 to grade 10 males an increasingly larger proportion of males do not meet grade level expectations.

Research into gender differences and reading indicates that there are a variety of factors which contribute to the inequities of student performance by gender in reading. Analysis of these factors generates possible explanations for the differences with which males and females achieve success in reading. Explanations are based on a variety of models which vary in theory from biological origins, social and cultural factors to pedagogical influences. More precisely, possible explanations include examinations of social construction of gender and its relationship to literacy activities, biological differences between genders in maturation and brain processing, bias in classroom interactions and test bias and its effect with characteristics of gender.

Within the confines of this document it is not possible to fully address or explore all of these explanations and their potential impact on assessment results. Given that one of the main objectives of the Provincial Learning Assessments is to identify some of the strengths and weaknesses of the BC school system, this discussion will focus on factors of a curricular nature and their implications for teaching practice. A closer look at the context in which reading instruction takes place and the type of materials used therein

follows. The social construction of gender is considered in this curricular context.

Part one: the social and instructional context for reading.

Explanations of a curricular nature for the differences between male and female achievement in reading would not be complete without consideration of the environment in which the curriculum is placed. It is widely accepted that schools and classrooms are representative of the larger society and the culture in which they exist (Barrs & Pidgeon, 1994; Daly, 1999; Flynn, 1991; Gambell & Hunter, 2000; Gilbert & Rowe, 1989; Martino, 1995; Millard, 1997; Murphy & Gipps, 1996; Stanworth, 1983; Swift, 1995). *"The interactions between the teacher, knowledge, curriculum content and student learning are all related to the society beyond"* (Daly 1999, p. 9). Differences in male and female reading achievement can be attributed to the implicit gendered nature of teaching and of the classrooms in which teaching takes place. Given that gender equity in education has been a concern for educators over recent years, research has been completed which establishes the role of the teacher and their interaction with students to be paramount in promoting equity between genders in the classroom. While strategies to encourage such equity may have been effectively implemented in most BC schools over the last twenty years, it can not address the gender specific roles and expectations students bring with them into the classroom. *"Schools may attempt to implement gender neutral classrooms and pedagogical practices but children will maintain and value gender segregation regardless of what the teacher does. Literacy is the tacit vehicle for children to perpetuate gender segregation"* (Gambell and Hunter, 2000, p. 695).

Long before students enter schools, societal expectations for appropriate role behavior is established by the significant people in their lives (Barrs & Pidgeon, 1994). The expectations for certain behaviors contribute greatly to the formation of gender identity and, in turn, these expectations interact with how students both view themselves as readers and how appropriate reading is as a behavior for their gender (Ellis in Barrs & Pidgeon, 1994). Thus, the social construction of gender and what it means to be male or female in our society must be included when considering aspects of curriculum and gender. Students enter the school system with conscious notions of gender appropriate roles and behaviors and this affects the way in which the curriculum is perceived (Bank et al, 1980; Barrs, 1994; Millard, 1997).

Interest in the gendered construction of knowledge and how this affects pedagogy has gained recognition from educators and researchers alike in recent years. (Alloway & Gilbert, 1996; Barrs & Pidgeon, 1994; Bouchard & St. Armand, 2000; Connell, 1989; Daly, 1999; Flynn, 1991; Gambell & Hunter, 1999; Gilbert & Rowe, 1989; Martino, 1998; Millard, 1997; Murphy & Gipps, 1996) The concept of the gendered construction of knowledge is based in the constructivist view of learning where the student is seen as an active constructor of their own world view who links new information to their existing knowledge structures; gender identity - the socially constructed maleness or femaleness internalized by the individual - will play a major influence on the learning behavior of the individual (Gilbert & Rowe, 1989; Gipps, 1996; Millard, 1997).

As the focus subject area in this document is reading, specifically reading comprehension, recognition is required that the subject of reading itself is not gender neutral. Reading is often perceived as a feminine subject, therefore undesirable and unattractive to males (Alloway and Gilbert, 1996; Barrs, 1994; Daly, 1999; Gambell and Hunter, 2000; Helfeldt, 1983; Kelly, 1996; Shapiro, 1990; Swift, 1995). Research in elementary school behaviors

noted that by second grade males had learned to “*expunge anything in their behaviors, emotions, and tastes that could be remotely construed as feminine*” (Best, 1983 in Gambell and Hunter, 2000, p. 697). If reading is commonly viewed as primarily a female practice, and young male students wish to distance themselves from anything feminine it is logical to presume this would affect their reading skill development. “*Research has indicated that in this culture reading is sex typed as a feminine activity and this sex-role standard has negatively impacted boys’ achievement in reading*” (Kelly, 1986, p. 248).

Extending the belief that reading is viewed as a feminine activity, implicit expectations on the part of the parent and the teacher could give rise to the perception that boys may not be interested in reading (Swift, 1995). This too could effect classroom interaction, pedagogical practice and students’ success in becoming readers. Current research reports that interaction between teachers and students, despite efforts to create a gender neutral classroom, remain characterized by differential treatment for male and females (Gambell & Hunter, 2000; Swift, 1995). This gendered nature of classroom interaction is described as one where males receive more frequent attention than females, and the interaction they receive is of a different intensity and purpose. “*Typically, the classroom interaction research shows that males get more attention than females at all levels of the school system, even when the teachers are predominantly female*” (Gambell and Hunter, 2000, p. 696).

While it would appear logical to expect that more teacher attention would enhance academic achievement, it is the nature of the interaction which is relevant. Often, the interaction between teachers and male students is for management purposes instead of the instructional purposes which characterize the nature of much of the interaction between teachers and their female students (Gambell & Hunter, 2000; Swift, 1995).

Management-oriented interaction reinforces gender roles: males are viewed as active, aggressive and competitive while females are viewed as quiet, cooperative and conforming to school expectations. Again, norms for school behavior become polarized to masculine or feminine attributes and result in a gendered interaction system within the “gender neutral” classroom (Sadker and Sadker, in Gambell and Hunter, 2000, p. 696). This affects acquisition of and success with reading skills. *“The problem for education and literacy learning is that in coeducational settings being good at school work is more often construed as an attribute of girls”* (Millard, 1997, p. 25). As a result, being “academic or nonacademic” is associated with being feminine or masculine. In some extremes, researchers describe the average adolescent male as one who not only rejects academic attainment as inappropriate for himself, but actively strives to undermine the academic success of other males (Millard, 1997; Swift 1995).

It is also necessary to recognize that teachers themselves, despite efforts to provide a gender neutral classroom context and teaching practice, are males or females who are readers with their own preferences. Teachers are not neutral and may unconsciously convey a view that some kinds of reading are more important than others (Barrs, 1994). *“Literacy teaching at school is not a neutral set of pedagogies and practices”* (Alloway & Gilbert, 1996, p. 41).

Research in this area also explores the issue of the feminization of the teaching workforce and discusses whether the high representation of females in the teaching profession influences the type of reading materials selected for study and how this may effect male and female reading achievement. (Gambell and Hunter, 2000) In the IEP Study of Reading in 32 Countries (in which the Canadian sample population was from BC) when the gender of teachers was correlated with student achievement results it was noted that the gender gap was most pronounced in those countries with high

percentages of female teachers. (Elley, 1994). However, a weak tendency was also noted which indicated that higher than average reading scores were obtained in education systems with a high proportion of female teachers. Further analysis revealed that female teachers had students with significantly higher reading scores than male teachers in ten countries: Canada (BC) was one of these ten countries. *"Thus, in many countries women appeared to be better teachers than men, especially at the lower grade levels"* (Elley, 1994, p. 156).

When a gender match was made between teachers and students (male teachers for male students, female teachers for female students) significant interactions were observed in a small number of countries. More precisely, significant interaction of gender match was observed in three countries in the nine year old sample group and in five countries for the fourteen year old sample group (Elley, 1994). It is interesting to note that Canada (BC) was one of the five countries where a gender match promotes higher reading scores in the aged fourteen population. These results lend support for the option of single-sex reading groups and/or single sex classrooms and/or schools.

These studies suggest that teacher gender has an effect on reading achievement; possible explanations to address this issue include role model identification, teacher bias and teacher expectation. Bank, Biddle and Goode (1980) explore these possible causes and question the obvious simple solution to encourage more male teachers to enter primary teaching. This solution would contradict the indications from Elley (1994) that female teachers are better teachers than male teachers at the lower grade levels. Alloway & Gilbert (1995) argue against what they call *"the simplistic remedy of masculinising the teacher workforce"* as do Bank et al (1980). Alloway & Gilbert (1995) state that where a balanced representation of men and women is always desirable, there is no certainty that being a man will be sufficient

recommendation for improving low level literacy outcomes for boys. *“Being a man does not provide automatic access to understandings of the social constructions of literacy”* (Alloway & Gilbert, 1995, p. 39).

In conclusion, it would appear at the very least gender identity complicates the delivery of the reading curriculum and the process of becoming a proficient reader. Examination of the context for reading instruction reveals that within the classroom there exists a complex web of social and cultural dynamics which potentially affects reading outcomes.

Part two: the gendered nature of genre: materials and response activities in reading instruction.

From the analysis of student questionnaires in the Provincial Reading Assessments 1977 to 1998 it was clearly demonstrated that male and female students differ in their reading habits. Research on national and international levels describe similar findings to the BC results in this area. The IEA Reading Study of 32 Countries reported that in almost every country, females express a marked preference for reading novels, while males indicate their preference for reading comic books. They report that in 21 of the 32 countries surveyed, males were significantly more likely than females to voluntarily read materials which gave directions on how to make or perform something (Wagemaker, 1996; Elley, 1994). These findings are very similar to the findings of the analysis of the BC Reading Assessments.

Being aware of the preferences in genre by gender becomes important when one considers the curriculum content in BC schools. Information collected in teacher questionnaires regarding instructional practices (Provincial Reading Assessments 1977, 1980, 1988, 1993/1994) indicate that novels are ranked as “essential” or “very important” to reading programs at all grade levels by approximately 98% of all teachers surveyed. This

suggests that the reading material which is used most frequently in BC schools for reading instruction is in the narrative genre. This trend is echoed in The IEA Reading Study of 32 Countries where teachers in most countries reported devoting most instructional time to narrative reading and least to documents/ expository reading at all age levels (Elley, 1994). The emphasis on narrative as the preferred genre of reading instruction can be perceived as gender biased when one considers the distinct preference many male students have expressed for non-narrative reading material in BC since 1977. A curriculum which favours narrative modes of literature favours females, as such a literature selection promotes reading material of little or no interest to many male students.

Recent pedagogical practice has favoured written activities which are also placed in the narrative domain. The current practice of reader response pedagogy requires the reader to create meaning from a literary text responding from their own realm of experience and relating this to the literary text through activities such as journals and reflective writing exercises (Flynn, 2000). Studies show that female students are more able to activate personal experience to respond to such writing assignments than male students (White, 1996). The writing by male students in this genre tends to be less intimate, therefore less personal, which may lead to its undervaluation by teachers (White, 1996). Teachers tend to reward and encourage narrative and descriptive writing rather than factual, analytical work which is the preferred genre of males (White, 1996; Gambell and Hunter, 2000). Again, we are reminded that teaching is not a neutral activity; *“Particular groups of students are more likely to be comfortable with the texts chosen for school use, with the type of classroom interaction teachers establish and the written genre preferred by schools”* (Alloway & Gilbert, 1996, p. 37).

The under-representation of non-narrative reading genres potentially has impact on the reading achievement of male students in BC classrooms. While recommendations from Interpretation Panels of the Reading Assessments have stated that an awareness of providing varied reading materials to all students is essential to the successful delivery of the BC reading curriculum, the consistent implementation of these recommendations is unclear. While efforts have been made to include items which are in chart format in Provincial Reading Assessment student achievement booklets, many items continue to be in the narrative genre, or what can be described as a “pseudo-narrative” genre. The “pseudo-narrative” genre includes items of a factual or biographic nature which appear as narrative text in both their writing style and appearance in the achievement booklet. Examples of these items include magazine and/or newspaper articles which appear as narrative text. The use of graphic organizers to visually organize the factual or biographic information of these items (as they would appear in authentic documents) would assist in minimizing the impression that the achievement booklets focus on the narrative genre.

Teacher Questionnaires regarding instructional practices have not been surveyed in recent Provincial Reading Assessments. In order to fully relate student achievement results with their background variables, information regarding instructional practice is required. This information would assist in recognizing whether narrative fiction and particular reading practices have attained and maintained dominance in BC schools and if the effect of these practices results in inequities between students' reading performance.

Are male students' weaker achievement scores on reading assessments in part due to the demands of reading and responding to fiction, an area in which females excel? While this cannot fully account for the differences with which male and females students perform on Provincial Reading Assessments, consideration of curriculum content and pedagogical practice

provides some insight into potential factors which contribute to these differences.

Chapter Six

Conclusions

Implications

As noted in the summary at the end of Chapter Four analysis of the data collected by the six Provincial Reading Assessments 1977 to 1998 suggests certain trends which relate gender with reading achievement.

1. Females outperform males on reading assessments in the area of reading comprehension. The difference with which they do so is widening with time.

2. Males represent a greater proportion of the students who are considered "*not yet meeting grade level expectations*" in the area of reading comprehension skills at every grade level. Their representation in this category increases from grade 4 to grade 10.

3. Females demonstrate a more positive attitude towards reading than males.

4. Males and females exhibit differences in reading habits, both in the type of material they choose to read and the frequency with which they read.

5. Males believe they are better readers than their test scores indicate.

Through the connection of the findings to current research it is possible to consider several issues of a curricular nature which address the contrast between male and female student performance on Provincial Reading Assessments 1977-1998. In summary, the preceeding discussion in Chapter Five has suggested that possible explanations for the findings of the Provincial Reading Assessments 1997-1998 include :

1. PLAP test item format appears to focus on the narrative or pseudo-narrative genre and this limits the findings;

2. socially constructed gender specific roles and expectations affect curriculum delivery and classroom interaction;
3. reading is generally perceived as a feminine subject;
4. the novel (fiction) is the preferred genre by teachers for reading instruction and this genre is preferred by females;
5. non-narrative (non-fiction) reading materials are under-represented in reading instruction materials by teachers and this genre is preferred by males;
6. response activities in reading instruction favor narrative, descriptive genres which are considered more accessible to female students.

While it is not the position of the researcher to suggest that data collected in the Provincial Reading Assessments 1977-1998 address the issues of social construction of gender and the perception of reading as a feminine subject, the connection of said issues to reading comprehension performance on large-scale assessments is worthwhile to consider when discussing the findings of this study.

It is the position of the Ministry of Education that *“gender bias can be created or reinforced through choice of topics or learning resources”* (The Primary Program 2000, p.113). This statement further reinforces the need for educators in BC to examine their instructional practices in reading with an awareness of gender given the differences exhibited on the Provincial Reading Assessments 1977-1998 by male and female students. Consideration of this statement is also relevant when examining the structure and item selection of Provincial Reading Assessments.

Finding Meaning

Given the recent success in promoting higher scores for females in the subject areas of math, sciences and computer technology, it would appear that interventions of a curricular nature do make a difference in achievement levels (Alloway & Gilbert, 1995; Hoff Sommers, 2000; Martino, 1995; Murphy, 1996). However, before intervention strategies may be developed and applied in the area of reading, one must first consider what the difference in results between genders on Provincial Reading Assessments 1977-1998 actually means. Does the analysis of the results of the Provincial Reading Assessments indicate that male and/or female students are being disadvantaged and /or advantaged by the present reading programs in BC ? If females are considered stronger, more successful readers, what does this mean for them in terms of educational attainment and future options ? Are male students becoming disabled in their reading skills to such an extent that they are significantly disadvantaged when compared to their female counterparts over the long term ? *“Although female students are clearly outperforming males in the language arts classrooms of Canadian schools, questions remain about how that performance translates into the world of work”* (Gambell & Hunter, 2000, p. 716).

If the long-term possible effects are set aside, the difference indicated on the Provincial Reading Assessments 1977-1998 between male and female students in reading comprehension can be viewed as an indication that something is presently out of balance in BC reading programs. That there is a difference between genders is not the most pressing issue of importance, but rather the critical issue is that this difference is widening. The analysis of mean percent correct scores in the Reading Assessments 1977-1998 indicated that such a difference exists and is widening over the time period of the study. This change suggests that factors which impinge on the

development, implementation and delivery of the curriculum are also changing. The inverse relationship between gender and representation in categories such as "*exceeding expectations*" and "*not yet meeting expectations*" noted in the 1988 and 1998 Reading Assessment is also cause for concern. It suggests that not only are the differences in performance and that change in curriculum are occurring, but that such changes are exacerbating rather than ameliorating the disparity. This imbalance effectively illustrates the degree of contrast between gender and reading achievement in present BC schools.

As previously noted, it is with caution and an awareness of their limitations that one interprets the results of large-scale assessments. When one recalls the provincial context in which assessment and accountability are presently emphasized, it is imperative to be reminded that provincial large-scale assessments provide a limited view of any program and their findings must be viewed within these parameters. Reading comprehension results on large-scale assessments indicate how well the students performed on the texts provided and do not assess other aspects of their reading skills.

The performance results on Provincial Reading Assessments may indicate less that males are weak readers, but more that what we value and teach in reading may be unconsciously and unintentionally biased on a gender level. When one considers the indicated preferences for reading material by both males and females, and compares this with frequently used instructional reading materials, concerns are raised for both genders. Is the present reading curriculum and its inherent instructional practices producing non-adaptable readers? The focus on the novel and narrative genre in reading negatively impacts both male and female students. The narrowing of female students' interest to almost exclusive novel reading represents an imbalance in the development of varied reading skills. Being able to effectively read and understand documents, non-fiction and technical

texts are skills required in many school subjects and work-related situations. Research suggests that :

“There seems to be a general consensus that the narrowing of girls’ interests to genres of writing which are easily marginalized puts them at a disadvantage educationally” (White, 1996, p. 98).

“There has grown a realization that girls’ generally higher levels of achievement in reading may reflect the nature of the reading demands made of them, and may in fact mask substantial under-achievement in some areas of reading, which for complex reasons, are less carefully monitored in schools, such as the reading of information texts” (Barrs, 1993, p. 3).

“Reading romance fiction may indeed improve females’ literacy skills, but simultaneously disadvantage females by indoctrinating them to accept and inferior, stereotypical and passive position in the workplace” (Gambell & Hunter, 2000, p. 716).

The focus in schools on the narrative forms of writing which, as previously discussed, falls into the category of “girl writing”, may not be serving the best educational interests of both male and female students. Mitchell (1994) while discussing the critical perspective on the underlying ideology of particular genres, quotes Gilbert (1993) *“expressive writing and narrative writing, most frequently the writing of females, is not the writing of power”* (p. 75).

Males, with their almost global preference for non-fiction materials, their avid reading of comic books, newspapers and magazines, while limiting their success within “school standards” of reading achievement as evidenced on the Provincial Reading Assessments, may in fact be enriching

their reading skills in areas these Assessments do not address. Male underachievement on Provincial Reading Assessments when compared to their female counterparts' scores suggests a disabling trend within male language development. Is this trend a true reflection of what is happening with males and reading? Research is needed to examine this trend over the long-term. The findings of such research would shed light on whether males are being disadvantaged by the present reading program and the long-term effects of this inequity.

It is possible that male students' out-of-school reading habits, their voluntary reading and "non-assessed reading" develops varied reading skills and prepares them for the demands of higher education and/or work-related reading. Swift (1995) noted this in his study of reading speeds and gender, specifically the tremendous increase in reading speeds indicated by male students when they were given non-fiction text to read. *"As this sort of reading (non-fiction) takes greater precedence in the later years of schooling this means boys may be advantaged in the latter years of their schooling"* (Swift, 1995, p. 50). Gambell & Hunter also identify this trend and quote Simpson (1996) *"In secondary school boys' reading practices are more congruent with the acquisition of social power and financial success"* (p. 699). Future studies which examine the "non-assessed" area of males' reading skills may yield interesting and informative results.

Current research indicates that males are taking greater interest in new forms of literacy offered by computer technology than their female peers (Millard, 1997). This claim is supported by data gathered in the 1998 Provincial Reading Assessment which indicated that at all three grade levels the use of computers by males was greater than that of females and that females were less confident in computer use than males. While the correlation between computer use and reading comprehension performance on the 1998 Reading Assessment was low (almost nonexistent in some cases)

it does effectively illustrate the strong preference by males for computer use. In future assessments, the relationship between computer use and reading comprehension may strengthen. If the concept of literacy is expanded to include the interrelated media of film, computer, web sites and CD-ROM, then it is possible to conclude that those who are most fluent in these literacy forms will be most powerful and influential in the workplace. *“The difference in boys’ and girls’ performance in current language examinations may well be a sign that boys are already staking a claim to more powerful means of communication by participating more actively in the biggest revolution of literacy practices since the introduction of print”* (Millard, 1997, p. 181). If this is the case, a study which traces the reading skill development of males may reveal that it is the female students with their narrowed, constrictive reading experiences who are ultimately disadvantaged.

Addressing Imbalances

Intervention strategies which achieved success for improving female students’ success in math and science areas are often referred to as “girl-friendly” programs. Do the results of this analysis of Reading Assessments suggest a need for creating “boy-friendly” reading programs ?

Catering to males’ tastes in reading material goes beyond providing novels which feature characters and plot-lines which appeal to males. In many classrooms this already takes place. Making space in the reading program to include non-fiction and varied reading materials is a strategy which has much to offer both male and female students. Creating a “boy-friendly” reading program must be differentiated from attempts to “masculinise” the curriculum. Rather than pitting male and female students’ interests against one another (a situation which is described as the “*competing victim syndrome*” by Alloway and Gilbert, 1996) changes in

reading programs must address both the needs of male and female students in promoting improved literacy performance. While a rich classroom context of fiction and its strong literary heritage may be preferred by many teachers, it must be recognized as a socially-developed cultural practice which may not be best serving the need of the present culture. *"Schools need to recognize that a decline in sustained reading in leisure time is a feature of modern culture"* (Millard, 1997, p. 167). Related to this decline in reading is the trend described as *"aliteracy"*, a phenomenon of people who know how to read but choose not to (Valpy, 2001). Termed as a byproduct of the proliferation of information technology and time-pressured lifestyles in the present culture, it seeks to address the discrepancy between being able to read and having the motivation and interest to do so. This aspect of teaching reading is becoming increasingly difficult to address. Being able to sufficiently motivate students to read books amidst the competing appeals of video, computers and television is intensely challenging. Exploring alternate forms of text as curricular materials may at the same time engage male students more readily with reading and expand females' interest and skills in varied reading contexts.

In the classrooms of BC schools this can mean:

1. the provision of a sufficient range of reading materials to ensure all students' needs are met. This would include a wide range of genre and authors : novels, non-fiction books, tapes, videos, computer software, magazines, newspapers, comic books, comic book novels, consumer reports, technical texts;
2. facilitating classroom time, instruction and support to explore the varied genre of reading material;

3. implementing meta-cognitive teaching strategies which enhance students' reading comprehension skills (comprehension monitoring, text structuring, interactive reading pairs);

4. developing partnerships with people of varied age, gender and background to promote reading activities with students to provide different role models and different reading experiences.

Examining further aspects of the present reading program would include the development of response activities which step out of the narrative domain and delve into activities which are more accessible to male students. Such activities would communicate to male students that many forms of literacy are valued.

In the classrooms of BC schools this can mean :

1. the encouragement of varied reader response to literary texts. This could include writing expert opinions (males like to express expertise, Gambell, 2001) creating heroic action sequences (similar to those found in comic books, computer and video games), responding through role-play or drama;

2. implementing meta-cognitive strategies to reader response;

3. offering single-sex reader response groups.

The implementation of these recommendations would require a shift in teachers' attitudes, which is no small task. Martino (1995, 1998) calls for reform in the manner of critical literacy pedagogy for high school students. By encouraging the teacher to take on the role of a *"classroom strategist in the formation of literate capacities in students and particularly in enhancing critical literacy for boys"*, Martino (1995, p.19) argues that both male and female students' literacy outcomes would be enhanced by the development of

critical literacy pedagogy. It must be noted that the researcher is well aware that professional development support for teachers is critical in facilitating curricular or instructional change and that the limitations imposed by fiduciary needs exist. It is prudent to once again note that schools and classrooms and the curriculum which is therein taught are connected and representative of the larger society and the culture in which they exist.

"Schooling is just a microcosm of a gender difference in performance and perhaps expectation in the larger society. Demanding that curriculum and instructional adaptations redress societal and home expectations and practices is to expect too much too soon" (Gambell & Hunter, 2000, p. 716).

The shift required to accept that male and female students are differently literate is more easily accomplished if one first accepts that parity and equity are not the same thing. When teachers strive to offer programs which have a goal of gender equity, it must be realized that in order to achieve this, differences between gender and reading skills, habits and interests must be acknowledged and addressed. The tension between sameness and equity effects the outcomes for all students of a successful reading program. While this study may have initially focused on the disadvantaged position of male students' reading skills presently in BC classrooms, it has come to question the needs of both male and female students and how they are best served. The weaker performance of male students when compared to their female counterparts in reading comprehension performance on the Provincial Reading Assessments 1977-1998 may be more than a simple indicator of underachievement. It may be a signal that what we teach, assess and perceive to value in teaching reading may be limiting the future potential of both the male and female students whom we teach. The widening gap between genders in reading

comprehension performance may be the red flag which attracts our attention to larger concerns and prompts us to question the current reading curriculum, materials and teaching practices.

These concerns lead us to consider future studies which would enrich the understanding of the relationship between gender and reading. These potential areas of study include :

1. the analysis of the results of Provincial Writing Assessments sorted by gender and then related to the findings of this thesis;
2. field studies which examine the reading habits and interests of male and female students in the classroom context and then relate the findings to performance on Provincial Reading Assessments;
3. the inclusion of teacher questionnaires in Provincial Reading Assessments to generate data on provincial reading programs (the use of materials and instructional strategies) so that this information may be related to reading performance.

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Appendix 1
Example of Content Validity:
Test items related to
provincially-mandated curriculum

PLAP 1998 Table of Specifications

Relationship to Prescribed Learning Outcomes

Grade 4

<u>Prescribed Learning Outcomes</u>	<u>Test Item(s)</u>	<u>Question Type</u>
<i>Comprehend and Respond (Strategies and Skills)</i>		
<ul style="list-style-type: none"> read, listen, and view for specific purposes 	All test items expect students to be able to read for specific purposes.	Literal (16) Inferential (14) Critical (5)
<ul style="list-style-type: none"> use strategies, including asking and developing questions, rereading and reading further to develop understanding 	All test items require rereading and reading further.	Literal (16) Inferential (14) Critical (5)
<ul style="list-style-type: none"> predict the meaning of unknown words by using structural analysis, context clues, and graphic cues 	Que. 4 Que. 5 Booklet 1	Inferential Inferential
<ul style="list-style-type: none"> locate information using headings, glossaries, and tables of contents 	Que. 13 Que. 14 Que. 15 Que. 16 Que. 17 Que. 18' Booklet 1	Inferential Inferential Inferential Literal Critical Critical
<i>Comprehend and Respond (Comprehension)</i>		
<ul style="list-style-type: none"> interpret their impressions of simple and direct stories, poetry, and other print material and electronic media 	Que. 7 Que. 11 Que. 12 Que. 15 Que. 18 Que. 25 Booklet 1	Critical Inferential Critical Inferential Critical Inferential
<ul style="list-style-type: none"> organize information or ideas they have read, heard, or viewed in the form of simple charts, webs, or illustrations 	Que. 1 Que. 3 Booklet 2	Literal Literal

Appendix 2
Sample Test Item:
Foxes of the Frozen North
Grade 4 Test Booklet
(1984, 1998)

THE PASSAGE BELOW. THEN ANSWER QUESTIONS 28 TO 32 USING INFORMATION FROM THIS PASSAGE.

FOXES OF THE FROZEN NORTH

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mostly in the Far North where snow blankets the ground for most of the year. This fox has a winter coat that is almost pure white. Its summer coat is brownish gray. The blue fox is found mostly farther south, where there is less snow. Its bluish gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than those of the red fox. Animals lose body heat through the thin skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

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What is one difference between Arctic foxes and foxes of other areas?

- 0 A. Arctic foxes have bigger ears.
- 4 B. Arctic foxes eat more.
- 5 C. Arctic foxes eat less.
- 2 *D. Arctic foxes have chunky bodies.
- 6 E. I don't know.

S29. How are the feet of the Arctic foxes protected from the cold?

- 3 A. Their feet are big.
- 73 *B. There is long hair between the pads.
- 5 C. Their feet are small.
- 9 D. There is rough skin on the sole of the foot.
- 5 E. I don't know.

S30. Which one of the following statements tells you about how Arctic foxes keep warm?

- 15 A. They have bluish-gray fur.
- 50 *B. They use their tails like blankets.
- 10 C. Snow blankets the ground for most of the year.
- 14 D. Their coats change colour with the seasons.
- 7 E. I don't know.

S31. How would foxes of the frozen north most likely change if the weather got warmer?

- 41 *A. Their coats would get thinner.
- 42 B. The colour of their coats would get lighter.
- 4 C. They would get fatter.
- 3 D. Their ears would get smaller.
- 16 E. I don't know.

S32. This passage tells you ...

- 82 *A. facts about Arctic foxes.
- 3 B. why foxes are important to man.
- 4 C. why we should try to save the foxes.
- 3 D. a story about a fox who didn't like the cold.
- 4 E. I don't know.

Sample Item: Grade 4 1998

Read the passage below. Use the information to answer questions 3 and 4.

Foxes of the Frozen North

When you hear the word "fox", you probably picture a slender, reddish animal with large, pointed ears. The red fox, the kind of North American fox with the greatest range, looks like that. But foxes of the frozen north are different. Arctic foxes have chunky bodies, small ears, and coats that change colour with the seasons.

Some Arctic foxes are white; others are blue. The white fox lives mainly in the Far North where snow blankets the ground most of the year. This fox has a winter coat that is almost pure white. The blue fox is found mostly farther south. Its bluish-gray fur is dark in winter and light in summer.

Arctic foxes are well suited to life in cold lands. They have thick winter coats. Their ears are smaller than the red fox. Animals lose body heat through the skin of their ears. The smaller ears of Arctic foxes help the animals conserve heat.

As Arctic foxes run over the ice and snow, long hair between the pads of each paw protects their feet from the cold. When they curl up to rest, they wrap their bushy tails around their bodies and use the tips to cover their noses.

3. Fill in the boxes below by comparing 3 features of the red fox and the Arctic fox.

red fox	Arctic fox
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •

4. Describe 4 ways that Arctic foxes are well suited to life in the north. Explain each one.

a.)

.....

.....

b.)

.....

.....

c.)

.....

.....

d.)

.....

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Title of Thesis:

Reading Comprehension and Gender in
Provincial Reading Assessments 1977-1998

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